

THE REGULATION OF LOCATION-BASED AUGMENTED REALITY APPLICATION

LAWS 428

WORD COUNT: 2819

I Introduction

Augmented Reality (AR) technology is a technology that combines virtual information with the real world.¹ It overlays digital information of objects or places in the real world by employing the camera, sound and display functions through a device such as smartphone or glasses.² Consequently, a person can experience an actual world being supplemented “augmented” with computer-generated images and sounds.³ Rapid technological advancement and innovation has made such unimaginable situation into reality. Now, various industries such as education, healthcare, automotive, gaming, tourism and retail have incorporated AR in their practice.⁴ As AR offers multitude of opportunities to change how industry works in a positive way, there are some real risks and regulatory challenges that need to be considered. This essay will focus on the regulatory challenges and strategies for location-based Augmented Reality particularly in gaming industry. The root of modern location-based gaming is “geocaching” that allows individuals to use GPS devices to discover hidden items placed out in the world.⁵ For example, games such as Pokémon Go, Harry Potter: Wizards Unite and Jurassic World Alive are location-based AR in nature.⁶ However, this essay will focus on Pokémon Go as primary example as it has gained the most prominence and most legal

¹ Yunqiang Chen and others “An overview of augmented reality technology” (2019) 1237 Journal of Physics: Conference Series 1.

² Dean Takahashi “The DeanBeat: What Pokémon Go has Done for Augmented Reality” (26 August 2016) Venturebeat <<http://venturebeat.com/2016/08/26/the-deanbeat-what-pokemon-go-has-done-for-augmented-reality/>>.

³ William T. McClure “When the Virtual and Real Worlds Collide: Beginning to Address the Clash Between Real Property Rights and Augmented Reality Location-Based Technologies Through a Federal Do-Not-Locate Registry” (2017) 103:331 Iowa Law Review 336.

⁴ Forbes Councils Member “10 Industries Likely To Benefit From AR/VR Marketing” (4 September 2020) Forbes <<https://www.forbes.com/sites/forbesagencycouncil/2020/09/04/10-industries-likely-to-benefit-from-arvr-marketing/?sh=6a29eeeb2ed2>>.

⁵ Clinton Nguyen “5 Amazing Location-Based Games That Made Pokémon Go Possible” (13 July 2016) Business Insider <<http://www.businessinsider.com/pokmon-go-5-location-based-games-that-made-the-craze-possible-2016-7>>.

⁶ Tech Desk “Five Augmented Reality (AR) games to try on Android” (30 April 2021) The Indian Express <<https://indianexpress.com/article/technology/gaming/five-augmented-reality-ar-games-to-try-on-android-7296984/>>.

attention.⁷ Pokémon Go requires players to travel to different predetermined real-world locations in order to collect virtual items that contribute to gameplay.⁸

II Regulatory Challenges

The advanced technology of AR has unforeseen effects on privacy law, traditional property law and intellectual property law. AR is a technology that involves the processing of personal data about their users whether their location, IP addresses, images of them or others around them or other information about their activities in the application or on their connected social media accounts.⁹ The information gathered is critical to the core functions of AR devices.¹⁰ This would create privacy concerns such as who owns the data, who has the right to access the data, and how the data can be stored securely.¹¹ Such concerns have been raised by Senator Al Franken of Minnesota, the Senate Privacy and Technology Subcommittee's top Democrat to Niantic, the developer of Pokémon Go. His concerns include the practices of collecting personal data, controlling different functions of users' phones, and sharing game and user data with interested third parties.¹² Some communities will be more risk averse than the others.¹³ In this case, there are people who do not mind sharing information such as their location and email address while there are people who is bothered being tracked

⁷ Joseph Carrafiello "No Trespassing: A Lawmaker's Guide to Protecting Property Rights in the Age of Augmented and Mixed Reality" (2019) 80:3 Ohio State Law Journal 588.

⁸ Claire Warner "How Does "Pokémon Go" Work? Here's Everything We Know about the Tech Behind the Augmented Reality Fad" (13 July 2016) Bustle < <https://www.bustle.com/articles/172317-how-does-pokemon-go-work-heres-everything-we-know-about-the-tech-behind-the-augmented-reality>>.

⁹ Ellyse Dick "Balancing User Privacy and Innovation in Augmented and Virtual Reality" Information and Technology & Innovation Foundation (March 2021) at 1.

¹⁰ At 1.

¹¹ Allan V. Cook and others "How to begin regulating a digital reality world" (25 February 2019) The Deloitte Centre For Government Insights and The Deloitte Centre For Integrated Research <<https://www2.deloitte.com/us/en/insights/industry/public-sector/regulating-digital-reality-augmented-spaces.html>>.

¹² Senator Al Franken "Sen. Franken Presses Makers of "Pokemon Go" Smartphone App Over Privacy Concerns" (12 July 2016) Press Release <https://www.franken.senate.gov/?p=press_release&id=3512>.

¹³ R Brownsword and M Goodwin "Four Key Regulatory Challenges" in *Law and the Technologies of the Twenty-First Century Text and Material* (Cambridge University Press, 2012) 47

by an application. Regulators might not be able to satisfy all views¹⁴, but they can facilitate the making of individual prudential calculation. Regulators need to be careful with the policy response that could “result in overregulation of certain types of data collection, while also leaving critical gaps in protection for others”.¹⁵ At the same time, a policy response that trying to regulate individual technologies will leave policy a step behind innovation as new capabilities and use cases continue to emerge.¹⁶

Another major issues relating to location-based AR gaming are trespassing, creating nuisances on a private property and damaging public property.¹⁷ While some property owners take the opportunity to profit from the boom of AR games, some might feel disturbed.¹⁸ In the United States, Niantic, the developer of Pokémon Go suffered a class action lawsuit by 12 plaintiffs for trespassing.¹⁹ Homeowners also claim that the developer was able to “monetize these properties for its own benefit while offloading the costs associated with physical presence of [its players]”.²⁰ In New Zealand, police had issued multiple warnings to users of Pokémon Go after people “swam and kayaked out to a “Poké gym” in the middle of Oriental Bay in Wellington, gathered outside public toilets at night, and turned up at the headquarters of Hells Angels in Whanganui.”²¹ Apart from private property, there is also issue of whether the developer of the games will be responsible in preventing its users from trespassing onto restricted spaces of public or government-owned property. There is also concern about “Poké gym” being held at unsuitable place, despite being a public area. For instance, Holocaust Museum had to remind visitors to stop catching the Pokémon at the museum

¹⁴ At 47.

¹⁵ Ellyse Dick, above n 9, at 2.

¹⁶ At 2.

¹⁷ Allan V. Cook and others, above n 11, at 3.

¹⁸ Brian D. Wassom “Pokémon Go and the Crisis on an Infinitely Augmented Earth” (10 July 2016) Augmented Legality <<http://www.wassom.com/6316.html>>.

¹⁹ Sam Desatoff “Niantic settles 2016 Pokémon Go class action trespassing lawsuit” (6 September 2019) GameDaily.biz <<https://finance.yahoo.com/news/niantic-settles-2016-pokemon-class-194800175.html>>.

²⁰ Yonah Reback “Virtual Trespass: Not in My Backyard” (12 May 2017) Washington Journal of Law, Technology & Arts <<https://wjlt.com/2017/05/12/virtual-trespass-not-in-my-backyard/>>.

²¹ Eleanor Ainge Roy “Pokémon Go leads New Zealand players to gate of Hells Angels club” (12 July 2016) The Guardian <<https://www.theguardian.com/technology/2016/jul/12/pokemon-go-leads-new-zealand-players-to-hells-angels-club>>.

area as it was not appropriate.²² Although the developers may explicitly discourage people from trespassing through their Terms of Service and user guidelines, arguably it was the creation of their “gyms” that cause people to trespass.²³ This is particularly true in Pokémon Go Litigation where the plaintiffs’ requests to remove their property from the game was ignored and Niantic contends that Pokémon Go’s Terms of Service protect them from the act of players and the virtual game elements are not physical, therefore cannot be considered under trespass.²⁴ While it was announced that two parties had reached a settlement which required Niantic to set up a web portal that would allow homeowners to complain about virtual Pokéstops and Gyms being placed too close to their property, it does not help when similar issues arise in relation to similar location based applications.²⁵ It also raises question of whose rights dominate when someone’s intellectual property is overlaid on top of real-world property²⁶. In New Zealand, s 3(1) of Trespass Act 1980 states that “every person commits an offence against this Act who trespasses on any place and, after being warned to leave that place by an occupier of that place, neglects or refuses to do so”.²⁷ Here, the focus of trespass is on physical place, but with the rise of AR technology, it is possible to have “virtual property” alongside physical property.

Another alternative for affected property owners under common law is nuisance. A plaintiff could argue that the developers are creating either public or private nuisance by causing third parties to congregate near or around their private property and thus diminishing their use or enjoyment of the land.²⁸ However, the developers can release themselves from the liability and passing the responsibility on the users by using Terms of Service.²⁹ Consequently, the property owners had to pursue claims against

²² Andrea Peterson “Holocaust Museum to visitors: Please stop catching Pokémon here” (12 July 2016) The Washington Post <<https://www.washingtonpost.com/news/the-switch/wp/2016/07/12/holocaust-museum-to-visitors-please-stop-catching-pokemon-here/>>.

²³ Izza Tahir “Pokémon GO: To regulate or not to regulate?” (3 August 2016) Politheor <<https://politheor.net/pokemon-go-to-regulate-or-not-to-regulate/>>.

²⁴ William T. McClure, above n 3, at 347.

²⁵ Joseph Carrafiello, above n 7, at 591.

²⁶ At 591.

²⁷ Trespass Act 1980, s 3(1).

²⁸ Joseph Carrafiello, above n 7, at 593.

²⁹ At 593.

each individual user.³⁰ In order to provide better protection for property owners whose property rights have been violated, there is a need “for an updated catchall provision that will handle trespass, nuisance and other claims caused by virtual property being overlaid on real-world property”.³¹

Copyright and trademark infringement issues may also arise from the use of location-based AR. The use of intellectual property in the virtual world would be a major concern for owners of IP rights.³² For instance, AR games such as Pokémon Go use a private business property as a locational reference accompanied by an image, logo or description about the place, yet the business owner was not compensated for something determined to have market value.³³ In the United States, trademark infringement claim is under the Lanham Trademark Act of 1946 (Lanham Act).³⁴ To have a successful trademark infringement claim, the business must show that it has a protectible ownership interest in the mark and the defendant’s use of the mark is likely to cause confusion, thereby infringing upon business owner’s right to the mark.³⁵ Some courts in the United States adopt a narrow construction of the Lanham Act and apply it “to artistic works only where the public interest in avoiding consumer confusion outweighs the public interest in free expression” to strike the balance between trademark claims and the First Amendment.³⁶ Besides, there are jurisdictional problems relating to claim enforcement as users can log in from several countries whose IP laws may differ widely from one to another.³⁷ It is uncertain whether a trademark infringement claim may or may not be successful in getting Pokémon Go game removed from a privately owned business property, but what certain is such claim would create enormous strain on a business’s budgets.³⁸

³⁰ At 593.

³¹ At 592.

³² Chirag Prajapati “What are the Legal Issues That Stare at Augmented/Virtual Reality?” (22 March 2018) Entrepreneur Asia Pacific < <https://www.entrepreneur.com/article/310821>>.

³³ AMF Inc. v. Sleekcraft Boats, 599 F.2d 341, 348-49 (9th Cir. 1979).

³⁴ Lanham Trademark Act of 1946, 15 U.S.C § 1114 (1).

³⁵ Department of Parks & Recreation v. Bazaar Del Mundo, Inc., 448 F.3d 1118, 1124 (9th Cir. 2006).

³⁶ Rogers v. Grimaldi, 875 F.2d 994, 999 (2d Cir. 1989).

³⁷ Chirag Prajapati, above n 30.

³⁸ Peter Stamatis & Steven Shonder “To sue or Not to sue for Trademark Infringement” (22 September 2016) Inside Counsel < <http://www.insidecounsel.com/2016/09/22/to-sue-or-not-to-sue-for-trademark-infringement>>.

III Regulatory Strategies

When dealing with new emerging technology, government should focus on looking at current applicable laws, regulations, and rules to address the legal issues that arise before opting to enact new laws. Despite no specific regulation that is dedicated to the new emerging technology, or there might be gaps in the law, it is rare to see an emerging technology be in regulatory void.³⁹ In some circumstances, existing regulations are adequate and already engage with the emerging technology.⁴⁰ As for location-based AR application, it is likely that the government need to do comprehensive review of various existing policies particularly in the area of property laws, privacy regulations and intellectual property rights.⁴¹

A suitable regulatory tilt to address location-based AR application should be adaptive approach to regulation in which it relies on an iterative process of feedback loops. The outcomes then can contribute to revision of existing regulations.⁴² To explain further, adaptive approach rely more on trial and error and co-design of regulation and standards.⁴³ A rapid feedback loops will allow regulators to evaluate policies against set standards.⁴⁴ Regulators can seek feedback by setting up policy labs, creating regulatory sandboxes, crowdsourcing policymaking, and providing representation to industry in the governance process via self-regulatory and private standard-setting bodies.⁴⁵ A collaborative regulation that involves a broader set of players across the ecosystem also can be a good strategy.⁴⁶ Regulators can benefit from

³⁹ R Brownsword and M Goodwin, above n 13, at 64.

⁴⁰ At 64.

⁴¹ Mark A. Lemley and Eugene Volokh “Law, virtual reality, and augmented reality” (April 2018) University of Pennsylvania Law Review 166, no. 5.

⁴² Allan V. Cook and others, above n 11, at 5.

⁴³ William D. Eggers and Mike Turley “The future of regulation” (19 June 2018) Deloitte Insights <<https://www2.deloitte.com/us/en/insights/industry/public-sector/future-of-regulation/regulating-emerging-technology.html>> at 11.

⁴⁴ William D. Eggers and Mike Turley, above n 43, at 11.

⁴⁵ World Economic Forum “Agile governance reimagining policy-making in the fourth industrial revolution” (January 2018) <http://www3.weforum.org/docs/WEF_Agile_Governance_Reimagining_Policy-making_4IR_report.pdf>.

⁴⁶ William D. Eggers and Mike Turley, above n 43, at 17.

working directly with businesses, innovators, and other regulators to define rules and standards for location-based AR application.⁴⁷ Besides, when multiple regulators from different nation can collaborate with those that being regulated, it will encourage innovation while protecting consumers from potential fraud or safety concerns.⁴⁸ Soft law mechanism is another possible arrangement towards shifting to more adaptive regulation. Hard law involves treaties and statutes while soft law can include informal guidance, a push for industry self-regulation, best-practice guidance, codes of conduct and third-party certification and accreditation.⁴⁹ In the context of emerging technologies, soft law have several advantages over formal regulation as it allows regulators to adapt quickly to changes in technology and business models.⁵⁰

To apply soft law in the context of privacy concern relating to location-based AG gaming application, regulators can develop voluntary guidelines for AR developers to secure users' privacy through transparency and disclosure practices, user privacy controls that allows opt-out mechanics, information security standards, and considerations for the unique risks presented by biometric identifying and biometrically derived data.⁵¹ To avoid overregulation of certain types of data, policymakers should address privacy in AR by considering the different types of information these device or applications collect and establishing appropriate safeguards to protect users against actual harms that may arise from this data collection.⁵² The aim is to ensure a comprehensive and technology neutral regulatory framework that allow space for companies building AR device or application to continue to innovate while mitigating harm to users.⁵³ Regulators also should consider hard law, such as enacting privacy legislation if the current legislation is no longer effective to engage with emerging technology such as AR. In New Zealand, the Privacy Act 2020 has repealed and replaced the Privacy Act 1993. The Act has strengthened privacy protection and

⁴⁷ At 17.

⁴⁸ At 17.

⁴⁹ At 11.

⁵⁰ William McGeveran "Friending the privacy regulations" *Arizona Legal Review* (2016) 987.

⁵¹ Ellysse Dick, above n 9, at 2.

⁵² At 2.

⁵³ At 2.

promotes early intervention and risk management by agencies.⁵⁴ The new Act also has extraterritorial effect in which overseas business or organisation that is “carrying on business” in New Zealand will subject to the Act’s privacy obligations despite no physical presence.⁵⁵ The Act also strengthened cross-border protections in which New Zealand agencies will have to take reasonable steps to ensure that personal information sent overseas is protected by comparable privacy standards.⁵⁶ Furthermore, the Act also clarifies that when a New Zealand agency engages an overseas service provider, it will have to comply with New Zealand privacy laws.⁵⁷ The new Privacy Act 2020 in New Zealand should be able to provide better privacy protection when it involves overseas company such as Niantic in the case of breach of privacy.

The current common law legal framework proves to be inadequate to answer the question of how to regulate the AR application to protect real-world property rights while simultaneously encouraging intellectual property development.⁵⁸ There are inconsistencies between judge-made common law and the new hybrid property rights that are emerging with the creation of location-based AR application.⁵⁹ Continuing the current common law regulation without addressing the tensions between intellectual property and real-world property owners would only produce an inconsistent body of law.⁶⁰ As a starting point, regulators can consider a real and intellectual property hybrid ownership. The updated laws should consider the potential of non-physical invasion, which can be described as “virtual trespass”.⁶¹ The law also must be flexible and gives opportunity to real-world property owner to choose for inclusion or exclusion.⁶² Although “virtual trespass” might seem like a good idea to address the current issue,

⁵⁴ Ministry of Justice “Privacy” (1 July 2020) Justice.govt.nz < <https://www.justice.govt.nz/justice-sector-policy/key-initiatives/privacy/>>.

⁵⁵ Graydon Hayes “Privacy 2.0: Key changes in the Privacy Act 2020” (16 June 2020) Privacy Commissioner < <https://www.privacy.org.nz/blog/key-changes-in-the-privacy-act-2020/>>.

⁵⁶ Ministry of Justice, above n 48.

⁵⁷ Ministry of Justice, above n 48.

⁵⁸ Joseph Carrafiello, above n 7, at 594.

⁵⁹ At 594.

⁶⁰ At 594.

⁶¹ Yonah Reback, above n 20.

⁶² Above n 20.

some will argue that virtual trespass could rewrite the common law and change what the average innovator could expect to be liable for.⁶³

To some, using a common law nuisance would be more aligned with the standards that currently exists as it can include any activities that disturb the possessor of the property's quiet enjoyment.⁶⁴ In *Stratton-Oakmont v Prodigy*, a New York court ruled that an Internet intermediary could be held liable for defamation for claims made by users of the service as the comments on the message board were moderated.⁶⁵ This decision had imposed great liability risks onto anyone that moderated a user-generated Internet service.⁶⁶ Arguably, by introducing "virtual trespass", it will impose great liability risk onto the developers.

In Milwaukee County, they passed an Ordinance 16-637 which requires "virtual and location-based augmented reality games" to apply for a permit to operate in Milwaukee County parks.⁶⁷ Subjecting an international company that currently interacting with numerous governments around the world the same as local company is unreasonable as the AR gaming technology is simply in different category through its scale and complexity.⁶⁸ The Ordinance has effectively hindered technological advancement as the company had to divert substantial resources to regulatory compliance.⁶⁹ Candy Lab, the developer of Texas Rope 'Em, another AR game had successfully sued the county for violation of its First Amendment rights.⁷⁰ Justice Scalia declared that "video games qualify for First Amendment protection."⁷¹ Ultimately, a uniform regulation for this location-based AR gaming industry seems a better option as permit system is generally used for individuals or small entities for local event reservations.⁷²

⁶³ Jennifer Huddleston "Can You Trespass without Setting foot on a Piece of Property?" (28 June 2018) The Bridge < <https://www.mercatus.org/bridge/commentary/can-you-trespass-without-setting-foot-piece-property>>.

⁶⁴ Jennifer Huddleston, above n 56.

⁶⁵ *Stratton Oakmont, Inc. v. Prodigy Services* 23 Media L. Rep. 1794 (N.Y. Sup. Ct. 1995).

⁶⁶ *Stratton Oakmont, Inc. v. Prodigy*, above n 58.

⁶⁷ Milwaukee County, Wis., Ordinance 16-637 (2 February 2017).

⁶⁸ William T. McClure, above n 3, at 355.

⁶⁹ At 355.

⁷⁰ Defs. 'Mem. Law Supp. Its Rule 12(b)(6) Mot. Dismiss P1.'s Compl. *Candy Lab, Inc. v. Milwaukee Cty.*, No. 17-CV-00569, at 4 (31 May 2017).

⁷¹ *Brown v. Entm't Merch. Ass'n.*, 564 U.S. 786, 790 (2011).

⁷² William T. McClure, above n 3, at 355.

In Illinois, a Location-Based Video Game Protection Act was introduced. This Act imitates a “Take Down Notice” practice in which the developer of a location-based video games is required to eliminate game elements within four business days of receiving a request and reason for removal from a property owner.⁷³ The most problematic aspect of this Illinois legislation is the short time window that it would give to developer of a location-based video games.⁷⁴ Four days arguably is insufficient to recode the game and remove the property from a system especially if this legislation is to be adopted onto a global scale.⁷⁵ It would also be impractical for game creators to comply with a staggering number of takedown request as they are continually updating maps.⁷⁶ Attorney Jacob Huebert commented that “I don’t believe that the state has done any research on the technological feasibility of this [statute], on the reasonability of expecting a company to make changes in the way it operates within two days of receiving a request.”⁷⁷

Another suggestion for regulatory strategy for location-based AR games is to introduce Do-Not-Locate Registry that works like the National Do Not Call Registry in the United States.⁷⁸ The way Do Not Call Registry works is through registering their phone numbers with the government and requests not to be contacted by call centres.⁷⁹ Consequently, the Federal Trade Commission (FTC) will compel telemarketing companies to regularly scrub their contact lists against the government’s Do-Not-Call list.⁸⁰ The University of Washington Tech Policy Lab recommends that the Do-Not-Locate registry should have inherent flexibility for updating with the progression of cultural and technical changes.⁸¹ The second recommendation is to collab between the

⁷³ H.B. 2459, 100th Gen. Assemb., Reg. Sess. § 10(a) (III. 2017).

⁷⁴ William T. McClure, above n 3, 357.

⁷⁵ At 357.

⁷⁶ At 357.

⁷⁷ Illinois News Network “Pidgey’s Law’ Raises Questions of Feasibility in Regulating Pokémon Go” (6 September 2016) Chronicle Media <http://ilnews.org/news/statewide/pidgey-s-law-raises-questions-of-feasibility-in-regulating-pok/article_4f35a8b5-a1fd-5739-b211-5147629969oC.html>.

⁷⁸ 15 U.S.C. §§ 6151-55 (2012)

⁷⁹ Joshua A.T. Fairfield “Do-Not-Track as Default, 11 NW.J. TECH & INTELL. PROP. 575,595 & N.116 (2013) (“15 U.S.C. § 45(a)(1)(2006)

⁸⁰ Above n 68, at 587-88.

⁸¹ Tech Policy Lab “Augmented Reality: A technology and policy primer 1-4” (September 2015) University of Washington <http://www.franziroesner.com/pdf/Augmented_Reality_Primer-TechPolicyLab.pdf>.

regulators and the regulated, an open relationship between the two to allow sharing the regulators' policy values alongside the designers' technical consideration.⁸² This method was proposed to address property owner's grievances without having to navigate a lengthy legal process.⁸³

IV Conclusion

There are significant challenges faced by regulators to address legal issues that arise together with location-based AR technology. Regulators need to review traditional property law to include modern challenges for property owners that involve non-physical invasion. Regulators also need to strengthen current legislation on privacy law to protect sensitive information data of users from being abused. Trademark and copyright law also need to be focused on and regulators must strive to seek balance between the rights of IP owners and to promote technological innovation. Soft law is a good regulatory strategy to start with as it allows regulators to adapt to changes in technology and business models at a faster rate than hard laws. Lastly, collaborative regulation that involves multiple regulators, businesses and innovators should be considered to create a uniform standard or code of conduct that is acceptable globally.

⁸² Tech Policy Lab, above n 70.

⁸³ William T. McClure, above n 3, 363.