

# Augmented and virtual reality: emerging legal implications of "The Final Platform."

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*Mark Zuckerberg, Facebook CEO*

“Virtual reality was once the dream of science fiction. But the internet was also once a dream, and so were computers and smartphones. The future is coming.”



# Augmented and virtual reality: emerging legal implications of “The Final Platform.”<sup>1</sup>

## Introduction

In August 2015, Time Magazine declared that Virtual Reality (“VR”) was about to change the world.<sup>2</sup> A year earlier, Facebook bought Oculus VR for \$2.3 billion signalling the impact of what Oculus founder Palmer Luckey referred to as “The Final Platform,” an immersive technology that replaced the user’s vision with a computer augmented virtual vision with the potential to create a new collaborative social experience.<sup>3</sup> Competing platforms raced to bring VR headsets to consumers as companies and brands developed ways to use VR and Augmented Reality (“AR”) technology to engage its customers. A year later, projections estimated that the number of augmented and virtual reality devices sold will rise from 2.5 million in 2015 to 24 million in 2018,<sup>4</sup> and there are expected to be as many as 171 million active VR users by 2018.<sup>5</sup> It is undeniable that the fourth and perhaps final technological platform wave has come quickly upon us.<sup>6</sup>

## 2016: The tipping point

In 2016 Oculus VR released the Oculus Rift, Microsoft released the HTC Vive and Sony released PlayStation VR headsets to consumers. However, these first generation headsets, primarily targeted towards gamers, are expensive, cumbersome and need to be tethered to a PC or gaming console. In contrast, the

Samsung Gear VR and Google Cardboard allow users to turn their smartphones into AR/VR devices and were often the public’s first contact with the new interactive technology at festivals,<sup>7</sup> sporting events<sup>8</sup> and as a way to augment news stories.<sup>9</sup>

Perhaps nothing has done more to bring AR/VR technology into the zeitgeist of the mainstream consumer than Niantic Labs’ augmented reality app Pokémon Go (about which more within). The free-to-own app became a cultural phenomenon when it was released on July 6, 2016. Within a week of its release, the game, in which users take on the role of trainers and set out to find and capture virtual Pokémon which appear on their smartphones in the real world, was the biggest mobile game in U.S. history with about 21 million daily active users<sup>10</sup> and was estimated to have been installed globally more than 75 million times in its first 3 weeks.<sup>11</sup> While critics were quick to point out Pokémon Go’s rudimentary graphics and its virtual creature’s inability to interact with the real world, Pokémon Go demonstrated the substantial potential for AR/VR technology to engage users and act as a new conduit between brands and customers.

While Pokémon Go was many consumers’ first exposure to the concept of AR/VR, quietly, companies and institutions have been developing and using AR/VR technology for years. Hospitals use VR to train their

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<sup>1</sup> This Introduction was prepared, and the articles in this White Paper edited, by Michael S. Sherman, a Partner resident in the Century City office of Reed Smith and the leader of the firm’s Film and Television practice within its Entertainment and Media Industry Practice Group, and by Michael I. Hartman, formerly a Reed Smith associate in the Entertainment and Media Industry Group in Century City.

<sup>2</sup> Why Virtual Reality is About to Change the World, Joel Stein, August 6, 2015 <http://time.com/3987022/why-virtual-reality-is-about-to-change-the-world/>.<sup>3</sup> id.

<sup>4</sup> Virtual Reality Devices: 4 Billion+ Business by 2018, Paul Lamkin, June 18, 2015, [www.forbes.com/sites/paullamkin/2015/06/18/virtual-reality-devices-4-billion-business-by-2018/#43e18df2fd92](http://www.forbes.com/sites/paullamkin/2015/06/18/virtual-reality-devices-4-billion-business-by-2018/#43e18df2fd92).

<sup>5</sup> Virtual Reality May Create Novel IP Issues In The Real World, March 28, 2016, <http://www.law360.com/articles/769479/virtual-reality-may-create-novel-ip-issues-in-the-real-world>.

<sup>6</sup> After missed year, mobile AR to drive \$108 billion VR/AR market by 2021, <http://www.digi-capital.com/news/2017/01/after-mixed-year-mobile-ar-to-drive-108-billion-vr-ar-market-by-2021/#.WU2LvBuWyHs>.

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<sup>7</sup> Virtual Reality Steals the Show at Sundance, Jennifer Jolly, February 6, 2016, <http://www.usatoday.com/story/tech/columnist/2016/02/06/virtual-reality-steals-show-sundance/79822372/>

<sup>8</sup> NBA to Broadcast First Live Pro Sports Event in Virtual Reality, Jessica Golden, October 27, 2015, <http://www.cnbc.com/2015/10/26/nba-to-broadcast-first-live-pro-sports-event-in-virtual-reality.html>

<sup>9</sup> <http://www.nytimes.com/marketing/nytvr/>

<sup>10</sup> ‘Pokémon Go’ Number of Downloads: How Many People Are Playing It?, Brendan Morrow, July 14, 2016, <http://heavy.com/games/2016/07/pokemon-go-number-of-downloads-daily-active-users-how-many-people-phones-are-playing-numbers-statistics-facebook-tinder-candy-crush-united-states/>

<sup>11</sup> Pokémon Go Estimated to Have Been Downloaded 75 Million Times, Alex Newhouse, July 26, 2016, <http://www.gamespot.com/articles/pokemon-go-estimated-to-have-been-downloaded-75-mi/1100-6442180/>

doctors in surgery techniques,<sup>12</sup> aerospace and defense companies are employing VR technology in combat simulations<sup>13</sup> and VR is being used in therapies to treat post-traumatic stress disorder and early motor rehabilitation for stroke patients.<sup>14</sup> Meanwhile, AR/VR's rapid expansion into live events will provide consumers with access to live concerts, sporting events, theatre and conventions through immersive "front row" experiences.<sup>15</sup> As the technology evolves and the platforms become more accessible to consumers, the applications and integration of AR/VR technology will continue to grow.

Today, the number of companies engaged in AR/VR development is expanding exponentially (Facebook, Microsoft and HTC alone have each committed teams to these technologies) fuelled by classic small developers and an influx of venture funding. Beginning in 2010, VC investors have pumped about \$4.5 billion into the space through more than 1100 venture deals around the world to more than 700 start-ups.<sup>16</sup>

## Legal implications of emerging AR/VR technology

As with any disruptive technology, AR/VR has the potential to create a host of new legal issues and challenges. The overwhelming success of Pokémon Go highlighted a number of these issues from the use of copyrighted images and trademarks in virtual worlds and the collection, use and sharing of users' personal information to injury to people and property from users immersed in the technology.<sup>17</sup> Future disputes will likely include arguments about the ownership of AR/VR rights under pre-existing contracts entered into long before AR/VR became realistic platforms that don't address these "new media" rights (akin to the arguments that have pervaded the entertainment industry for at least 100 years as new technologies developed – silent films to talkies, films to videocassettes and discs, broadcast television to cable and satellite and various forms of video on demand).

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<sup>12</sup> Can Surgeons Be Trained Using Gaming Technology, David McNamee, August 29, 2014, [http://www.medicalnewstoday.com/articles/281752.php?utm\\_source=TrendMD&utm\\_medium=cpc&utm\\_campaign=Medical\\_News\\_Today\\_TrendMD\\_1](http://www.medicalnewstoday.com/articles/281752.php?utm_source=TrendMD&utm_medium=cpc&utm_campaign=Medical_News_Today_TrendMD_1)

<sup>13</sup> Why The Army Is Using Virtual Reality For Patriot System Training, John Gaudiosi, December 16, 2015, <http://fortune.com/2015/12/16/army-training-with-vr/>

<sup>14</sup> Virtual Reality Therapy Wows Stroke Victims, Louis Basenese, May 12, 2015, <https://www.wallstreetdaily.com/2015/05/12/mindmaze-virtual-reality-therapy/>

<sup>15</sup> NextVR Teams Up With Live Nation to Broadcast Concerts in Virtual Reality, James Vincent, May 4, 2016, <http://www.theverge.com/2016/5/4/11589814/nextvr-live-nation-gear-vr-music-gigs>

<sup>16</sup> VR/AR Breakdown: VCs investing heavily to make it a reality, Mikey Tom, May 2, 2017, providing an interesting analysis of today's VS investment stats at <http://pitchbook.com/news/articles/vr-ar-breakdown-vcs-investing-heavily-to-make-it-a-reality>

<sup>17</sup> Pokémon Go's Unexpected Side Effect: Injuries, Hayley Tsukayama, July 10, 2016, [https://www.washingtonpost.com/news/the-switch/wp/2016/07/08/pokemon-gos-unexpected-side-effect-injuries/?utm\\_term=.f497e9ede9be](https://www.washingtonpost.com/news/the-switch/wp/2016/07/08/pokemon-gos-unexpected-side-effect-injuries/?utm_term=.f497e9ede9be)

As AR/VR technology becomes pervasive in our daily lives, there will be unintended legal consequences and liability issues of which companies, brands and AR/VR content creators must be aware.

This white paper – Augmented and Virtual Reality: Emerging Legal Implication of "The Final Platform" – explores such legal issues and risks of AR/VR technology in a variety of disciplines, including:

- Soft IP: Copyright, Trademark and Right of Publicity Issues
- Hard IP: Patents
- Advertising
- Privacy and Data Security
- Product Liability
- Licensing and Distribution

## Reed Smith – a long history in the audiovisual world

Our firm's involvement in the audiovisual industries dates back to the founding of what became the Rank Organisation in the 1930s, perhaps the most famous name in British film production and distribution through the rest of the 20th century, as well as being owners of the Pinewood studio complex and Odeon cinemas. The firm also represented (and continues to represent) the owners of Charles Chaplin's most well-known films. With the advent of television, the firm was able to deploy its expertise in financing and production to represent clients in this new medium, advising most of the industry's household names down the years. Our lawyers have had to keep pace with – and indeed to anticipate – the legal challenges associated with every technical development that the audiovisual industries have experienced over that span of time: be they the creation of cable, satellite and internet delivery systems; videocassettes, DVDs and on-demand services; the switchover from analogue to digital, including the advent of digital cinemas; and the internationalization of so many aspects of the business, with the consequent regulatory implications that this has entailed.

We hope you enjoy the actual, augmented and virtual ride.



## Defining augmented and virtual reality

As the technology evolves, it is important to understand what constitutes Augmented and Virtual Reality and how their unique features distinguish them from other immersive experiences. For the purposes of this paper, we use the following definitions:

Virtual Reality ("VR"): In virtual reality, users enter and interact with a fully immersive digital reality. This environment can be computer-generated or captured by video in order to replace a user's existing reality with a digital environment but, either way, VR occludes the user's natural surroundings. VR is further set apart from other immersive media by headsets loaded with sensors that track the user's head and eye movements, allowing users to interact with and navigate through these different environments.<sup>18</sup>

Augmented Reality ("AR"): Coined by Tom Caudell, a Boeing researcher who created a view of the real-world environment whose elements are overlaid (or augmented) with computer-generated images back in 1990<sup>19</sup>, AR technology refers to devices or wearable displays that superimpose text, sound, graphics or video on top of our view of the real physical world around us. This digital information is tailored to the context and space in the real environment. It's this combination of the real world around you and computer-generated objects that sets AR apart from VR.<sup>20</sup> Microsoft's HoloLens System is an example of an augmented reality platform as its headset includes a camera enabling users to see the room around them.

360 Videos: 360-degree videos, also known as immersive videos or spherical videos are video recordings or images where a view in every direction is recorded at the same time, shot using an omnidirectional camera or a collection of cameras. Examples of 360 degree videos include like New York Times VR viewed on Google Cardboard or Flickr VR and GoPro Surf videos.

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<sup>18</sup> Virtual Reality Doesn't Mean What You Think It Means, Joshua Goldman and John Falcone, March 9, 2016, <https://www.cnet.com/uk/news/virtual-reality-terminology-vr-vs-ar-vs-360-video/>

<sup>19</sup> What Pokemon Go's Success Means for the Future of Augmented Reality, Howard Yu, <https://www.wallstreetdaily.com/2015/05/12/mindmaze-virtual-reality-therapy/> July 23, 2016, <http://fortune.com/2016/07/23/pokemon-go-augmented-reality/>

<sup>20</sup> Id.

# Pokémon Go: the “Canary in the Coal Mine”?<sup>21</sup>

As AR/VR technology becomes more ubiquitous, it presents many important opportunities and challenges for individuals, companies and governments; chief amongst the challenges, particularly from a public policy standpoint, are the privacy and data security implications and concerns. The July 2016 release of the mobile game application, Pokémon Go, which received more than 7.5 million downloads in its first weeks on the market,<sup>22</sup> and has been lauded as “the world’s most successful experiment with augmented reality”<sup>23</sup> and “a herald of things to come,”<sup>24</sup> provides a compelling case in point.

The game uses a smartphone camera, display screen and GPS system, with a Bluetooth wearable device (Pokémon Go Plus) to overlay virtual sights and sounds (namely, the cute fictional cartoon characters resurrected from the much-beloved Nintendo video game of the late 1990s) onto real life settings that users navigate through as they try to locate, catch and train the “Pikachu” creatures.<sup>25</sup> The Pokémon Go Plus device alerts users to nearby “Pikachu” and other related events by vibration and LED lights so that users can stay actively involved even when not looking at their smartphones. Along its relatively short journey, however, there have been many virtual privacy and data security pitfalls. The following section discusses the Pokémon Go game to illustrate a non-exhaustive compilation of several key privacy and data security concerns with AR/VR technologies.

## The Google access mishap: too much data?

Websites and mobile applications (“apps”) collect, use and share personal information from and about their users, including sensitive information such as location, contacts and photos.<sup>26</sup> Two main questions often posed by privacy advocates, regulators, legislators, users and the plaintiffs’ bar relating to website or app privacy are:

- 1 Is the information the company is collecting, using and sharing “organic” (i.e., relevant to the actual services being provided), or “artificial” (i.e., over-

reaching and unrelated)—and, relatedly, is the company asking for greater data collection permissions than necessary?<sup>27</sup>

- 2 Are the company’s actual practices consistent with what is stated in its privacy policy or is the company collecting greater data than it leads users to believe it is collecting?<sup>28 29</sup>

Shortly after Pokémon Go first launched, Senator Al Franken (D-Minn.), who chairs the Judiciary Subcommittee on Privacy, Technology and the Law, posed precisely these very questions about the popular game. Senator Franken expressed concern regarding the app’s seemingly over-reaching collection of geolocation and other sensitive data (and its data collection practices with respect to minors) and the further troubling reports that the game required users to provide full access to their Google accounts, which meant that the app’s developer, Niantic, Inc. (formerly owned by Google), had *carte blanche* access to users’ Google accounts (including emails, contacts, photographs, location searches and map history) and other Google Drive documents.<sup>30 31</sup>

In response to the Senator’s letter of inquiry, Niantic admitted it had made a mistake, whereby a “permissions error” in the iOS version of the app account creation and authentication process was “erroneously” requesting full account permissions from users who were signing in with a Google account on an iPhone,<sup>32</sup> and released an update to fix the issue.<sup>33</sup> Despite Niantic’s explanation (and resolution of the issue), privacy rights advocates, namely the Electronic Privacy Information Center (“EPIC”), urged the Federal Trade Commission (“FTC”) to use its regulatory powers under the Federal Trade Commission Act to more closely scrutinize the app developer’s data collection practices and to pursue the incident as a violation of

<sup>21</sup> This expression first appeared in the following article: [http://www.law360.com/articles/820143/pokemon-no-go-how-lawyers-are-spoiling-the-fun-with-the-world-s-latest-craze-?article\\_related\\_content=1](http://www.law360.com/articles/820143/pokemon-no-go-how-lawyers-are-spoiling-the-fun-with-the-world-s-latest-craze-?article_related_content=1)

<sup>22</sup> <https://consumerist.com/2016/07/12/sen-al-franken-has-a-few-questions-about-pokemon-gos-access-to-personal-data/>

<sup>23</sup> [http://www.law360.com/articles/820143/pokemon-no-go-how-lawyers-are-spoiling-the-fun-with-the-world-s-latest-craze-?article\\_related\\_content=1](http://www.law360.com/articles/820143/pokemon-no-go-how-lawyers-are-spoiling-the-fun-with-the-world-s-latest-craze-?article_related_content=1)

<sup>24</sup> *Id.*

<sup>25</sup> <https://www.law360.com/articles/816835/-pokemon-go-user-data-collection-sparks-senator-inquiry>

<sup>26</sup> [http://www.law360.com/articles/820143/pokemon-no-go-how-lawyers-are-spoiling-the-fun-with-the-world-s-latest-craze-?article\\_related\\_content=1](http://www.law360.com/articles/820143/pokemon-no-go-how-lawyers-are-spoiling-the-fun-with-the-world-s-latest-craze-?article_related_content=1)

<sup>27</sup> [http://www.law360.com/articles/819087/catch-these-pokemon-go-data-collection-lessons?article\\_related\\_content=1](http://www.law360.com/articles/819087/catch-these-pokemon-go-data-collection-lessons?article_related_content=1)

<sup>28</sup> [http://www.law360.com/articles/820511/how-employers-can-prepare-for-the-perils-of-pokemon-go-?article\\_related\\_content=1](http://www.law360.com/articles/820511/how-employers-can-prepare-for-the-perils-of-pokemon-go-?article_related_content=1)

<sup>29</sup> [http://www.law360.com/articles/820143/pokemon-no-go-how-lawyers-are-spoiling-the-fun-with-the-world-s-latest-craze-?article\\_related\\_content=1](http://www.law360.com/articles/820143/pokemon-no-go-how-lawyers-are-spoiling-the-fun-with-the-world-s-latest-craze-?article_related_content=1)

<sup>30</sup> [http://www.law360.com/articles/820895/border-patrol-catches-pokemon-go-players-from-canada?article\\_related\\_content=1](http://www.law360.com/articles/820895/border-patrol-catches-pokemon-go-players-from-canada?article_related_content=1)

<sup>31</sup> [http://www.law360.com/articles/820143/pokemon-no-go-how-lawyers-are-spoiling-the-fun-with-the-world-s-latest-craze-?article\\_related\\_content=1](http://www.law360.com/articles/820143/pokemon-no-go-how-lawyers-are-spoiling-the-fun-with-the-world-s-latest-craze-?article_related_content=1)

<sup>32</sup> <http://www.franken.senate.gov/files/documents/160826NianticResponse.pdf>

<sup>33</sup> [http://www.law360.com/media/articles/823307?nl\\_pk=ea1a01e9-b38f-4e3b-8a9c-a331b6d24253&utm\\_source=newsletter&utm\\_medium=email&utm\\_campaign=media](http://www.law360.com/media/articles/823307?nl_pk=ea1a01e9-b38f-4e3b-8a9c-a331b6d24253&utm_source=newsletter&utm_medium=email&utm_campaign=media)

the FTC's consumer privacy rules.<sup>34</sup> While the app's privacy disclosures and policy (relating to what data is being collected from children and adults) are now "consistent with what one may normally see in the industry," due to the "scale and velocity of growth of the app" (not to mention the highly sensitive and precise location data that such technology uses and transmits) many expect and anticipate the app to receive "much greater scrutiny."<sup>35</sup>

### Increased target of hackers, stalkers and other criminal enterprises: how secure is the data?

Despite the Google access fix, Pokémon Go still collects "a number of troubling user data — including email addresses, names, messages sent to other users, IP addresses, the web page last visited before accessing the app, access to users' mobile device camera and exact location information," all of which pose a huge risk to users if the app is ever breached or hacked.<sup>36</sup>

Data breaches occur for a variety of reasons: Sometimes, hackers seek to access databases of financial information (or other personal information in order to gain access to financial accounts) for the purpose of engaging in identity theft or other forms of financial fraud (e.g., the Target or Yahoo data breaches). Other times, hackers infiltrate systems to take a political stand or embarrass a company (e.g., Anonymous, or those who hacked into the Democratic National Convention's email servers). In other instances, current or former employees abuse their access privileges and download data to which they have no rights, or those with legitimate access rights lose their company-issued laptops or make an honest mistake resulting in a security breach. Similarly, AR/VR systems can be hacked for any number of these or other reasons.

An individual user whose information is breached or hacked faces significant risk. For example, the misappropriation of location information collected by both augmented and virtual reality systems poses security concerns for users. Like many apps, Pokémon Go collects the precise geolocation information of the user's mobile device. If location data is part of what was accessed during a breach, the user may be in danger. "Location data may be used to form a comprehensive record of an individual's movements and activities. If disclosed or posted, location data may

be used by criminals to identify an individual's present or probable future location, particularly if the data also contain other personally identifiable information. This knowledge may then be used to harm the individual or his property through, for instance, stalking or theft."<sup>37</sup> Shortly after its release, Pokémon Go became the target of cyber-attacks and received "threats of future, more damaging hacks."<sup>38</sup> In one instance, a teenager in Guatemala was lured onto a side street by Pokémon Go's "beacon" feature and robbed and murdered.<sup>39</sup> Similarly, in Missouri, a dozen people were lured into a secluded area and robbed at gunpoint.<sup>40</sup>

Augmented reality also presents unique security risks because digital data overlays the user's reality.<sup>41</sup> Users trust that this overlay of digital data will be accurate, but if hackers can infiltrate systems to remove data, they can also get into systems to alter data (affecting data integrity), and conceivably add inaccurate or harmful data. For example, for some types of AR, "[b]y flashing bright lights in the [AR] display, playing loud sounds, or delivering intense haptic feedback, applications could physically harm users."<sup>42</sup>

A business that is hacked also suffers significant consequences. Forty-seven states, plus the District of Columbia, now have laws that require notification to affected individuals in the event of a data security breach that compromises the security or confidentiality of personal information. Each law defines "personal information" and what constitutes a security breach slightly differently. Personal information usually means an individual's first and last name or first initial and last name, in conjunction with some other piece of data, such as a Social Security number, driver's license number, or financial account number and passcode or PIN. Some states have expanded their definitions of "personal information" to include medical or health

<sup>34</sup> [http://www.law360.com/media/articles/823307?nl\\_pk=ea1a01e9-b38f-4e3b-8a9c-a331b6d24253&utm\\_source=newsletter&utm\\_medium=email&utm\\_campaign=media](http://www.law360.com/media/articles/823307?nl_pk=ea1a01e9-b38f-4e3b-8a9c-a331b6d24253&utm_source=newsletter&utm_medium=email&utm_campaign=media)

<sup>35</sup> [http://www.law360.com/articles/817053/-pokemon-go-developer-wades-into-privacy-minefield?article\\_related\\_content=1](http://www.law360.com/articles/817053/-pokemon-go-developer-wades-into-privacy-minefield?article_related_content=1)

<sup>36</sup> [http://www.law360.com/media/articles/823307?nl\\_pk=ea1a01e9-b38f-4e3b-8a9c-a331b6d24253&utm\\_source=newsletter&utm\\_medium=email&utm\\_campaign=media](http://www.law360.com/media/articles/823307?nl_pk=ea1a01e9-b38f-4e3b-8a9c-a331b6d24253&utm_source=newsletter&utm_medium=email&utm_campaign=media)

<sup>37</sup> *Consumer's Location Data: Companies Take Steps to Protect Privacy, but Practices Are Inconsistent, and Risks May Not be Clear to Consumers*, Statement of Mark L. Goldstein, Director, Physical Infrastructure Issues, Testimony Before the Subcommittee on Privacy, Technology and the Law, Committee on the Judiciary, United States Senate; United States Government Accountability Office, GAO-14-649T (June 4, 2014).

<sup>38</sup> [http://www.law360.com/media/articles/823307?nl\\_pk=ea1a01e9-b38f-4e3b-8a9c-a331b6d24253&utm\\_source=newsletter&utm\\_medium=email&utm\\_campaign=media](http://www.law360.com/media/articles/823307?nl_pk=ea1a01e9-b38f-4e3b-8a9c-a331b6d24253&utm_source=newsletter&utm_medium=email&utm_campaign=media)

<sup>39</sup> [http://www.law360.com/articles/824588/pokemon-go-s-product-liability-woes?article\\_related\\_content=1](http://www.law360.com/articles/824588/pokemon-go-s-product-liability-woes?article_related_content=1);

*see also* <http://www.news.com.au/technology/home-entertainment/gaming/apps/pokemon-gos-first-death-as-warning-issued-about-landmines/news-story/e29caec2a2170721b657bae6a671b118>

<sup>40</sup> [http://www.law360.com/articles/824588/pokemon-go-s-product-liability-woes?article\\_related\\_content=1](http://www.law360.com/articles/824588/pokemon-go-s-product-liability-woes?article_related_content=1);

*see also* <http://www.foxnews.com/us/2016/07/11/missouri-police-say-4-teens-used-pokemon-go-to-rob-people.html>;

[http://www.stltoday.com/news/local/crime-and-courts/teens-who-allegedly-robbed-pokemon-go-player-investigated-in-other/article\\_72c2e5b1-9c06-58d1-95ec-7d227e27ff0d.html](http://www.stltoday.com/news/local/crime-and-courts/teens-who-allegedly-robbed-pokemon-go-player-investigated-in-other/article_72c2e5b1-9c06-58d1-95ec-7d227e27ff0d.html)

<sup>41</sup> *See* Security and Privacy for Augmented Reality Systems, Franziska Roesner, Tadayoshi Kohno, David Molnar, *Communications of the ACM*, Vol. 57 No. 4, pp. 88-96 (April 2014).

<sup>42</sup> *Id.* at p. 91.

information, biometrics information, email address and password, and, importantly for Pokémon Go, geolocation. This notification is meant to give individuals whose information was compromised an opportunity to protect themselves against identity theft or other potential harm. Breach notification is an expensive and time-consuming endeavor and one that should cause any AR/VR developer to limit the kind of information it collects, and to invest in systems, policies and procedures aimed at protecting the data that is collected.

In addition to the accidental disclosure of data as the result of a breach, or the exposure of data after a system is hacked, there is also the intentional sharing of data (also known as third-party data sharing) for targeted marketing, government and other surveillance and other purposes, which poses additional privacy concerns for AR/VR technology.

### The pitfalls of third-party sharing: behavioral advertising

Third-party data sharing has become quite commonplace in online and mobile app privacy-policy and terms-of-use parlance, with Pokémon Go<sup>43</sup> being no exception.<sup>44</sup> In exchange for the benefit of being able to access and use apps like Pokémon Go, most users voluntarily provide increasingly personal information about themselves to the app (in this context, the data controller) and “accept” the terms and conditions of the app’s privacy policy (including its third-party data sharing terms). As a result of this seemingly innocuous exercise, however, consumers effectively have little real knowledge or choice about which specific third parties gain access to their information (the “*Incognito Problem*”) and how such third parties will use and further disclose such information (the “*Onward Transfer Problem*”).<sup>45</sup>

Indeed, website and mobile app operators, including those in the AR/VR space, share troves of data about their users with third-party advertisers. Entire industries that utilize these massive aggregated consumer data sets have arisen in fields such as behavioral advertising, which relies on data analytics to allow marketers to target specific marketing to people with laser accuracy. Though this trend is not new or unique to the AR/VR space, privacy advocates find this trend troubling and often push for more regulation

and enforcement to better protect consumer privacy. Generally, consumers report that they prefer receiving the more personalized curated content (that is, advertising content that is more pertinent to their needs and interests) resulting from such tools; however, the danger in this is that companies may gain too much power and control over consumers and their behavior.<sup>46</sup>

Ostensibly as a commentary on these problems, *The Onion* posted the following FAQ about Pokémon Go:

**Q:** What is the object of Pokémon Go?

**A:** To collect as much personal data for Nintendo as possible.

By creating PokéStop locations and other special virtual locations and through the app’s “gym” and “lure” features, the app’s developer is able to encourage and incentivize users to visit specific locations.<sup>47</sup> The game’s architecture also provides the game’s creators insight into where people choose to venture in their environment and enables the game’s developer to track how fast players are traveling, and thus determine whether users are walking, running, riding a bike or driving.<sup>48</sup> It remains unknown how this data may be used, but the potential uses are limitless — collected data could be used to understand pedestrian and bike traffic patterns in neighborhoods, or track car travel as users drive to different PokéStop locations in search of rewards and rare Pokémon.<sup>49</sup> Finally, by setting up obstacles (like hatching a Pokémon Egg, which requires users to travel a certain specified distance) the game is able to control users’ actions and movements in their physical environment.<sup>50</sup> Reportedly, in one bizarre instance — illustrating the power of AR/VR technology to shape people’s behavior — two Pokémon hunters in San Diego fell off a cliff in pursuit of digital treasure.<sup>51</sup>

### The pitfalls of third-party data sharing: dataveillance

Marketers, hackers, stalkers and other criminals are not the only ones exploiting AR/VR technology — government agencies have also learned to access AR/VR games to gain intelligence on criminal enterprises. According to the classified government documents leaked by the former National Security Agency contractor Edward J. Snowden, in response to

<sup>43</sup> Pokémon Go’s privacy policy (July 1, 2016): “We may share aggregated information and non-identifying information with third parties for research and analysis, demographic profiling, and other similar purposes. This information will not include your (or your authorized child’s) PII.” Available at <https://www.nianticlabs.com/privacy/pokemongo/en> (last accessed Sep. 14, 2016).

<sup>44</sup> “*Three’s a Crowd: Towards Contextual Integrity in Third-Party Data Sharing*,” Harvard Journal of Law & Technology, 28 Harv. J. Law & Tec 325 (Fall, 2014) N. Kim.

<sup>45</sup> “*Consumer Information Privacy and the Problem(s) of Third-Party Disclosures*,” C. Asay, Northwestern Journal of Technology and Intellectual Property Vol. 11, No. 5 (Apr. 2013)

<sup>46</sup> <https://theundisciplined.com/2014/07/21/an-introduction-to-augmented-reality-and-the-law/>

<sup>47</sup> [http://www.law360.com/articles/819087/catch-these-pokemon-go-data-collection-lessons?article\\_related\\_content=1](http://www.law360.com/articles/819087/catch-these-pokemon-go-data-collection-lessons?article_related_content=1)

<sup>48</sup> *Id.*

<sup>49</sup> *Id.*

<sup>50</sup> [http://www.law360.com/articles/819087/catch-these-pokemon-go-data-collection-lessons?article\\_related\\_content=1](http://www.law360.com/articles/819087/catch-these-pokemon-go-data-collection-lessons?article_related_content=1)

<sup>51</sup> [http://www.law360.com/articles/820143/pokemon-no-go-how-lawyers-are-spoiling-the-fun-with-the-world-s-latest-craze-?article\\_related\\_content=1](http://www.law360.com/articles/820143/pokemon-no-go-how-lawyers-are-spoiling-the-fun-with-the-world-s-latest-craze-?article_related_content=1)

the concern that terrorists and other criminal networks might be using AR/VR games to “communicate secretly, move money or plot attacks,” the intelligence community “entered terrain populated by digital avatars that include elves, gnomes and supermodels” and “infiltrated the fantasy worlds of World of Warcraft and Second Life” to conduct surveillance and collect data in the games played by “millions of people across the globe.”<sup>52</sup> Such technology enables law enforcement and the intelligence community to create make-believe characters, try to recruit informers, collect data and snoop in real time on the contents of communications between millions of players worldwide, thus facilitating law enforcement’s goals.<sup>53</sup> Critically, however, and perhaps best illustrating the Onward Transfer Problem, much of the information that government agents gather on individuals is from “sources that few would believe the government could gain unfettered access to, but which, under current Fourth Amendment doctrine and statutory protections, are completely accessible” — from “fourth parties” (that is, private companies that acquire information from the third-party data sharing sources described above) which aggregate and disclose, without impunity, information the government would otherwise be barred from collecting on its own.<sup>54</sup>

AR/VR technology that utilizes facial recognition presents additional privacy and security concerns. First, facial recognition software coupled with AR/VR technology allows a user to do much more than just identify the person who is being analyzed. The technology has the potential to access significantly more data, much of it sensitive. In July 2011, privacy economist and Carnegie Mellon researcher Alessandro Acquisti revealed a prototype iPhone application that, using nothing more than a person’s photograph taken through a web camera and information gleaned from public Facebook profiles and a social security database, could: (a) with just four attempts, correctly predict the first five digits of a person’s Social Security number about 27% of the time, and (b) calculate in less than 3 seconds, ten possible matching faces and accompanying names with a somewhat alarming success rate of more than 30%.<sup>55</sup>

In another example, an AR-based sex offender tracking app that has hit the market combines facial recognition capabilities with data from sex offender databases to allow for real-time identification of potential sex offenders.<sup>56</sup> With time, the applications of these combined technologies will become increasingly more sophisticated, which is both thrilling and terrifying all at once. For example, “Golden-i Police Pro HMD” (which is also being marketed to fire-fighters, paramedics and maintenance workers), allows a user to remotely control other devices, identify suspects, receive alerts from motion sensors, scan license plates, monitor basic vital signs and call up floor plans and GPS coordinates.<sup>57</sup> It’s not difficult to imagine a world where hackers manipulate the data being relied upon by law enforcement, thereby giving law enforcement officers false positives.

## Conclusion

As with any new technology, the potential applications (and benefits) of AR/VR technology are immense, but so are the risks. The mass democratization of AR/VR will result in an even more rapid growth in the volume and variety of personal data being collected, stored, shared, and analyzed. Such growth poses additional challenges and risks to individual privacy, security, and freedom of choice.

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<sup>52</sup> “Spies Infiltrate a Fantasy Realm of Online Games”, The New York Times, M. Mazzetti and J. Elliott (Dec. 9, 2013) available at <http://www.nytimes.com/2013/12/10/world/spies-drag-net-reaches-a-playing-field-of-elves-and-trolls.html> (last accessed Sep. 14, 2016)

<sup>53</sup> *Id.*

<sup>54</sup> “Buying You: The Government’s Use of Fourth-Parties to Launder Data about ‘The People’” Columbia Business Law Review, Vol. 2009, No. 3, p. 950, J. Simmons (Sep. 19, 2009).

<sup>55</sup> See “Face-ID Tools Pose New Risk”, Wall St Journal, J. Angwin, (Aug 1, 2011) available at <http://www.wsj.com/articles/SB10001424053111903341404576480371062384798>; See also <https://theundisciplined.com/2014/07/21/an-introduction-to-augmented-reality-and-the-law> (citing to “In the Face of Danger: Facial

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Recognition and the Limits of Privacy Law”, Harvard L Rev, Vol 120, 1870 (2007)).

<sup>56</sup> <https://theundisciplined.com/2014/07/21/an-introduction-to-augmented-reality-and-the-law/>

<sup>57</sup> *Id.*

# Augmented and virtual reality: distribution and licensing

## Introduction

There are two trends that are currently shaping the digital distribution landscape.

First, the trend towards an intuitive, immersive experience in digital engagement. Indeed, Mark Zuckerberg has said that the next major computing development that will facilitate this trend is augmented and virtual reality ("AR/VR").

*"One day, we believe this kind of immersive, augmented reality will become a part of daily life for billions of people,"* wrote Zuckerberg, when he announced the acquisition of Oculus in March 2014<sup>58</sup>. Facebook sees virtual and augmented reality as the next big computing platform, although that will depend on the hardware becoming truly mainstream and retailed at a reasonable price point.

Second, companies (and consumers) are able to regularly and easily access sophisticated tools to work, communicate, engage and transact on the internet. Previously, the primary function that people saw on a screen was text. Today, the primary way that people share and consume content is video. AR/VR is the next natural step in this progression. According to DigiCap<sup>59</sup>, it is the so-called 'fourth platform shift' (after PC, web and mobile).

The technology already exists in order to bring this content to the mass market. AR/VR is and will continue to be accessible using basic mobile phones (as is the case for many of the 100 million *Pokémon Go* users).

However, in order to achieve the lofty projections being bandied around in the digital industry, it is crucial for content owners, hardware manufacturers and content platforms to properly understand the rights in this space.

## How big is the market?

Whereas VR places users inside self-contained, virtual worlds, AR is perhaps more suited to everyday commercial use, as it retains the real world as its base. Indeed, a 2015 report by DigiCap forecasts that AR

global revenue will reach \$120 billion by 2020, with VR achieving \$30 billion<sup>60</sup>.

The benefits of AR are already being exploited in the world of e-commerce. For example, as far back as 2014, IKEA launched an app that allowed potential buyers to place different three dimensional models of furniture in their homes, in order to picture how the piece might fit in before committing to the purchase. Similar concepts can be used for many other day-to-day purchases, including clothing, cosmetics and accessories.

The proliferation of AR (also embodied by *Pokémon Go*) gives the impression that its easier implementation (which is not always dependent on a unique device such as the Oculus Rift) makes it a more attractive option to distributors and marketing teams. However, the pace at which VR devices are being manufactured demonstrates that, provided business models can be developed to monetise a self-contained virtual world, VR also affords a compelling marketing tool and revenue generator. If the industry is going to achieve the scale being predicted, adequate rights protection, properly modelled economic arrangements and cogent technology and security standards will play a key part in scale.

## Legal considerations

Both licensors and licensees of this new technology must think carefully about any agreement that they enter into in order to ensure that they: (a) protect existing rights; and (b) appropriately allocate future rights in any new creations.

Enterprises that engage with AR and VR providers/platforms will need to carefully negotiate the ownership rights of any future, valuable intellectual property that may be created through the use of a third party AR/VR provider. Such additional IP might include copyright in software, secret know-how and inventions which qualify for patent protection.

Whilst there is no doubt that VR and AR will continue to enhance enterprise and commerce in the coming years, companies on both sides of any contract for the use of these services must: (a) stipulate contractual confidentiality obligations and reserve title in pre-existing IP; (b) define ownership in the new IP; (c) engage in adequate due diligence in order to avoid

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<sup>58</sup> Mark Zuckerberg, (25 March 2014), *Facebook*, status update, available via: <http://bit.ly/2cJr2Ka>.

<sup>59</sup> DIGI-CAPITAL (April 2015), *Augmented/Virtual Reality Report*, available via: <http://bit.ly/2cYeiks>.

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<sup>60</sup> DIGI-CAPITAL (April 2015), *Augmented/Virtual Reality Report*, available via: <http://bit.ly/2cYeiks>.

infringement of third party rights; and (d) consider future exploitation rights, exclusivity and territorial scope.

## Issues to consider

### 1. Business Models

Take the concept of a scene in a virtual reality movie set in a bar, with a band playing upstairs. In a traditional movie, the main character may walk straight upstairs and listen to the band for ten seconds of the scene. The filmmaker must therefore gain clearance for both the composition and the master recording of the track. The price of this will, among other things, be dependent on the length of time the music can be heard and the significance of its contribution to the overall work.

In the context of a VR or AR movie, the individual viewer may control the scene and may, (a) walk upstairs and listen to the band for five minutes; or (b) sit downstairs in the bar and never hear a single note. Do the licences need to be broad enough to cover the maximum scope of each viewer's experience? This is likely to result in licensors demanding more money upfront.

Is there a solution? Licensors may be able to negotiate a lower price based on test-audience averages, but may face push back from rights holders. Undoubtedly, this envisaged issue will be overcome, but it is illustrative of the unique and novel dilemmas that this technology brings.

It is also worth noting that VR and AR technology has the potential to increase reach for brands, which will exploit the technology to achieve better levels of consumer engagement. There is a sizeable amount of brand revenue available and stakeholders need to determine business models which properly apportion revenue based on the contributions of each party.

### 2. Rights Grant

It may be the case that existing distribution contracts do not contemplate AR/VR distribution. Often, a licensor will have dialled back the standard rights grant for usage in "any media now known or hereafter invented". If this is the case, content licensees who wish to exploit licensed content via AR or VR will need to check the hygiene of their existing distribution contracts to determine whether amendments are necessary. Similarly, licensors will want to determine whether they have inadvertently granted wider rights, in which case they may well lose out on a potentially lucrative new revenue stream.

### 3. Device/Platform Limitations

Licensors and licensees need to consider the scope of the rights grant in respect of the devices and platforms on which the content is available. With few players in the device market, it is currently easy for licensors to define a closed list of devices on which content may be

made available. However, licensees will be conscious that the technology is dynamic. They might, for example, want to ensure they have the right to distribute AR/VR content on "internet connected devices" or "mobile devices". Rights holders need to think carefully about the scope of the device limitation in order to maximise potential revenues.

Generic sample definitions might read as follows:

**"Augmented Reality"** means the integration of digital information with the user's environment to enable a [live] direct or indirect view of a physical, real-world environment whose elements are augmented (or supplemented) by computer-generated sensory input such as sound, video, graphics or GPS data.

**"Virtual Reality"** means technology which aims to render a computer-generated artificial environment for immersive experience via the computer-generated simulation of a three-dimensional images or environments that can be interacted with in a seemingly real or physical way by a person using special electronic equipment, [including, but not limited to, a helmet with a screen inside or gloves fitted with sensors].

With regard to platforms, YouTube, Facebook and Twitter already support more basic 360-degree experiences. Snapchat has become a market leader in this area through its use of AR 'Lenses', which allows users to superimpose marks and images (including brand images) onto their faces. It is only a matter of time before these platforms become fully compatible with more sophisticated AR/VR content, opening the virtual world to a mainstream audience. Licensors need to give thought as to the extent to which rights grants should be platform-agnostic, or whether they should seek to tie a particular piece of content to a particular platform. For instance, where AR/VR content is designed to be used in a specific "virtual world" the rights grant will often be limited to the specific platform. The *Pokémon GO* terms of use, for example, grant users a licence to use text, software, scripts, graphics, photos, sounds, music, videos, audiovisual combinations, interactive features, works of authorship of any kind...that are posted, generated or otherwise made available through [the *Pokémon GO* app, websites or video game services].<sup>61</sup>

## Final thoughts

Though fully implemented and ubiquitous AR and VR may still be some years away, it is important that all stakeholders protect, secure and procure the necessary rights now so that they are able to take full

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<sup>61</sup> Niantic Inc. (2016), *Pokémon GO Terms of Use*, available at: <http://bit.ly/29vniGC>.

advantage and maximise scale opportunities when the technology truly reaches the mass market.

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# Personal injury and product liability in an age of virtual and augmented reality

## Introduction

Video games have come a long way in the virtual/augmented reality space since Nintendo introduced the world to its “Virtual Boy” console in 1995.<sup>62</sup> While the blood-red pixels of that ill-fated system failed to usher in a new age in three-dimensional gaming,<sup>63</sup> video game enthusiasts the world over have long dreamed of the day when gaming at home or on the go would move beyond the flat planes of a screen and into the real world. Nintendo’s 2006 release of the Wii helped usher in motion control,<sup>64</sup> but the visual action was still contained by the four corners of a television screen. Now, with the ongoing success of *Pokémon Go*<sup>65</sup> and the rise of the Oculus Rift and Sony PlayStation Virtual Reality (“PSVR”) systems<sup>66</sup> (not to mention the numerous other systems developed or in development by Samsung, HTC, and others), it seems as though augmented and virtual reality has finally arrived to the gaming masses, thereby bringing our virtual and real worlds together.

This marriage between optically-enhanced graphics and physical action will certainly lead to new experiences, but not all of them will be positive, as AR/VR gaming will likely lead to cases involving injury to people and property. However, while this technology may be new, it is important to note that gaming already has a history with personal injury and product liability claims. As such, while the introduction of AR/VR technology may produce new legal challenges in these areas, the past may provide a glimpse of what can be expected in the future such that gaming companies can plan ahead for legal challenges to come.<sup>67</sup>

## “Seeing” injuries: epileptic seizures and video games

The first reaction many people have when playing AR/VR games is the visual experience of “seeing” the game in real life. For some, this experience can transition from breath taking to stomach-churning in the blink of an eye: it is not uncommon for gamers to experience bouts of nausea while using a virtual reality headset,<sup>68</sup> so much so that “virtual reality sickness” has its own growing Wikipedia page.<sup>69</sup>

While this rise of “cybersickness” might be new, detrimental reactions to the visuals displayed by video games are certainly not. In particular, epileptic seizures have been a long-standing problem some gamers have experienced, with product liability and personal injury lawsuits brought against video game manufacturers for allegedly defective game design and defective warnings going back to the early 1990s.<sup>70</sup> While video games do not actually cause epilepsy, the flashing lights and patterns present in some games can trigger seizures in individuals with light-sensitive forms of this condition, and so video game companies like Nintendo and Sega have been warning customers of these risks since 1991.<sup>71</sup>

AR/VR gaming companies should expect that their introduction of light patterns in a three-dimensional

<sup>62</sup> See Mark Langshaw. [Virtual Boy Retrospective: Nintendo's Disastrous Foray Into VR](#). Published April 5, 2014. Available at <http://www.digitalspy.com/gaming/retro-corner/feature/a562419/virtual-boy-retrospective-nintendos-disastrous-foray-into-vr/>; Benji Edward. [Unraveling the Enigma of Nintendo's Virtual Boy, 20 Years Later](#). Published August 21, 2015. Available at <https://www.fastcompany.com/3050016/unraveling-the-enigma-of-nintendos-virtual-boy-20-years-later>.

<sup>63</sup> *Id.*

<sup>64</sup> Marshall Brain. [How the Wii Works](#). Published September 5, 2007. Available at <http://electronics.howstuffworks.com/wii.htm>.

<sup>65</sup> Christopher P. Willis. [Pokémonics: The Secret Success of Pokémon Go](#). Published July 28, 2016. Available at <http://www.newsweek.com/pokenomics-explaining-success-pokemon-go-phenomenon-financial-nintendo-484951>.

<sup>66</sup> Brendan Hesse. [Oculus Rift vs. PlayStation VR Spec Comparison](#). Published January 6, 2016. Available at <http://www.digitaltrends.com/computing/oculus-rift-vs-playstation-vr/>

<sup>67</sup> It goes without saying that, in planning for legal challenges, AR/VR game companies should review their general liability insurance policies to make certain that personal injury and product liability claims are covered. Many general liability policies provide coverage for such claims, but the scope of that coverage may depend on riders and other endorsements.

<sup>68</sup> Scott Stein. [The dangers of virtual reality](#). Published March 29, 2016. Available at <http://www.cnet.com/news/the-dangers-of-virtual-reality/>; Jack Nicas and Deepa Seetharaman. [What Does Virtual Reality Do to Your Body and Mind?](#), *The Wall Street Journal*, Jan. 3, 2016. Available at <http://www.wsj.com/articles/what-does-virtual-reality-do-to-your-body-and-mind-1451858778>.

<sup>69</sup> See “Virtual reality sickness,” [https://en.wikipedia.org/wiki/Virtual\\_reality\\_sickness](https://en.wikipedia.org/wiki/Virtual_reality_sickness)

<sup>70</sup> See, e.g., Chris Marvin. [Nintendo's “Seizure Problem”](#) 2002 UCLA J.L. & Tech. Notes 13; Associated Press. [Jury doesn't buy epileptic lawsuit against Nintendo](#). *The Prescott Courier*, September 19, 1993, at 7A. Available at <https://news.google.com/newspapers?id=NB00AAAAIBAJ&sjid=oH0DAAAIBAJ&pg=5220%2C2044209>; Russ Corey. [Man files lawsuit claiming video-induced seizure](#). Unknown newspaper, Alabama. 1994, at 1A. Available at <https://videogameseizuresdocs.files.wordpress.com/2012/03/alabama-lawsuit.jpg>; *Roccaforte v. Nintendo of America, Inc.*, 802 So. 2d 764 (La. App. 5th Cir. 2001) (vacating lower court decision in favor of Nintendo in case involving seizures triggered by the Super Nintendo game “Mega Man X” and remanding for new trial in light of sanctionable discovery conduct by Nintendo); *Eric Martin v. Nintendo of America, Inc.*, Case No. 6:01-CV-00246, Doc. No. 394 (W.D. La. Dec. 10, 2004) (Plaintiffs sued Nintendo under 15 U.S.C. §§ 2063, 2064, and 2074, alleging negligence and product liability due to epileptic seizures allegedly caused while playing Nintendo video games; case dismissed for want of private right of action under federal statutes)

<sup>71</sup> Ronald Sullivan. [Some Seizures Tied to Flashing Lights](#). *The New York Times*, January 12, 1994. Available at <http://www.nytimes.com/1994/01/12/us/some-seizures-tied-to-flashing-lights.html>.

virtual space will trigger similar reactions in some gamers. While the epilepsy lawsuits brought against traditional video game manufacturers have typically been dismissed or settled out of court,<sup>72</sup> AR/VR companies should certainly confer with legal counsel to ensure that their design processes and printed materials are focused on both minimizing and warning of the risks associated with seizures. For example, Nintendo products regularly display a “health and safety” notice upon starting up that directs players to read the information booklets accompanying games and devices before playing, which in turn contain detailed warnings regarding seizures, eyestrain, and motion sickness, among other injuries.<sup>73</sup> AR/VR companies should adopt similar warnings, including information on how to detect seizure symptoms and suggestions on how to reduce the likelihood of a seizure occurring.<sup>74</sup>

### Motion control and physical injuries

While the visual sensory experience of AR/VR technology is certainly impressive, the experience of physically manipulating a digital world with one’s own body is arguably the most impressive aspect of this revolutionary technology. Nintendo’s Wii provided a glimpse of what motion-based controls could inspire by introducing a controller that utilized gyroscopic technology and a sensor connected to a television to “read” the movements of the controller, thereby providing players with the experience of using their own physical movement to swing a tennis racket, shoot a gun or tap a drum with a drumstick.<sup>75</sup> Other peripherals released using this same technology (most notably the Wii Fit balance board<sup>76</sup>) expanded the immersive qualities of this technology by allowing the user to utilize his or her entire body to simulate movement on screen.

Of course, it did not take long for injuries and lawsuits to follow. Litigants alleged that faulty designs and poor warnings led to Wii remotes being tossed through television screens,<sup>77</sup> and numerous injuries ranging from forehead lacerations to torn ligaments were recorded.<sup>78</sup>

AR/VR technology will accelerate the user’s ability to physically integrate into a game’s environment, but if the Wii’s history is any indication, injuries to persons and property will inevitably follow. For example, the use of virtual reality headsets and other peripherals requiring physical movement to control a character in a full three-dimensional space require several feet of space to operate as recommended by manufacturers,<sup>79</sup> and the assorted cords and cables that attach to the virtual reality headsets (which, in turn, block the user’s vision from seeing the real world environment around him or her) present tripping hazards and the possibility for very expensive technology to suffer from very expensive accidents.<sup>80</sup> Meanwhile, as discussed in detail below, augmented reality games like *Pokémon Go* introduce gaming mechanics that can distract players long enough for them to end up in physically dangerous situations.

These risks are arguably inherent in the technology as it exists at this time, but manufacturers will still have to be sure that their warnings, user guides, terms of service and advertisements make clear to the public that these risks exist. Once again, Nintendo’s early experience with the Wii provides a good working template for the kinds of warnings AR/VR companies would be wise to incorporate with their product: in addition to warnings regarding repetitive motion injuries, Nintendo provides detailed information, with explanatory drawings, on how to properly secure the console’s remote control to limit injury to people and property and how much physical space one should have to safely play.<sup>81</sup> Adopting the same kind of on-screen warning directing players to read the information provided by the manufacturer as Nintendo does is another proactive step AR/VR game companies can take to ensure that consumers have all the safety information they need to safely experience AR/VR gaming.

### Copycat violence: video games and violence

Violence in the media is certainly nothing new, but the interactivity of video games has long instigated debate about whether violence in video games causes people to act out in aggressive, violent ways.<sup>82</sup> This debate’s

<sup>72</sup> *Id.*

<sup>73</sup> See <http://www.nintendo.com/consumer/manuals/healthsafety.jsp>, which provides the warning guides for every Nintendo console in English, French, and Spanish. Downloadable PDF copies of the manuals are also available at <http://www.nintendo.com/consumer/manuals/index.jsp>

<sup>74</sup> *Id.*

<sup>75</sup> See footnote iii, above.

<sup>76</sup> See

<http://www.nintendo.com/games/detail/hoiNtus4vIcPtP8LQPyud4Kky393oep>

<sup>77</sup> Samuel Howard. [Nintendo Sends Wii Safety Strap Case Packing](#). Law360.com. Published September 24, 2010. Available at <http://www.law360.com/articles/196315/nintendo-sends-wii-safety-strap-case-packing>

<sup>78</sup> Thomas Fysh and JF Thompson. [A Wii Problem](#). *Journal of the Royal Society of Medicine* 102.12 (2009): 502. Available at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2789028/>

<sup>79</sup> For example, Sony states that PlayStation Virtual Reality requires sixty square feet of space, while other units recommend at least six feet of wingspan even for games that can be played sitting down. See, e.g., Brian Crecente. [PlayStation VR requires about 60-square feet of space to use and other new details](#). July 29, 2016. Available at <http://www.polygon.com/2016/7/29/12321092/playstation-vr-space-requirement>; Brock Wilbur. [How much room will VR take up in your home?](#) May 11, 2016. Available at <https://www.inverse.com/article/15486-how-much-room-will-vr-take-up-in-your-house>

<sup>80</sup> *Id.*

<sup>81</sup> See <http://www.nintendo.com/consumer/wiisafety.jsp>; Downloadable PDF copies of the Wii manuals are also available at <http://www.nintendo.com/consumer/manuals/wii.jsp>

<sup>82</sup> Michael Casey. [Do violent video games lead to criminal behavior?](#) CBS News, August 17, 2015. Available at <http://www.cbsnews.com/news/do-violent-video-games-lead-to-criminal-behavior/>; John Bingham. [Study](#)

inconclusive nature has not stopped the filing of lawsuits based on negligence and product liability, wherein plaintiffs allege that a game's content inspired a player to commit real life acts of criminal violence.

Video game manufacturers have had success in challenging the viability of these claims. For example, negligence claims have been dismissed on the grounds that plaintiffs cannot establish (a) the game company's legal duty to third-party victims, and/or (b) that the violence perpetrated was a reasonably foreseeable result of creating the video game, and/or (c) that the criminal acts of the perpetrator were not superseding causes of the plaintiffs' injuries.<sup>83</sup> Product liability claims have also been dismissed because the game's content is "intangible," and not a tangible product to which the legal doctrines of product liability have traditionally attached.<sup>84</sup>

This success, however, may not last forever. The immersive qualities of AR/VR technology are arguably beyond anything we have experienced before in other forms of media. Moreover, unlike television, movies, books and other forms of media, physical interaction with the game's content is a vital part of any AR/VR experience. As such, while courts have analogized a game's content to that of a book for purposes of rejecting the argument that a game manufacturer is responsible for violence purportedly inspired by a game,<sup>85</sup> this position will become harder to take when the player must physically act out the movements and motions necessary to complete a given action sequence in a game. Put another way, plaintiffs may argue that AR/VR games do not just "inspire" a person to commit violence – they actually "train" them to do so. Such an argument could open a new front in the ongoing debate regarding gaming's impact on violent behavior in the real world.

## Real dangers in augmented reality: Pokémon Go

*Pokémon Go* has no doubt inspired millions of users the world over to get off their couches and explore the augmented world around them, but the urge to catch 'em all has also had unintended consequences: people

have fallen off cliffs<sup>86</sup> and abandoned their children,<sup>87</sup> they have gotten into shootouts<sup>88</sup> and experienced traffic jams and accidents,<sup>89</sup> and some have even been killed by distracted drivers<sup>90</sup> in their pursuit of digital monsters.

Given the apparent dangers, it is not surprising that Niantic (developer of *Pokémon Go*) has included a prominent warning that appears when the game loads, telling players to "Remember to be alert at all times. Stay aware of your surroundings." In addition, Niantic employs a fairly robust Terms of Service that players must accept in order to play the game, which limits Niantic's liability for property damage, personal injury and death, among other areas.<sup>91</sup> How effective such a limitation of liability will prove to be in the face of aggressive lawsuits remains to be seen, though application developers the world over should expect developments in the legal liability surrounding *Pokémon Go* to act as the litmus test for similar augmented reality games going forward. For example, it will be very difficult for any augmented reality app developer to claim that it was "unforeseeable" that a user may act in a certain way given the sheer variety of ways *Pokémon Go* players have been able to injure themselves or trespass on property. Indeed, some have argued that VR devices and games may be sexually discriminatory because women are more likely than men to experience motion sickness during game play because women have lower centers of mass than do men. As the courts grapple with where liability for real-world injuries should lie, app developers must be sure to implement robust terms of use and keep up to date on developments in the law and, in particular, require a player's consent to those terms before allowing them to access the game.

Moreover, even if warnings are plain, clear and apparent, others may be harmed by a player's actions or failures to act. *Pokémon Go* includes a feature that discourages players from driving too fast in the quest

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[finds no evidence violent video games make children aggressive](http://www.telegraph.co.uk/science/2016/03/12/study-finds-no-evidence-violent-video-games-make-children-aggressive/). The Telegraph, April 1, 2015. Available at <http://www.telegraph.co.uk/science/2016/03/12/study-finds-no-evidence-violent-video-games-make-children-aggressive/>; Rob Crossley, [Mortal Combat: Violent game that changed video games industry](http://www.bbc.com/news/technology-27620071). BBC News, June 2, 2014. Available at <http://www.bbc.com/news/technology-27620071>

<sup>83</sup> See, e.g., *James v. Meow Media, Inc., et al.*, 300 F. 3d 683 (6th Cir. 2002); *Sanders v. Acclaim Entertainment, Inc.*, 188 F. Supp. 2d 1264 (D. Colo. 2002); *Wilson v. Midway Games, Inc.*, 198 F. Supp. 167 (D. Conn. 2002)

<sup>84</sup> See *Sanders*, 188 F. Supp. 2d at 1278, citing *Winter v. G.P. Putnam and Sons*, 938 F. 2d 1033, 1034 (9th Cir. 1991); see also *Wilson*, 198 F. Supp. at 173.

<sup>85</sup> See *Sanders*, 188 F. Supp. 2d at 1278.

<sup>86</sup> Janissa Delzo. [Men fall from cliff Playing Pokémon Go](http://www.cnn.com/2016/07/15/health/pokemon-go-players-fall-down-cliff/). July 16, 2016. Available at <http://www.cnn.com/2016/07/15/health/pokemon-go-players-fall-down-cliff/>

<sup>87</sup> Steven Hoffer. [Parents Abandoned 2-Year-Old Son To Play "Pokémon Go," Police Say](http://www.huffingtonpost.com/entry/pokemon-go-child-abandoned_us_579f5976e4b08a8e8b5e8ff9). August 1, 2016. Available at [http://www.huffingtonpost.com/entry/pokemon-go-child-abandoned\\_us\\_579f5976e4b08a8e8b5e8ff9](http://www.huffingtonpost.com/entry/pokemon-go-child-abandoned_us_579f5976e4b08a8e8b5e8ff9).

<sup>88</sup> Nina Golgowski. [Gunman's Attempt To Rob Pokémon Go Players End In A Shootout](http://www.huffingtonpost.com/entry/2-shot-during-pokemon-go-attack_us_579776a6e4b0d3568f848705). July 26, 2016. Available at [http://www.huffingtonpost.com/entry/2-shot-during-pokemon-go-attack\\_us\\_579776a6e4b0d3568f848705](http://www.huffingtonpost.com/entry/2-shot-during-pokemon-go-attack_us_579776a6e4b0d3568f848705).

<sup>89</sup> James Rogers. [Death by Pokémon? Public safety fears mount as "Pokémon GO" craze continues](http://www.foxnews.com/tech/2016/07/14/death-by-pokemon-public-safety-fears-mount-as-pokemon-go-craze-continues.html). July 14, 2015. Available at <http://www.foxnews.com/tech/2016/07/14/death-by-pokemon-public-safety-fears-mount-as-pokemon-go-craze-continues.html>.

<sup>90</sup> Brian Ashcraft. [Woman Killed By Pokémon Go Driver](http://kotaku.com/woman-killed-by-pokemon-killed-by-pokemon-go-driver-1785683589). August 24, 2016. Available at <http://kotaku.com/woman-killed-by-pokemon-killed-by-pokemon-go-driver-1785683589>; see also Brian Ashcraft, [Another Pokémon Go Death Reported In Japan](http://kotaku.com/another-pokemon-go-death-reported-in-japan-1785783921). August 26, 2016. Available at <http://kotaku.com/another-pokemon-go-death-reported-in-japan-1785783921>.

<sup>91</sup> Niantic, Inc. *Pokémon Go* Terms of Service, last updated July 1, 2016. Available at <https://www.nianticlabs.com/terms/pokemongo/en>

to accrue credits under some circumstances, there is not a similar feature to inhibit too-fast driving when a player is catching *Pokémon* or hitting *Poké Stops* while driving. Claims by third parties who are inadvertently injured as a result of a player's negligent or reckless failure to pay attention to speed are inevitable.

### **Insurance coverage may (or may not) be available**

Given the above, AR/VR game companies should review their commercial general liability insurance policies to make certain that potential product liability claims are covered. While many general liability policies provide coverage for personal injury and product liability claims, the scope of that coverage can vary widely, and the laws applying coverage will likely vary from state to state. For example, a policy may not cover injuries caused by "intentional acts," and the line between "accident" and "intent" can be difficult to ascertain in a gaming world where physical movement has supplanted simply pressing the "A" button on a controller. As such, AR/VR companies should review their policies with their brokers and insurance counsel to determine if there are any gaps in coverage.

### **Conclusion: the future of AR/VR beyond gaming**

Finally, while discussions in the media surrounding AR/VR technology are largely focused on the entertainment sphere, the application of AR/VR technology to other industries should not be overlooked. Virtual reality in surgery has been in place for over a decade. The advancements in technology allow doctors and specialized surgeons not only to better train the next generation of medical providers in the skills needed to perform medical procedures, they are also being employed in the performance of the procedures themselves.<sup>92</sup> Similarly, architects and others in the construction industry<sup>93</sup> are utilizing this technology to expand their abilities to accurately detail design and construction elements throughout the building process. As this technology integrates into other fields, the exposure to liability may grow. As such, any stakeholder in an industry that is exploring the integration of AR/VR technology in that industry should keep a careful eye on the development and expansion of AR/VR technology in the gaming world and the ensuing developing legal issues.

*This Article was prepared by Nabil A. Bisharat, an associate in the Life Sciences & Health Industry practice group of Reed Smith LLP resident in the Los Angeles office of the firm. Mr. Bisharat represents clients in product liability and civil litigation matters.*

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<sup>92</sup> See Roy McCloy and Robert Stone. [Virtual reality in surgery](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1121442/). BMJ: British Medical Journal. Oct. 20, 2001; 323 (7318): 912-915. Available at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1121442/>.

<sup>93</sup> Asad Syrkett, [Could Virtual Reality Change the Way Architects Design?](http://www.curbed.com/2016/5/25/11773160/virtual-reality-architecture-design-vrtisan) May 25, 2016. Available at <http://www.curbed.com/2016/5/25/11773160/virtual-reality-architecture-design-vrtisan>; see also Fortune. [How this 150-year-old company uses virtual reality](http://fortune.com/2015/08/25/mccarthy-construction-vr/). Available at <http://fortune.com/2015/08/25/mccarthy-construction-vr/>

# Hard (patent) intellectual property issues

## Introduction

Augmented Reality and Virtual Reality technologies are rapidly developing and their applications are expected to be wide reaching in the near future. Last year Pokémon Go, an AR game for smartphones, set a new record with the most Apple App Store downloads in its first week.<sup>94</sup> Several revolutionary AR/VR delivery platforms were introduced as companies compete for the emerging market. For example, Microsoft's HoloLens AR headset allows developers to build holographic apps for the Windows platform.<sup>95</sup> Facebook's Oculus Rift VR headset was released with "touch" hand controllers that allow users to interact with natural gestures.<sup>96</sup> Sony's PlayStation VR headset immerses gamers in virtual worlds.<sup>97</sup>

Going beyond dedicated delivery platforms, Google Cardboard aims to bring the masses into the AR/VR fold by providing an assemble-it-yourself viewer that transforms a smartphone into a AR/VR device.<sup>98</sup> The affordable VR/AR experience reached a broad base, with more than 10 million Cardboard viewers shipped worldwide and 160 million downloads of Cardboard apps on Google Play.<sup>99</sup> Google Tango uses computer vision and sensors for 3D mapping of space and objects and motion tracking and provides developers with a platform to build AR/VR apps that understand space and motion.<sup>100</sup> These cutting-edge devices and platforms may provide only a glimpse of things to come. For example, the secretive start-up Magic Leap has received well over a billion dollars in funding from the likes of Alibaba, Google, and Qualcomm Ventures and promises to push AR to new heights.<sup>101</sup>

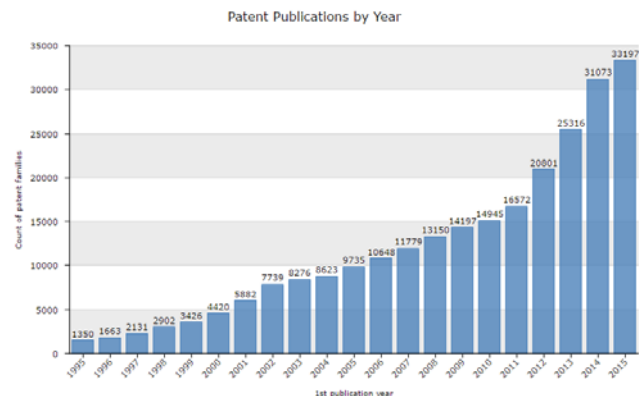
AR/VR technologies are rapidly developing. As with many blossoming technologies, the Intellectual Property (IP) rights surrounding AR/VR technologies are quickly evolving and maturing. Patents provide the owner with a right to exclude others from making, using, selling and importing protected machines and methods.

What does that mean for companies involved with or entering the AR/VR space? What IP rights come into play for companies developing AR/VR systems? And what IP rights does a developer or user of AR/VR

software need to be concerned about? If a developer creates solutions based on AR/VR platforms, can it protect its inventions? This chapter examines these questions and identifies emerging trends in AR/VR patents. The IP landscape developing around AR/VR technologies can be a minefield. Stakeholders and market entrants need to know how to navigate the risks and protect their contributions.

## Core AR/VR patents

Core technologies are being developed to enable and improve AR/VR systems. More innovation is expected as new AR/VR platforms are introduced and new applications of those platforms are explored. A sharp increase in patent applications in recent years evidences both the rate at which the technology is developing and the desire of stakeholders to maintain their competitive advantage by protecting their inventions.



The above chart shows that the number of new patent applications directed specifically to AR and VR technologies filed per year from 1995 through 2015.<sup>102</sup> As shown, new patent filings more than doubled from 2010 through 2015. With the implementation of the America Invents Act in 2013, the United States joined the rest of the world by implementing a first-inventor-to-file system. In the crowded field of AR/VR development, inventors should not hesitate in pursuing protection for their inventions because others developing similar technologies are likely close on their tail.

Patent application filings provide an indication of anticipated markets for developing technology. Filing trends suggest that companies recognize the worldwide promise of emerging AR/VR technologies. The map below shows AR/VR related patent filings by country, with darker blue indicating a greater number

<sup>94</sup><http://money.cnn.com/2016/07/22/technology/pokemon-go-apple-download-records/>

<sup>95</sup> <https://www.microsoft.com/microsoft-hololens/en-us>

<sup>96</sup> <https://www3.oculus.com/en-us/rift/>

<sup>97</sup> <https://www.playstation.com/en-us/explore/playstation-vr/>

<sup>98</sup> <https://vr.google.com/cardboard/>

<sup>99</sup> <https://blog.google/products/google-vr/more-ways-watch-and-play-ar-and-vr/>

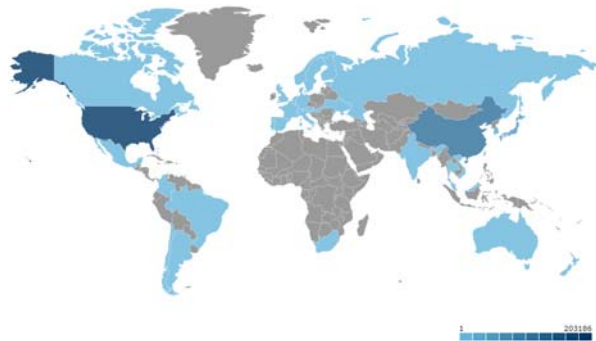
<sup>100</sup> <https://get.google.com/tango/>

<https://developers.google.com/tango/developer-overview>

<sup>101</sup> <https://www.magicleap.com/#/press>

<sup>102</sup> ©Questel 2017.

of filings.<sup>103</sup> While the greatest density of patent filings has been in North America and China, applications are being filed across Europe, Asia, South America and Australia. An international patent minefield is developing and market participants with an international reach need to know their international exposure. Further, with the international promise of AR/VR technologies, innovators should consider international protection for their inventions. As the use of AR/VR technologies continues to expand, it will be imperative for stakeholders and market entrants to be aware of the patent landscape, and for companies operating in this space to protect their valuable IP.



The core AR/VR technologies being developed include both hardware and software. The below image from U.S. Published Application No. 2015/0302665, assigned to Magic Leap, shows an exemplary device for AR/VR delivery in which image projectors render content to the left and right eyes of a user.

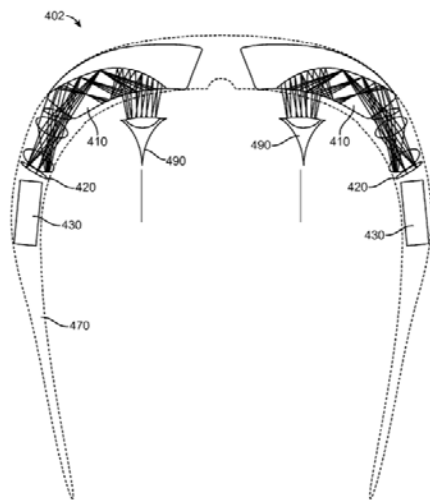


FIG. 5

Additionally, to allow users to interact with AR/VR platforms in new ways, novel software solutions for interacting with platforms are likewise being developed. For example, figure 28 from the same patent application, shown below, illustrates a number of hand

gestures that may be implemented to interact with the platform.

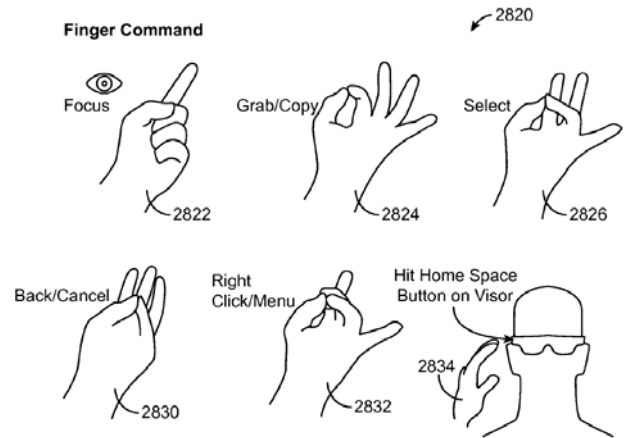


FIG. 28

This is just one example of a patent application disclosing hardware and software for AR/VR. With over 30,000 new patent applications published in this space in 2015, stakeholders will need to carefully navigate the patent landscape.

### New applications of AR/VR technology

While Pokémon Go exemplified the popularity of AR in the gaming industry, AR/VR platforms promise to revolutionize many industries. Again, patent applications provide a window into some applications of the technology. U.S. Published Application No. 2014/0184643, assigned to Caterpillar, a manufacturer of construction and mining equipment, discloses systems for providing a worksite operator with an augmented view of a worksite. As shown below, the augmented view can provide important safety information or show where excavation is to take place.

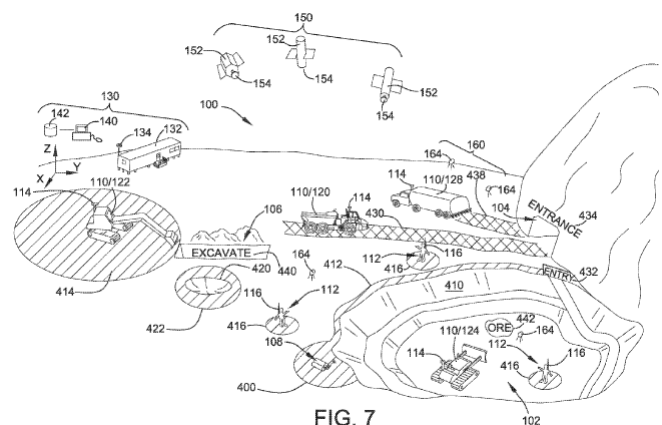


FIG. 7

Published Application No. 2016/0140868, assigned to NetApp, a storage and data management company, exemplifies AR's promise to maintenance industries. For example, figure 6 below illustrates an embodiment of the invention that displays a work order, directions and an augmented view of a data center.

<sup>103</sup> ©Questel 2017.

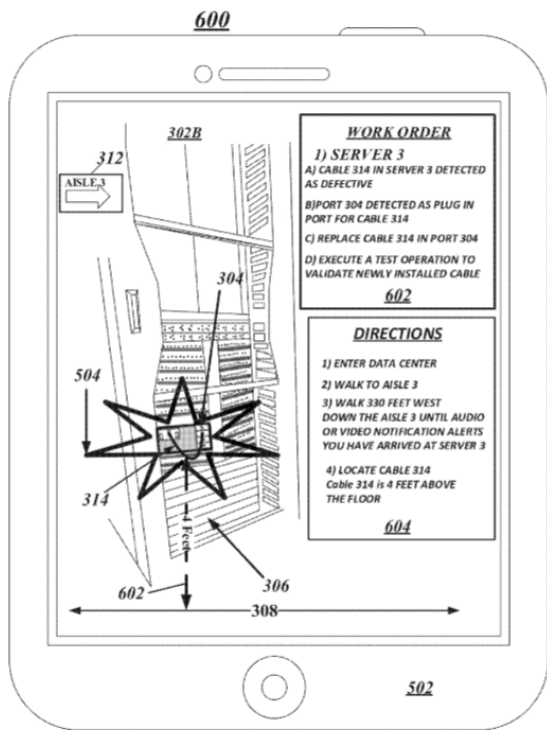


FIG. 6

*This Article was prepared by Gerard M. Donovan, Counsel in the IP, Tech and Data Practice Group of Reed Smith LLP resident in the Washington, D.C. office of the firm. Mr. Donovan represents clients in patent litigation and prosecution matters and counsels clients on their intellectual property strategies.*

Companies recognizing the promise of AR/VR developments across industries are quickly developing new applications of the technology and protecting their IP. As with many technologies, the IP rights surrounding AR/VR technologies are quickly evolving and maturing—and becoming less open.

### Enablers of AR/VR technology

While many new technology platforms are being developed for AR/VR, these new technologies are driven by the contributions of companies across technology sectors. Many AR/VR solutions are delivered through smartphones and new platforms are expected to work in conjunction with smartphones. Additionally, new platforms utilize a myriad of sensors, controllers, memory, data processing semiconductors, display and optics technologies and connectivity semiconductors (Wi-Fi, GPS, NFC, etc.). The many enabling technologies utilized in AR/VR platforms will create a thicket of patents and technology licenses relating to each platform. The smartphone wars raged from 2009-2015. With the promise of AR/VR technology, it may be the next patent battleground.

It is imperative that all players in the AR/VR space be aware of the patent landscape and take actions to protect their own innovation. While patent risk cannot be avoided entirely, a strategic program for avoiding the patents of others and obtaining defensive protection of new innovation minimizes risk.

# Advertising on, in or in conjunction with augmented and virtual realities

## Introduction

Marketers have always found creative ways for advertising to reach consumers, no matter the medium. As augmented and virtual reality technologies emerge, advertisers and their agencies will quickly evolve their ads to meet the demands and specifications of the new technological landscape. The law, as it does with most technology however, moves much slower.

Augmented and virtual realities represent a pathway for marketers to access potential consumers in ways not yet developed. And the advertising industry, no doubt, will harness its creativity to produce augmented and virtual reality-based advertising that will likely fall outside the bounds of the types of marketing practices current laws and regulations were originally designed to regulate.

But that does not mean those laws and regulations will not be applied in this context. Rather, until augmented and virtual reality-specific laws, regulations or guidance are developed, advertisers and their agencies will be left to assess whether their AR/VR marketing practices remain compliant under current legal regimes.

This section therefore aims to shed light on how current advertising laws may be applied in the augmented and virtual reality contexts.

## The Federal Trade Commission Act and the Federal Trade Commission

The Federal Trade Commission Act (the “FTC Act”) is one of the major federal laws governing advertising and marketing in the United States.<sup>104</sup> Section 5 of the FTC Act prohibits unfair or deceptive business acts or practices and charges the Federal Trade Commission (the “FTC”) with enforcement.<sup>105</sup>

The FTC’s enforcement mandate provides the agency with the authority to interpret the FTC Act and to promulgate regulations, policy statements, and guidelines to instruct various industries on how the FTC Act may apply to certain business practices and advertising messages. FTC regulations and guidance address a wide array of advertising messages, such as guidance on a product’s biodegradability or the appropriateness of labeling clothing as “MADE IN THE USA.” Our focus here is on the FTC’s disclosure-based

guidance and its applicability to augmented and virtual reality marketing practices.

## Native advertising

In December, 2015, the FTC published its *Enforcement Policy Statement on Deceptively Formatted Advertisements* (the “Policy Statement”) and, along with it, the example-based *Native Advertising: A Guide for Businesses* (the “Business Guide”).<sup>106</sup> These documents represent the FTC’s view on the lawfulness of marketers’ “native advertising” practices.

Native advertising—ads designed to look and feel similar to their surrounding editorial content—is an effective marketing strategy that has, as the Policy Statement recounts, been used in a variety of contexts for many years. More recently, however, native advertising has dramatically modernized and proliferated in use, especially in digital media.

Native advertising that is not identifiable as advertising by consumers can be deceptive if the ad misleads consumers in a material way about its commercial nature.<sup>107</sup> That is, if an advertisement is formatted in a manner where consumers cannot draw a distinction between the ad and the surrounding non-commercial content (and that materially impacts the consumers’ decision-making regarding that content), that advertising practice may run afoul of the FTC Act. To avoid conflict with the Policy Statement and Business Guide, marketers are responsible for properly disclosing the commercial nature of advertising to consumers in an understandable and prominent manner.

Although the FTC’s enforcement of the AR/VR space has been limited to date, we have some guidance from the FTC in its Policy Statement. In one example, the FTC described a video game virtual world where marketers’ products were advertised on a virtual billboard. Consumers, the FTC determined, would be able to recognize the virtual billboard as advertising and, thus, no disclosure was necessary to prevent deception.<sup>108</sup> In a different example, game characters

<sup>104</sup> It should be noted that for certain regulated industries, other laws govern advertising and marketing, including The Federal Food, Drug, and Cosmetic Act and rules enforced by the Department of Transportation.

<sup>105</sup> See 15 U.S.C. 45 (The Federal Trade Commission Act).

<sup>106</sup> The Federal Trade Commission, *Enforcement Policy Statement on Deceptively Formatted Advertisements* (2015), available at [https://www.ftc.gov/system/files/documents/public\\_statements/896923/151222deceptiveenforcement.pdf](https://www.ftc.gov/system/files/documents/public_statements/896923/151222deceptiveenforcement.pdf); see also The Federal Trade Commission, *Native Advertising: A Guide for Businesses* (2015), available at <https://www.ftc.gov/tips-advice/business-center/guidance/native-advertising-guide-businesses>.

<sup>107</sup> See FTC Enforcement Policy Statement, *supra* note iii.

<sup>108</sup> Though disclosure is unnecessary with regard to native advertising, the FTC noted that marketers would remain liable for any deceptive product claims on the virtual billboard. See Business Guides, Example 9.



were outfitted in branded clothing or interacted with branded products that were included in the virtual world because the respective marketers paid the publisher to do so. Here, the FTC believes that a disclosure as to the connection between the publisher and marketer is not necessary because that connection is not likely material to consumers.

In other contexts, however, the FTC has determined that marketers are responsible for disclosing the commercial nature of their native advertisements. Those same practices identified in the Business Guide will likely take similar form in augmented or virtual reality. Whether, for example, it is native advertisements appearing in an individual's social media stream or video content, marketers and their agencies should carefully review their advertising practices in the AR/VR context to ensure their advertisements are not deceptively formatted.

### Endorsements and testimonials in advertising

Similar issues regarding disclosure arise with respect to marketers' use of endorsements and testimonials in advertising. Though the practice remains the same, the manner in which disclosures are made in augmented and virtual reality contexts may need to differ so as to comply with the FTC's Guides Concerning the Use of Endorsements and Testimonials in Advertising (the "Endorsement Guide"). Indeed, the Endorsement Guide states that advertisers, agencies, and even their celebrity endorsers can violate the FTC Act "for false or unsubstantiated statements made through endorsements, or for failing to disclose material connections between themselves and their endorsers."<sup>109</sup>

The Endorsement Guide's inquiry thus turns on a three-part analysis: (a) was there an endorsement?; (b) if so, is there a material connection between the advertiser and the endorser?; and (c) if so, was that material connection properly disclosed to consumers?

Endorsements are any advertising message made by someone other than the advertiser (the "endorser") that consumers believe reflects that person's "opinions, beliefs, findings, or experiences" about or with the advertiser, its products or services. Endorsements, particularly in the social media age, come in all shapes and sizes: hashtags, emojis, selfies, you name it. Whether something is or is not an endorsement will depend on the context of the message being communicated.

A "material connection" exists when there is a "connection between the endorser and [advertiser] that might materially affect the weight or credibility of

the endorsement (*i.e.*, the connection is not reasonably expected by the audience)." Like endorsements, "material connections" between advertisers and endorsers come in a variety of forms, most commonly money or products. But relationships between endorsers and advertisers, like sweepstakes or contest entries, constitute material connections, too. If a material connection does exist, then a host of parties are responsible for ensuring that the connection is disclosed to consumers.

An adequate disclosure is one that appears contemporaneously and prominently in connection with an endorsement. Although the FTC has provided guidance as for what it believes are appropriate methods of disclosure, that guidance is neither exhaustive, nor applicable to all contexts and mediums. While one method of disclosure—say, "#ad" at the beginning of an Instagram caption—may sufficiently disclose the material connection between an advertiser and endorser on one platform, that same disclosure may fall short if it were used in another platform, for example at the beginning of a series of snaps (defined below) on Snapchat. Disclosing material connections is therefore a fluid, context-based analysis.

Perhaps most relevant here, an inability to disclose the material connection as a result of technological limitations does not excuse the advertiser from its obligations under the Endorsement Guides and federal law. In fact, just the opposite is the case: if the platform on or in which the endorsement is made does not offer a method by which adequate disclosures can be similarly made, then the endorsement on that platform should not occur.

With marketers increasingly relying on celebrities and social influencers to endorse their products and services—especially in digital media—the FTC has increased its enforcement efforts in this space.<sup>110</sup> Regardless of the endorsement's context—from a Twitter feed viewable through an augmented reality device to an influencer's testimonial about products available in virtual reality social networks—the FTC clearly intends to be vigilant in policing advertisers' disclosure practices to ensure they clearly and conspicuously disclose material connections.<sup>111</sup>

For example, Snapchat—the popular social media platform where users take photographs and record videos ("snaps") and share them with followers until they disappear from users' feeds—offers an augmented reality feature called "Lenses", which allows

<sup>109</sup> See 16 C.F.R. §255, The Federal Trade Commission, *Guides Concerning the Use of Endorsements and Testimonials in Advertising* (rev. 2013).

<sup>110</sup> See, e.g. In the Matter of Machinima, Inc., No. C-4569 (Mar. 16, 2016); see also In the Matter of Lord and Taylor LLC, No. C-4576 (May 20, 2016); see also In the Matter of Warner Bros. Home Entertainment, No. C-4595 (Nov. 17, 2016).

<sup>111</sup> See The Federal Trade Commission, *Com Disclosures: How to Make Effective Disclosures in Digital Advertising* (rev. 2009), available at <https://www.ftc.gov/tips-advice/business-center/guidance/com-disclosures-how-make-effective-disclosures-digital>.

users to alter their appearances with a variety of augmenting filters. Snapchat is already taking affirmative steps to address disclosure issues associated with its augmented reality technologies. Indeed, Snapchat specifically mandates that endorsers place a “clear and conspicuous disclaimer” to note that the endorser was compensated for using the lens or filter.<sup>112</sup> Additionally, Snapchat has made sure it retains the right to affirmatively place labels (such as “ADVERT” or “sponsored”) on snaps it believes are advertising, thereby taking a more active role in policing and ensuring appropriate disclosure practices.<sup>113</sup>

## The right of publicity

The right of publicity, generally speaking, empowers an individual with the ability to control how her likeness, image and persona are used commercially. This right extends beyond a person’s literal likeness and image, protecting a laundry-list of individually recognizable attributes or mannerisms, including voice, signature, indicia of identity, performance, biographical information and many others. For the purpose of this article, we will use the phrase “Publicity Rights” to capture all of the various attributes the right of publicity is designed to protect. Importantly, the right of publicity is not recognized by federal law. Instead, a patchwork of state laws, each with unique variations, currently sets forth what are understood to be Publicity Rights.

Advertisers pay substantial amounts of money to harness the Publicity Rights of the world’s most famous individuals in their marketing campaigns across a variety of media. But it is important to remember that this right is one that belongs to all individuals, which is why, for example, marketers must obtain permission to use the Publicity Rights of what the industry frequently refers to as “real people” who appear in their advertising. Such uses of individual Publicity Rights will, without doubt, continue into the augmented and virtual reality contexts.

One guiding principle for advertisers should remain the same with respect to Publicity Rights, no matter the technology: the commercial use of an individual’s Publicity Rights, without permission, may violate an individual’s right of publicity—especially when that use relates to a celebrity.<sup>114</sup>

## The virtual persona: avatars

In many instances, users engage in augmented and virtual realities through “avatars”—virtual lookalikes of

themselves or others<sup>115</sup>—and an advertiser’s commercial use of an individual’s avatar could present significant risk.

Indeed, in a seminal Publicity Rights case, *White v. Samsung Electronics America, Inc.*, the Ninth Circuit Court of Appeals concluded that the defendant’s commercial use of a robot dressed in a ball gown, wig, and costume jewelry, standing next to a game board similar to the one on the game show *Wheel of Fortune*, was a violation of Vanna White’s Publicity Rights.<sup>116</sup> Importantly here, the *White* court determined that the right of publicity was not confined to the unauthorized use of a name or likeness, but could in fact extend to situations that are suggestive of a person’s identity.<sup>117</sup> According to the court, the *White* robot’s physical attributes, dress and stance, when taken as a whole, would have lead viewers to believe (i.e. “suggested”) that the ad was about Vanna White even if it did not include her.<sup>118</sup>

Advertisers that use avatars in their augmented or virtual reality-based advertisements should carefully review that avatar’s attributes and mannerisms to ensure they do not closely resemble actual persons, whether celebrity or otherwise. For example, if an advertiser wants to advertise its new track cleat in a track and field virtual reality video game, it should avoid using a tall athlete who wears a Jamaican national track-jersey and celebrates each victory with a “lightning bolt” pose. That description alone conjures up the image of world-renowned track star Usain Bolt and an avatar with those attributes could give rise to a right of publicity action.

This issue is currently being litigated in several cases involving Electronic Arts, Inc. (“EA”), a video game company famous for its college and professional football games.<sup>119</sup> In these cases, several football players are alleging that EA’s use of their names, likenesses, and biographical information, particularly as displayed on the “player statistics” or similar menus in the games, are problematic.<sup>120</sup> The players’ frustration has led to a number of lawsuits alleging interesting claims. Certainly there are a number of cases that allege that the use of the players’ names, likenesses, and biographical information constitutes a violation of their right of publicity.<sup>121</sup> Two cases analyzed the issues under copyright law, considering whether the video game sufficiently transformed a person’s identity

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<sup>115</sup> See Definition of Avatar,

<https://www.techopedia.com/definition/4624/avatar>.

<sup>116</sup> *White v. Samsung Electronics America, Inc.*, 971 F.2d 1395 (9th Cir. 1992).

<sup>117</sup> See *id.* at 1397.

<sup>118</sup> See *id.* at 1399.

<sup>119</sup> See *Ryan Hart v. Electronic Arts, Inc.*, 717 F.3d 141, 146 (3rd Cir. 2013).

<sup>120</sup> See *id.*; see also *In re NCAA Student-Athlete Name & Likeness Litigation*, 2013 WL 3928293 at \*1271 (9th Cir. Jul. 31, 2013).

<sup>121</sup> See *id.*; see also *Brown v. Electronic Arts, Inc.*, 2013 WL 3927736 (9th Cir. Jul. 31, 2013); see also *Garçon v. FanDuel, Inc.*, 2015 WL 6565995 (D.Md. filed Oct. 30, 2015).

<sup>112</sup> See Snap Inc. Advertising Policies, available at <https://www.snap.com/en-US/ad-policies/>.

<sup>113</sup> See *id.*

<sup>114</sup> See *Katherine Heigl v. Duane Reade, Inc.*, 2014 WL 1383558 (S.D.N.Y. Apr. 9, 2014); see also *Jordan v. Jewel Food Stores, Inc.*, 851 F. Supp. 2d 1102 (N.D. Ill. Feb. 15, 2012), rev’d 743 F.3d 509.

or likeness to such an extent that it no longer resembles that person.<sup>122</sup> Other courts have considered whether such use violates Section 43(a) of the Lanham Act's prohibitions on consumer confusion and deceptive advertising.<sup>123</sup> Players have found the most success, however, with copyright and publicity claims, but recent complaints continue to assert the Lanham Act as a potentially viable cause of action.<sup>124</sup> Whether companies like EA Sports will eventually be instructed to pay the athletes portrayed in their games is still an open question, however, it is clear that using a person's likeness, without permission or compensation is a practice to be wary of in light of its applicability to new AR/VR technologies.

## The gamification of gambling

The proliferation of digital promotions and gamification in the digital space has expanded in the past several years. Unfortunately, the law has not quite caught up with the technology, and advertisers are left with applying decades-old laws to 21<sup>st</sup> century technology. Sweepstakes, contests, gambling and games are predominantly analyzed under state laws. Generally, however, two types of questions apply: (a) is the promotion an illegal lottery (consisting of prize, chance and consideration); or (b) is the promotion gambling? In both cases, new technology finds itself toeing the line.

## Gambling

Several new video games and apps are offering in-app or in-game purchases. Often, those purchases may be exchanged for virtual currency or virtual merchandise which can be traded, exchanged or even placed as wagers in virtual casinos. Courts are now dealing with this issue head on. In September 2016, a federal court dismissed a lawsuit involving the popular mobile game app *Game of War*.<sup>125</sup> In the app, consumers can purchase virtual chips to play in a virtual casino. The app contains casino-style games in which consumers may "bet" their chips for a chance to win various virtual items. Interestingly, the court did not find a violation of Illinois law in the case because it determined that consumers paid the app makers for the chips, regardless of whether they would win or lose in the casino.<sup>126</sup> As a result, one might assume that the court found the inability of consumers to withdraw their winnings as a credit on their credit cards as distinguishable from traditional gambling.

Another case involving allegations of virtual gambling was dismissed in October 2016.<sup>127</sup> In that action,

consumers alleged that the game publisher was complicit in allowing online gambling to occur in connection with the publisher's virtual marketplace.<sup>128</sup> Specifically, consumers would pay real money for in-game items then wager those items on third-party websites based on the outcome of certain matches.<sup>129</sup> Though the court dismissed a putative federal class action based on these allegations, state regulators concluded that the publisher was promoting gambling in violation of state criminal and civil laws.<sup>130</sup>

This makes clear that a careful analysis of specific state gambling laws will be imperative when determining whether virtual currency-style gambling runs afoul of such laws.

## Promotions involving gambling devices

In addition to the gambling issues raised above, sponsors of various instant win games are working on engaging players. Gone are the days of scratch-off cards and pull tabs. Now, game sponsors are using digital casino-style games to reveal winners, including wheels of fortune, roulette, slot machines, and claw games.

To the extent that there is a purchase required to play (albeit with a free method of entry), regulators may view these games as "gambling devices." Some states may require licenses by game sponsors to operate gambling devices, while others may prohibit the devices outright. Accordingly, game sponsors should make sure to review the laws of the states where the game will be available for play (i.e., a review of all states where consumers are eligible to enter), not just the state in which the sponsor of the game is located. After careful review, game sponsors may elect to modify the game with respect to certain higher risk states or elect to void participation by residents of those states.

## Conclusion

The rise and increasing popularity of augmented and virtual reality technologies heralds a new age of innovation and creativity in a multitude of industries. And the advertising industry, no doubt, will be on the cutting edge. As advertisers and marketers seek to innovate using these technologies, they will encounter regulators and litigators trying to retrofit the application of existing law to their marketing practices.

*This Article was prepared by Jason Gordon, Michael Strauss, and Njeri Chasseau, attorneys in Reed Smith LLP's Entertainment and Media Industry Group.*

<sup>122</sup> See Hart, 717 F.3d 141, 146–47 (3rd Cir. 2013); see also NCAA, 2013 WL 3928293 (9th Cir. Jul. 31, 2013).

<sup>123</sup> See, e.g., Brown v. Electronic Arts, Inc., 2013 WL 3927736 at \*1271 (9th Cir. Jul. 31, 2013).

<sup>124</sup> See e.g., FanDuel, 2015 WL 6565995 (D.Md. filed Oct. 30, 2015).

<sup>125</sup> See Ristic v. Machine Zone, Inc., No. 1:15-cv-08996 (N.D. Ill. Sept. 19, 2016).

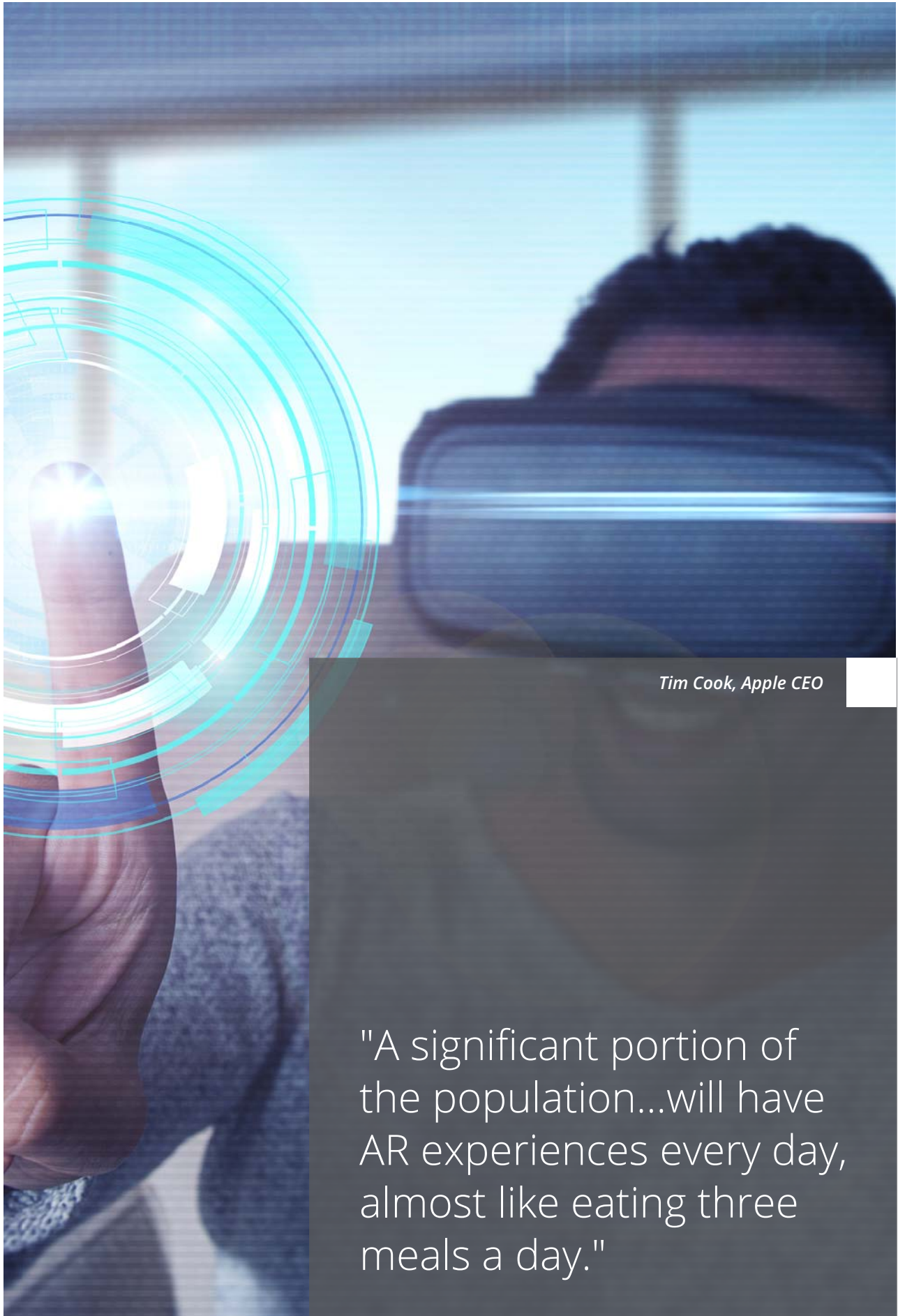
<sup>126</sup> See *id.*

<sup>127</sup> See McLeod v. Valve Corp., No. C16-1227-JCC (W.D. Wash. Oct. 4, 2016).

<sup>128</sup> See *id.*

<sup>129</sup> See *id.*

<sup>130</sup> See *id.*

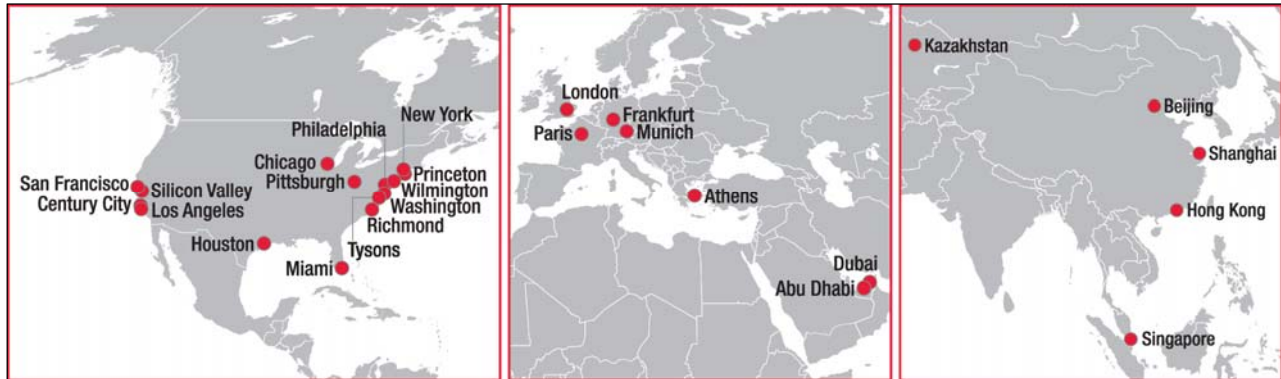


*Tim Cook, Apple CEO*

"A significant portion of the population...will have AR experiences every day, almost like eating three meals a day."

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