# THE EMERGENCE OF LEGAL AND ETHICAL ISSUES IN IMMERSIVE TOURISM IN ASIA

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**Abstract** - A comprehensive overview and meta-study of the legal, ethical, and political issues around the use of immersive technology in the tourism industry. As technologies like augmented and virtual reality become more ubiquitous in tourism contexts, there are new sets of challenges and risks which policy makers are coming to grips with. This study examines those issues with an analysis of current and developing research and policies from Asian markets.

**Keywords** - Immersive Tourism, Augmented Tourism, Virtual Tourism, Technology Policy

## I. INTRODUCTION

As this research focuseson the design and use of immersive technology in tourism and MICE contexts, it is important for the stakeholders in related fields such as museology, event management, and tourism to understand the terms and underlying technology. Immersive technology refers to a wide range of media, devices, and hardware that facilitates the blending of digital information and the physical world. It includes a spectrum of technologies and concepts[1]. One fundamental concept is the Reality-Virtuality Continuum conceptualized by Milgram and Kishino in 1994 where ideas like augmented reality (AR) and virtual reality (VR) are put on a scale of realities ranging from completely real on one end,to completely simulated environments on the other[2]. In this widely accepted concept, mixed reality is deemed a term to describe any part of the spectrum that contains both virtual and real elements. Later, the term immersive came into use to describe the implementation of mixed reality with human participants. From this we come to hear terms like immersive learning where augmented and virtual reality is used in educational contexts, or immersive tourism where mixed reality is implemented in tourism contexts [3].

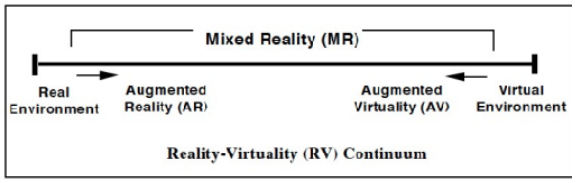



**Fig. 1. Milgram's Reality-Virtuality Continuum**

## II. IMMERSIVE TOURISM

Immersive technology has a long history in many tourism related fields, even if it was not called immersive technology at that time. For example, there has been widespread use of digital information in tours, museums, classrooms, and events since the computer became more accessible, such as audio headsets for guided museum tours, or websites with event information. As immersive technology advances, that digital information is becoming more deeply connected with the physical world [4]. So, for example, instead of an audio recording of a narrator telling a museum visitor about the item on display in an exhibit, a hologram of the creator will appear and give a first-hand account of the history behind the exhibit. This is meant to immerse the visitor in the digital content. With the recent advances in smartphone, computer vision, and machine learning technology, new types and ways of interacting with digital media are being formed and explored, with great affordance to tourism and learning contexts. Previous research in augmented and virtual realities has been useful in informal learning environments such as museums, libraries, and art galleries. There have also been obvious uses in tourism such as creating tour guides and providing navigation help. MICE contexts require a different mix of technology implementation and the use of AR/VR may vary significantly depending on the event and technology deployed [1,5]. From Milgram's Reality-Virtuality Continuum and past research into immersive tourism, we can see that the two concepts of AR and VR offer great potential and there are many examples of useful implementations in tourism contexts. In broad terms, because augmented reality incorporates more of the real environment, it finds more use when travelers are on site, connecting digital content to the places, things, and surrounding people. Virtual Reality has found more use for travelers before they depart, or even to travel virtually rather than physically to a location. Virtual tours of museums, cultural heritage sites, and 360 live videos of events like music concerts are already allowing travelers to visit far off places and participate in events without leaving their homes. With these two major case uses in virtual travel and augmented travel, a major leap to take is the merging of these two concepts, and creatingways for virtual and physical travelers to experience destinations together or allowing virtual event participants ways to interact with participants

physically present at the event venue, is yet to be widely explored, and presents a set of opportunities for MICE industries and also some possible risks[1].

## III. TECHNOLOGY IN ASIA

Asia has a multitude of cultures and unique sets of conditions evidenced by the different ways technology has been adopted and diffused throughout the region. There are large but closing gaps in wealth and levels of development in the region. Technology adoption and infrastructure in Asia has historically also seen large gaps between nations but those gaps are seemingly closing faster as technology gets cheaper and more accessible [6,7]. One important behavioral concept to connect to this discussion is the idea that humans, in general, when given a new technology,have a tendency to use it just like the old technology – with similar purposes and in similar ways. An example being newspapers and the Internet.In the early years of the Internet, publishers and technologists alike used the World Wide Web much like the world's largest open access newspaper page, mainly posting static information for others to read. The Internet, even in its early stages was capable of much more, and it took many years before the concept of Web 2.0 emerged where publishers of content on the Internet focused on interaction with the content and with others around the content as much or more than the actual content published [8].

### A. Galapagos Syndrome

National and regional culture has been shown to have effects on the spread and diffusion of innovation [9]. This phenomenon can be observed in a special way when looking at how technologies developed in Japan around cultural norms and failed to become popular around the world where those norms are somewhat different. These differences can be compared by analyzing the unique technologies that originated in Japan, and contrasting those differences with measurable differences that exist between other cultures such as Hofstede's cultural dimensions [10]. This phenomenon of different streams of technology innovation has been analogized to evolutionary theory and called Galapagos Syndrome [11]. Just as species on and around the unique environment of the Galapagos islands were able to evolve in unique ways, the unique cultural landscape in Japan has created some different and unique technology. That technology has proven not well suited in other cultures on multiple occasions. The Galapagos Syndrome term is most used in Japan to refer to the continued use of flip phones after smartphones became popular elsewhere in the world. One underlying shared concept between technological innovation and evolution is the iterative process of design, which helps to explain changes in nature and at the same time the development process of technologies. The iterative and incremental development (IID) process is important to innovation in technical fields like software development and engineering. The process of "try and repeat" is found both in nature, and in technology design by the IID process, but evolutionary biologists differentiate the random changes found in naturefrom the intentional changes in our technology. The parallels appear when describing how surroundings affect the outcomes of the process [12].

### B. Steering the Ship or Making a Boat

The Galapagos Syndrome in Japan is an example of how humans tend to use technology, for a time at least, like past iterations. It also shows us that these effects are amplified by strong technology infrastructures that support past iterations. This leads back to the idea of closing gaps in technology among Asian nations. We argue that it is in many ways easier to adopt the latest technology in developing regions because fewer past uses of technology are there to influence how new technology is to be used and technology infrastructure can be built to directly support new technology. It can be easier to build than to tear down and build again. Political and commercial interests are tied up in the current infrastructure and the status quo, and thus the strong infrastructures of Japan and Korea, while vastly superior to countries like Laos and Indonesia, have also become large ships that take enormous effort steer in impactful ways. Immersive technology is bandwidth heavy, graphically intense, and gathers large amounts of data. WhileJapan,where the current infrastructure is much better equipped to handle more data and processing needs, lacks the commercial and political will to offer free WiFior address the collection of personal data of private citizens in serious ways.

### C. Influences of China and the West

The world's largest technology companies are based in China and the United States. These countries take a very different approach to regulating and implementing technology. The biggest example is the great firewall that has been placed in China's data networks to control, block, and monitor data traffic both in China and around the world. This is in stark contrast to the United States where much of the power to use and implement technology has largely been left to the largest technology companies. These varied approaches, each with differing perspectives on cybersecurity, privacy rights and technology diffusion, may be putting developing Asian nations in a difficult position. Companies like Amazon, Facebook, and Google have been investing greatly in Asian countries, and the regulatory worlds they bring with them may not meld with Chinese companies and Chinese regulators. This was seen in 2019 when the US Government forced Google to cut ties to Huawei over privacy and surveillance policies, along with other less explained political reasons. As will be

described later, the political and policy environments of these two groups will become more important as immersive technology with augmented and virtual reality grows. It also puts the travel industry in possible trouble as immersive technology will need to be 'borderless' to be most effective for travelers.

## IV. DATA, BANDWIDTH, AND PRIVACY

Immersive technology creates a bridge between digital content and the physical world, between simulations and current conditions, and creates layers of virtual worlds on the real world as we know it [1]. This means that these technologies will take in more data, require more bandwidth, and invade our privacy like never before. There are lots of social, behavioral, and political implications for these effects of wide-spread immersive technology use. In the travel industry, location-based services are popular and convenient for travelers and is a type of augmented reality, connecting digital content to the current location of the user. An example of this is a company called Foursquare, which created a location based social network that allowed users to check-in and rate restaurants, shops, and attractions. It allowed users to see places around them that their friends had been to and liked, signal to a business what was good about their services,and discover popular places when traveling. It also helped pave the way for newer location-based marketing services for businesses, who could now target users that were new to the area and close to them, and who may have been to similar places before. The service was useful to both users and businesses, but Foursquare itself found it made more money as a data broker then offering these popular services to businesses and consumers. That is because of the large amount of data points it was able to collect about consumer behavior, foot traffic, and personal information about users and businesses that used the service. Foursquare now has largely left the consumer facing services business and now is a data management company, and a very profitable one at that [13,14]. More data, more money and less privacy is the trend with business models related to immersive tourism products. Often, the end users are not the customers but the product in these new data driven business models. Users are mined for their data and their actions, to be used to attract more users and collect more data. The more data collected, the more is known about users, and the less private their lives become, and it is where immersive technology is taking us. In the Foursquare example, smartphones helped collect GPS location data and connect it to a personal social profile. New immersive technology collects much more information. Because the immersion in immersive technology requires more information about the world in order to accurately connect digital content to it. Virtual reality headsets track a user's motion, head movements, eye movements, vocal commands, and sometimes utilize up to 5 or 6 cameras collecting information about everyone and everything around you. This is copious amounts of data and much more than in the smartphone Foursquare example. All of this data collection means stronger connections between users and data networks. Travelers are already becomingdependent on access to strong and reliable connections to the Internet. Immersive technology only stands to exacerbate these effects. More and more data will be flowing from users and less to them, as immersive tourism developers will be looking to leverage large pools of data about locations from many users. Travelers many times don't have cheap, strong access to data networks because data carriers need to lease data that is out of their domains. So, all around Asia, data brokers are looking to sell short term access to local networks. The average user would prefer free, wide-spread WiFi services, which some countries do much better than others [15]. Korea and Japan are good examples of this, as they differ greatly on the concept of public access to data networks. Japan has struggled to get wider access to public WiFi as the number of international tourists who demand it continue to increase, and Korea has sped forward with open networks on public spaces and public transport. The implications of these policies are more impactful when immersive tourism becomes more widespread as the systems benefit from network effects and larger pools of data. Policies that lean toward more free public network access points will enjoy the benefits of large amounts of data just as Foursquare did. This is connected to the notion of 'smart cities' where data is collected to analyze and improve public services like public transportation, water reclamation, housing development, etc. This is where China's data collection policies start to see possible benefits to policy makers, who claim more ownership over the data on public networks. What is done with the data, how it is used, and what policies are put on the treatment of that data is another matter and privacy is at the heart of it. Privacy is often traded for convenience in technology use. Privacy policy is evolving but seemingly not keeping up with the advances in technology [16,17]. Many Asian countries have their own take on privacy policy and law, which in many cases is tied to type of government and ideals toward free speech. Often lawmakers are making tradeoffs and compromises in policy between privacy, free speech, and the value of public and private surveillance [18].

## V. LEGAL AND ETHICAL STANDARDS

There has yet to be a largely unifying policy standard on immersive technology anywhere, and much of the world is still struggling with issues arising out of the mobile internet arena. Asia has yet to form a regional policy on the underlying issues of immersive technology such as data collection, privacy, and

network access. There are some standards that have come from US and EU regulations that have been adopted at least in part by some countries in Asia. To begin to understand what trends might start to form for immersive tourism technologies we can look at some standards beginning to be formed in the West, China, and examine how some Asian countries are adopting them.

### A. General Data Protection Regulation of the EU

The General Data Protection Regulation of the EU or GDPR, is one of the most comprehensive packages of legislation to deal with personal data, and its impact can be seen all over the world. TheGDPR seeks to give more control of personal data back to individuals, and it seems to be succeeding in this goal to varying degrees by giving EU citizens a basic set of rights with regard to how personal data can be used, shared, and stored. Those rights include the right to be informed of who processes your data, gives you the right to access what data has been collected about you, provides for a process to amend or change data about you, the ability to have your data deleted, the right to block the redistribution of your data, the ability to port your data to other services, and requires companies to inform you when your data might have been breached by hackers or security failures. All of these rights seem like good ideas to protect consumers when looking at the business models of data supremacy and surveillance capitalism, but the implementation still has critics both in corporate and consumer protection camps [19,20]. One good thing to come out of this for immersive tourism developers, is an understanding and confidence that to be compliant with legal standards throughout the EU, which has become the world standard for mid-size companies who don't have the will or the resources to comply with multiple region laws, is to be compliant in most jurisdictions outside the EU as well, because the GDPR is themost strict and comprehensive policy in the world to date.

### B. Section 230 of the Communications Decency Act

When the United States was looking to make laws to regulate the flow of data on the Internet, pornographic material was a focus for the Communication Decency Act of 1996. Deliberations on this legislation, brought about a re-examination of the definition of information posted on the Internet as being different from printed or televised content. Section 230 of the act has been interpreted to say that operators of Internet services are not to be construed as publishers (and thus not legally liable for the words of third parties who use their services). Basically, that means websites can't be sued for things users of their website say, but they also have the right to take down content their users put up without fear of being sued for impeding free speech. This law is ultimately important to the rise of super-huge information services like Facebook and Google, as it allowed them to scale as information services and not be liable for the information on their networks created by the people who use it [21]. This will have lasting effects on immersive tourism as without it many business models of leveraging user generated content like reviews and location data would become much less feasible.

### C. The Act on the Protection of Personal Information

One example of an Asian countries perspective on data legislation is Japan's Act on the Protection of Personal Information (APPI). The first version of it came into effect in 2003 and was revised in 2015, with the revisions coming into effect in 2017. This was before the GDPR came into effect but shared a few key conditions, mainly setting a fine for the mishandling of personal data. But like the GDPR, it has no effectiveness outside of Japan, so there was extra thought put into the transfer of data out of the country, which can pose trouble for international corporations [22]. Japan has historically been very sensitive to privacy, although the enforcement of privacy infringements can be difficult. This is in stark contrast to Korea and China where there are different degrees of tolerance of public and private surveillance connected to technology use.

### D. Ethics over Legal Compliance

A big consideration that is many times overlooked by immersive technology developers is the ethical implications of a design or policy stance of their products. They may have legal teams that do their due diligence to comply with the law in every region, but that focus on the law may create an overconfidence resulting in a failure to see possible ethical problems and issues arising from the design and use of immersive tools and services. Firstly, the law is behind the progress of the technology, so the legal standard, even though seemingly new when compared to other law, may be out of date or inapplicable to the new use. Secondly, and especially for immersive tourism, there are consequences for standardizing policy and implementation in several regions. Lastly, when the company is investigated for ethical and social issues that arise from using immersive technology, they can site compliance with law and avoid legal repercussions, but not social criticism. This deteriorates trust in the technology and the companies that deploy them in the public. Therefore immersive tourism-based products and services need to work to anticipate bad actors or possible misuses of the technology.

## VI. HARMS AND LEGAL ISSUES OF IMMERSIVE TOURISM

To better inform the ethics of deploying immersive technology in tourism contexts, it is helpful in

understanding some possible harms to consumers and society. There are also a list of high risk of legal liability areas of particular concern for immersive tourism.

**A. Possible Harms of Immersive Tourism**

Most of these items are possible harms taken from immersive technology in educational contexts, most of the items have strong relevance to tourism contexts as well.

1. The Divided Brain - This is the idea that harm can come to the consumer because the immersive experience requires a good amount of attention to operate and is designed to be used in tandem with other activities. Playing Pokémon Go while driving is a good example of this. This is important in immersive tourism because many uses involve looking through a screen for augmented navigation of a destination and could result in injury or accident because they are distracted while moving or operating a vehicle.
2. Digital Addiction - Many business models for tourism information are connected to advertising, and websites and applications earn more when users spend more time on their sites and apps. This incentivizes designers to optimize for engagement, and thus make every effort to motivate users to open the app or keep reading a website feed. This could be more dangerous in a virtual environment because more data is collected and could be leveraged against a user's behavior to keep them in the virtual space.
3. Breakdown of Truth - Just as Photoshop has become a tool to manipulate pictures and misrepresent the truth, immersive technology can and will be used by bad actors to distort the facts. Giving false translations, guiding tourists to trap locations, and giving false impressions of what locations really look like in virtual environments.
4. Political Polarization and Radicalization - Computer algorithms are optimized for engagement, meaning they are designed to keep users using the service, andhave a tendency to show us things we like or agree with. This has an effect of strengthening bias or false beliefs. Virtual worlds can be procedurally generated to represent a user's political tendencies.

These are just some of the possible harms that can come to end consumers of immersive tourism and serve as potential risks to developers, tourism promoters, and destination managers seeking to add elements to their marketing, promotion, and experience offerings using immersive technology.

**B. Legal Issues of Immersive Tourism**

There are many issues of law that relate to immersive tourism. Some of these issues have aspects to them that are unique to Asian markets.

1. Privacy and Data Collection - The most daunting challenge to immersive technology is the exponential increase in data collection. Tourists will be looking for safe alternatives while traveling and using immersive media.
2. Payment and Compensation - Using immersive technology is being used to train the next generation of AI. Our collective data will help automate tourism jobs, inform immersive tour design, and help optimize destination travel.
3. Copyrights and IP - Internet users are mixing and remixing music, literature, art, and video. Immersive users will do the same for immersive content. If I connect my digital content to a piece of art, does the artist have rights? The current copyright values differ wildly in among Asian markets.
4. Cybercrime - Virtual stalkers, cyberbullying, impersonation, and a host of other torts and possible crimes will be committed in virtual and semi-virtual worlds. If you harmed in virtual worlds, where do you go to and who do you call for help?
5. Private/Public Square - The idea that virtual tours may belong to all who visit them and are much like a park or other public gathering space. The companies that host them must consider that the communication that takes place there may be a form of public protected speech.
6. End User Agreements - Technology companies are often overreaching with the rights they ask us to give up when we first sign in to use. Policy makers may need to override some of this trend for immersive tourism to protect over collection of data.

## VII. CONCLUSION

Immersive tourism is an exciting and innovative area, and it is set to grow commercially and publicly as companies and governments put augmented and virtual reality to work in tourism contexts. There are also still many policy and legal frameworks needed to be worked out to have a safe, consistent, and sustainable immersive tourism ecosystem. There are a few suggestions and concepts that can guide the process of forming these frameworks. These concepts could be fundamental to transforming existing policies and laws to better fit a world layered and mixed with digital worlds on top of it.

1. A set of values for data collection - technology developers and tourism management alike should agree on a set of norms on the critical issue of data collection. It will be a key challenge in successfully implementing immersive tourism at scale. Those values can include a kind ofHippocratic Oath of data collection, knowing when to opt-in or opt-out for data collection by

giving informed choice, and offering control to users over the data collected about them.
2. Privacy by design - this is a concept for technology developers that prioritizes privacy when making design decisions for the product.
3. Network Neutrality - The current technology and information gap may widen with immersive technologies; network carriers will be seeking to leverage their infrastructure to tier high immersive experiences that demand extreme amounts of bandwidth.
4. Digital Literacy - We will need more travelers that are digitally literate and understand the risks and can navigate immersive tourism environments safely. This may require destination marketing organizations to be proactive with education campaigns.

Augmented tourism and virtual tourism are aspects of immersive tourism. They are increasingly important tothe growth in the tourism industry, both economically and ecologically, moving into the future. One reason for this is that there are still many new and interesting ways immersive tourism will connect other industries and special interest tourism as well. Those new opportunities will be realized better if those in the tourism industry considerthe ethical and legal challenges involved with implementing immersive tourism.

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