



2020-1-UK01-KA227-YOU-094543

## IO1- A3: Digital Design Compendium Module: Digital Transformation of Tourism: Existing actions & initiatives to go digital

KA2 - Cooperation for innovation and the exchange of good practices  
Partnerships for creativity



The European Commission's support for the production of this publication does not constitute an endorsement of the contents, which reflect the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

## REVISION HISTORY

Version	Date	Author	Description	Action	Pages
1.0	15/12/2021	Club for UNESCO	Digital Transformation of Tourism: Existing actions & initiatives to go digital	C	12

(\*) Action: C = Creation, I = Insert, U = Update, R = Replace, D = Delete

## REFERENCED DOCUMENTS

ID	Reference	Title
1	2020-1-UK01-KA227-YOU-094543	HerTour4Youth Proposal
2		

## APPLICABLE DOCUMENTS

ID	Reference	Title
1	Deliverable IO1.A3	Elaboration of Training Methodology
2		





## Contents

1. Introduction.....	4
1.1 Learning Outcomes .....	4
1.2 Key words.....	4
1.3 Estimated seat time .....	4
1.4 Glossary of terms.....	4
2. Title of the Module .....	5
3. Assessment .....	13
3.1 Knowledge assessment.....	14
3.2 Skills assessment .....	16
4. References .....	16



# 1. Introduction

Digital Transformation of Tourism is a practice that has been implemented by various cultural and tourism bodies around the world. The COVID-19 pandemic has accelerated this shift towards digital solutions, but at the same time it has created a large gap in knowledge and practice as many were not ready for it. While innovation is essential in digital technologies, being aware of current practices and trends will allow you to implement tried and tested solutions, as well as improve existing ones. Therefore, in this section, we will discuss existing actions & initiatives to go digital.

## 1.1 Learning Outcomes

**After completing this module, you will be able to:**

- Identify and analyse existing practices and trends in the digital transformation of Tourism.
- Identify potential gaps and improvements on existing practices.

## 1.2 Key words

**Current practices, best-practices, trends, existing actions, status quo**

## 1.3 Estimated seat time

**1 hour**

## 1.4 Glossary of terms

- **Best practices:** It refers to current practices that through trial and error, research, and consensus are considered the best in terms of achieving a specific outcome
- **Augmented reality:** It refers to the use of technological means (such as headsets and holograms) to add digital assets to an physical space. For example, adding digital depictions of ancient people in a heritage site.
- **Virtual reality:** It refers to the creation of an entire virtual space, that people can either view or actively explore, usually through the use of headsets or special screens.
- **Artificial Intelligence:** The use of code-based intelligence, capable of communication, problem solving, and potentially real-time learning
- **Sharing Economy:** It refers to the economy based around renting or otherwise offering one's property (e.g. house, care etc.) to travelers.



## 2. Digital Transformation of Tourism: Existing actions & initiatives to go digital

### Virtual reality Initiatives

The commonly accepted definition for VR is the use of computer-generated 3D environment, that the user can navigate and interact with. More specifically, the three key elements that characterize VR are:

1. Visualization, where the user has the ability to look around
2. Immersion, suspension of belief and physical representation of objects
3. Interactivity, degree of control over the experience, usually achieved with sensors and an input device like joysticks or keyboards

Currently, one of the most active virtual world platforms is Second Life, an internet-based virtual world where avatars socialize, network and create their own virtual spaces. Founded in 2003, Second Life boasts 36 million residents with more than 1 million active users monthly (Linden Lab, 2013). In 10 years, transactions within the virtual world economy amounted to USD 3.2 billion (Linden Lab, 2013). The rise in popularity of virtual worlds has not gone unnoticed in the tourism industry with Sweden, Maldives, Estonia, Kazakhstan, Serbia, and Italy all having virtual embassies alongside hospitality organizations like Starwood, Hyatt, STA, and Crowne Plaza in the Second Life virtual world (Huang et al., 2016). Actual tourism sites range from re-creations of Paris' Eiffel Tower and Arc de triomphe de l'E 'toile to Kenya's Maasai Mara villages which avatars can examine, walk around and interact with (Huang et al., 2016). This is interesting because acquiring land to set up things like embassies and virtual campuses in Second Life requires real money. Similar initiatives have began to pop up around the world, especially during the pandemic, with multiple museums and heritage sites providing virtual tours to guests from all around the world. VR allows for not only the transer of tourism and culture through the internet, but also the enhancement of it.





Little Santorini is a Second Life destination based off of the Greek Islands. The region is beautiful and immersive. You can walk on the volcanic sand beach with your lover or take a stroll through the markets as the locals sell their wares. You are able to rent authentic Greek-style homes whether you want to feel more like a local, or spoil yourself with a luxurious villa stay. There are plenty of other things to do such as scuba diving, visiting the hot springs, view from the lighthouse, cozy bonfire area, horseback riding, and taking pictures with donkeys, the list goes on!

Captured image from: <https://secondlife.com/destination/little-santorini>

One of the main entities in the Virtual Reality market is YouVisit (<https://www.youvisit.com/>), which provides virtual tours to museums and other facilities, including colleges. Using 360 image-capturing technology, the platform is able to provide a full view of all environments explored. Youvisit and other similar platforms saw a great deal of funding and increase in traffic during the pandemic, when people were unable to travel. Following the same principle, more and more heritage and cultural sites have implemented some form of virtual reality aspect to their services. A gap in current practices is the monetization of these initiatives. While some are offered only upon payment, there is still a lack of in-depth monetization analysis in VR. Specifically, there is room for additional revenue with virtual-only shows, advertising during VR tours, as well as digital assets that can be used in online Avatars (such as the ones in SecondLife). The "Freemium" concept seems to be the most effective business

model – providing free access but paid extra services and assets.



While not yet related to tourism, Facebook's Metaverse (Meta) is projected to be the largest virtual reality environment created, and will most likely give the opportunity to the tourism and heritage sectors to provide services and reach a wider audience through the platform. (Evans, 2015)

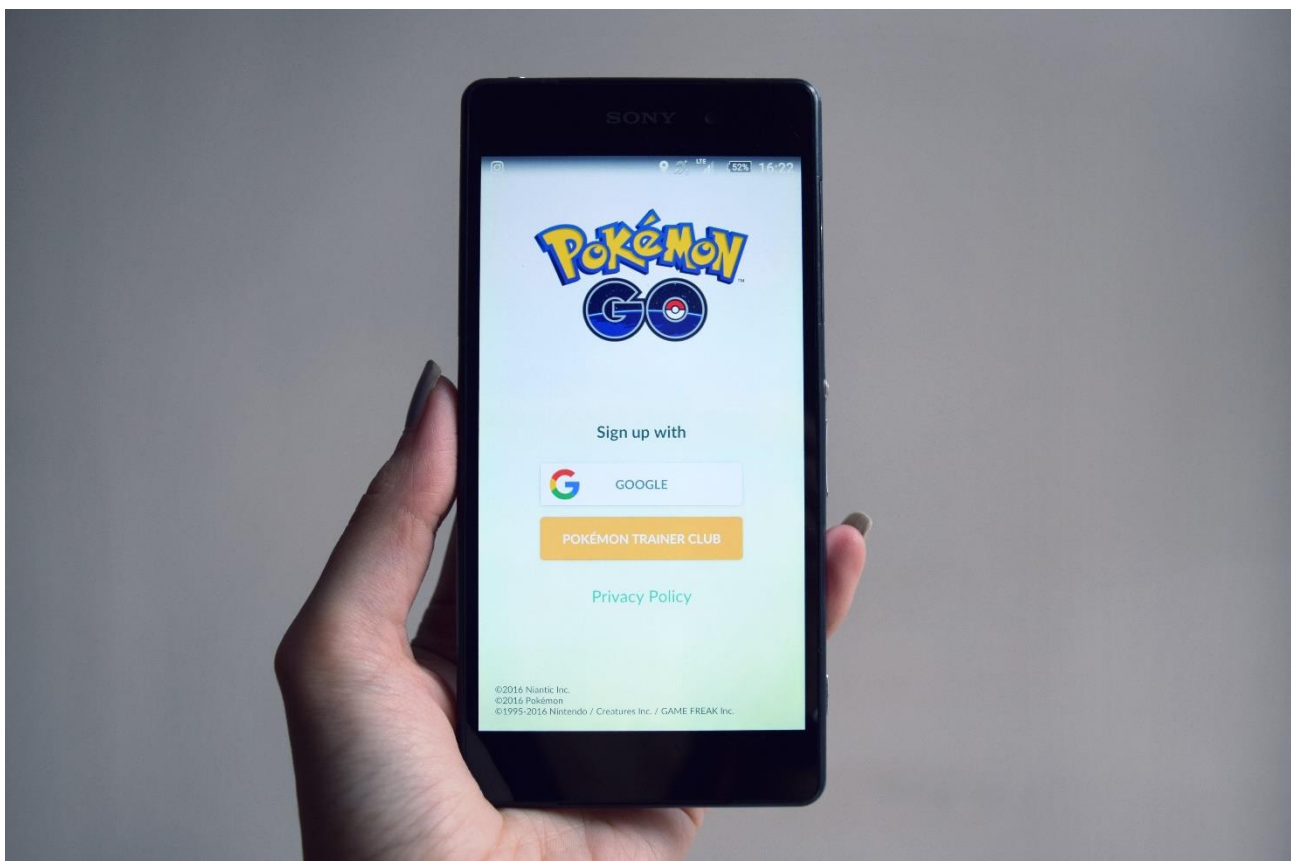
## Augmented Reality Initiatives

AR can generally be defined as the enhancement of a real-world environment using layers of computer-generated images through a device. With AR, a large majority of what the user sees is still the real world whereas with VR, the user is fully immersed into a virtual environment. Recent advancements in mobile computing have led to the development and increase of AR applications in tourism where the geolocation capabilities of mobile devices translate well into providing users with context-sensitive information on their immediate surroundings. An example is mTrip (<https://www.mtrip.com/>), a travel-focused smartphone application that integrates AR into their city guides. Using the smartphone camera viewfinder, information such as directions or ratings of attractions is overlaid on the display and changes based on what the phone is pointed towards.



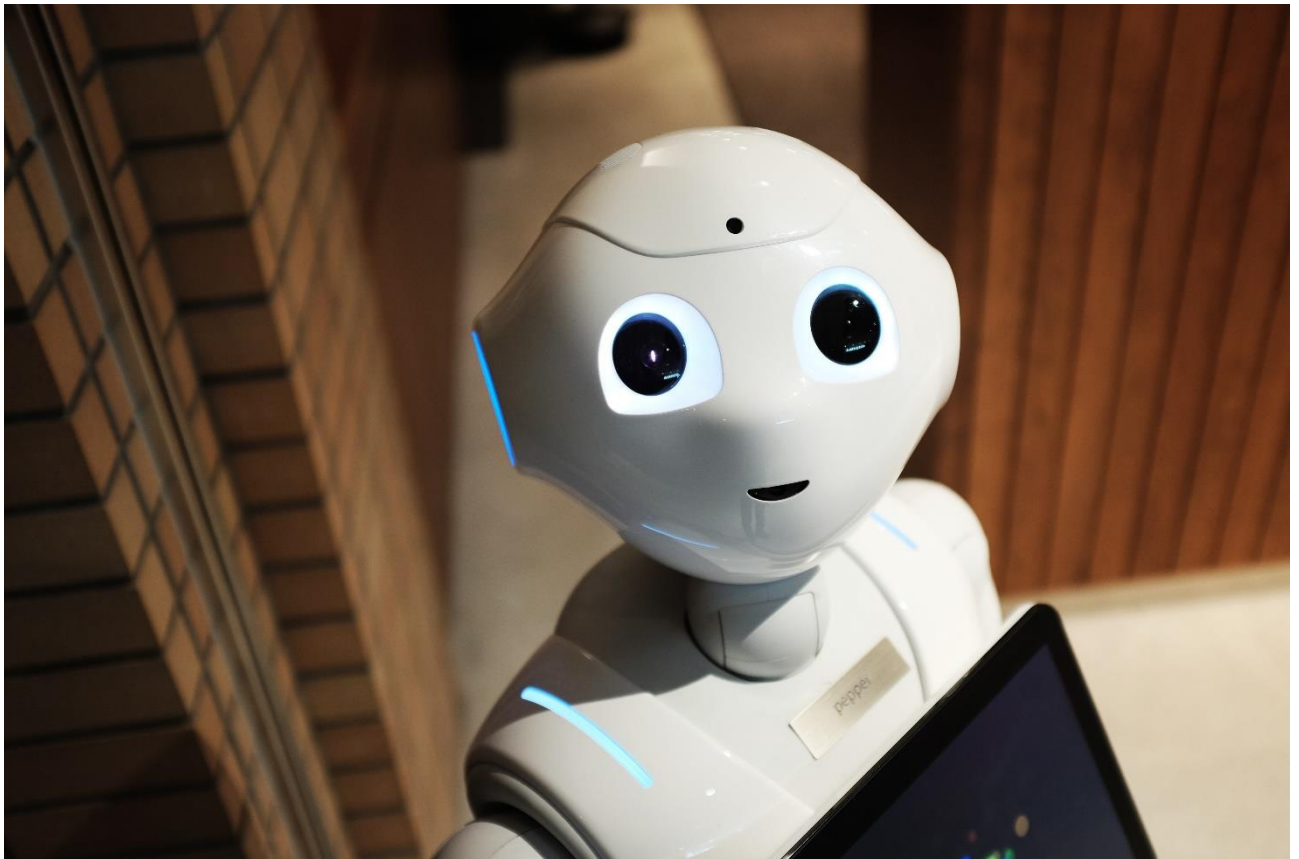


Augmented reality was widely popularized by the mobile application PokemonGO, with similar applications appearing afterwards in similar themes. But how is PokemonGO related to tourism? Many tourist destinations advertised rare pokemon present in their vicinities to attract tourists. Locations with rare pokemon also passively became more attractive to thousands of locals suddenly choosing them for as their destination for a walk or a coffee. Opportunities such as these showcase the untapped potential of augmented reality as a way to increase an environment's value by adding digital assets to it. (Woods, 2021)



## Artificial Intelligence Initiatives

Artificial Intelligence (AI) has been a driving force behind the digitization of tourism. Often regarded as a potential threat to human workers in the industry, it's important to understand what the applications of AI are and how they can be integrated into the tourism sector without inhibiting people's access to it. One major reason why reskilling is essential is that AI will increasingly take over base-level jobs, requiring higher expertise from humans to be competitive.



AI has already been implemented in a variety of touristic settings:



- **A Robot-Staffed Hotel**–The Henn-na Hotel in Nagasaki, Japan, is recognized as the world's first hotel with robots, using robots at the reception, as customer information and storage points, using voice, face recognition and AI technology. The world's first robotic staff hotel to open in Japan, near Nagasaki. The owner of the hotel, Hideo Savada, called it “Hennna Hotel”; In Japanese, “The Strange Hotel”;
- **Connie, Hilton's Robot Concierge.** Hilton have implemented the Connie Robot, an artificially intelligent concierge developed in collaboration with IBM. Connie is able to communicate with visitors using speech recognition technology to answer their queries.
- **A Staff-less restaurant in Beijing**–in 2018 robotic, staff-less restaurant in Beijing opens for the first time in the world with robot chefs and waiters is open. Haidilao International Holding Ltd. owns a hot pot restaurant chain and partnered with Panasonic Corporation<sup>101</sup>to create the automated eatery. Haidilao plans to expand to 5000 locations around the world in the future.
- **Travelmate:** A Robotic Suitcase is one of the most innovative applications of robots in the travel industry is Travelmate: a robotic suitcase. The suitcase was able to trace its owner alone, using technology for collision avoidance and can rotate up to 360 degrees, etc.
- **Robot Assistants for Hotels and Airports**–hotel robotic assistants fundamentally change the experience of tourists which can ask these assistants questions, find information, and even make them perform key tasks, such as room service, for example. Many of these robotic assistants are also able to understand and communicate in many languages.
- **Robots in Travel Agencies**–the other area in which robots are experimenting is with travel agencies, especially as a means of entertaining customers in busy times.
- **Chatbots for Flight or Hotel Bookings.** Online bookings made revolution in tourism, now chatbots have the same application. One particularly good

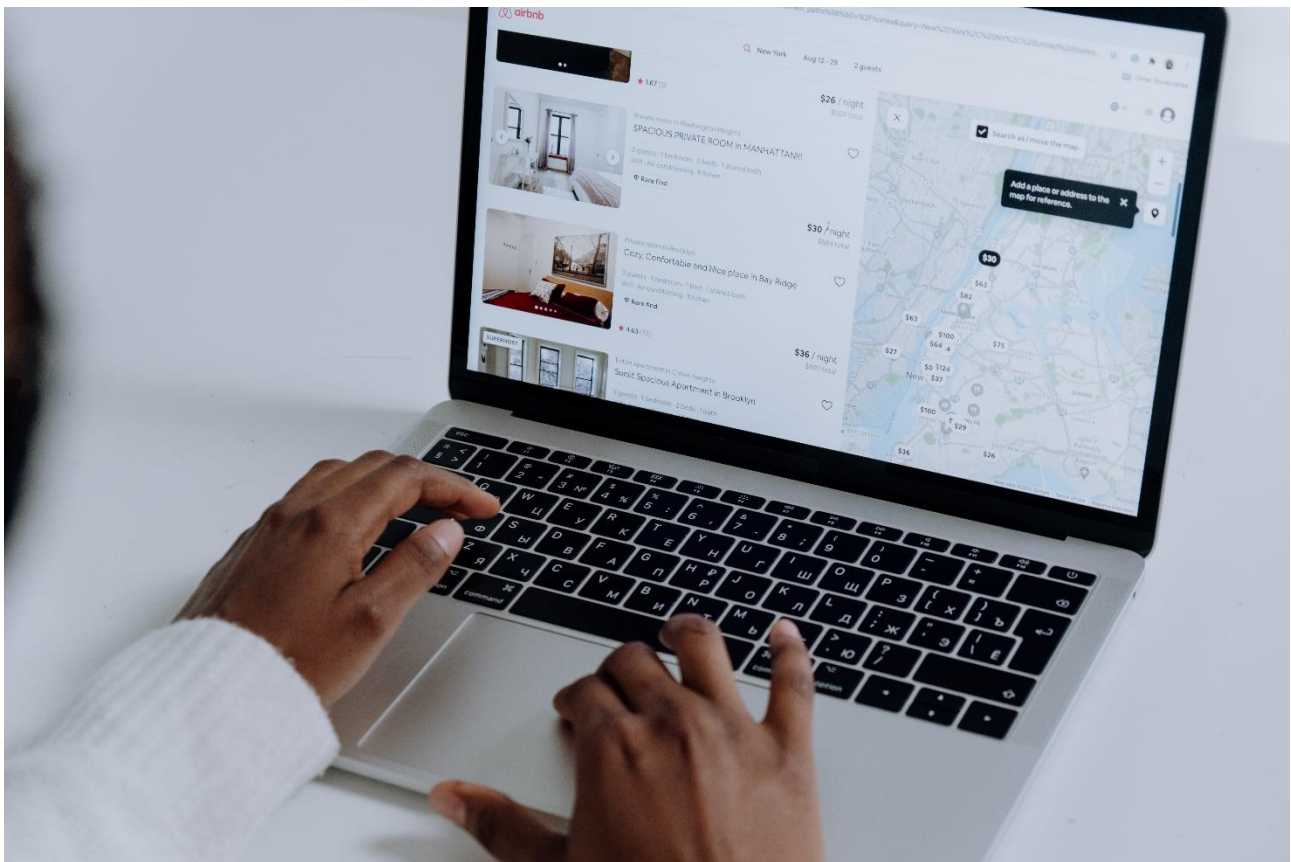


example of this is SnatchBot booking travel template, which uses AI to guide customers through the booking process by asking smart questions and using the answers to provide tailored suggestions.

## Sharing Platforms

The "Sharing" sharing economy is changing the tourism industry. Tourism services have traditionally been provided by businesses such as hotels or tour operators recently, a growing number of individuals are proposing to share temporarily with tourists what they own. For example, their house or car. This type of sharing is referred to as the 'sharing economy'. There is a boom in the tourism industry as travel becomes more affordable and affordable in the long run. Much of this revenue comes from tourism-related sectors, in particular the accommodation and transportation sectors. Airbnb and Uber are the two dominant forces behind the sharing economy. The basic idea behind Airbnb is not new: it helps those who want to provide short-term rentals to get in touch with those who want to rent these spaces. The innovation of Airbnb is the removal of the in-between contact, or rather the replacement of it. As a digital platform it connects the two parties without the need for "middle-men", which cuts down on time and expenses. Airbnb has made travelling more affordable and easy for millions of people, with over 5,000,000 active listings and over 150,000,000 users. (Zervas, 2017)





As of 2019, Uber is estimated to have 110 million worldwide users, as it has expanded not only in transportation, but also delivery of food. Uber identified a need in the market – the high price of transportation, especially using taxis – and disrupted it.

It's important to note that both these platforms have been met with massive backlash from traditional stakeholders – namely hotels and taxi companies – which is a general trend with every disruptor. It is therefore important to note that any ideas or innovations will be met with opposition from the people that actively lose revenue due to it.

## 2.1 Knowledge assessment

Quiz-like assessment based on the main content. Please mark the correct answer with bold when required. Include 10 questions for your module. Increase gradually the level of difficulty.

(bold is correct, light is wrong)

**Question 1** Heritage sites and hotels designed in Virtual Reality worlds can be monetized for real-world money:

**True**

False

**Question 2** Augmented reality can enhance real-world environments with physical additions such as props, actors and robots

True

**False**

**Question 3:** Virtual Reality still has a lot of room for monetization

True

**False**

**Question 4:** Sharing economy platforms usually remove which part of the transaction process:

**[the in-between person or business]**

[the person/business offering a product or service]

[the need for direct contact with the person/business]

**Question 5 (multiple answers correct):** Augmented reality allows a tourist destination to:

**[increase its value through added digital assets]**

[provide tours and shows to people not located in the area]

[provide tailored services to tourists]

**[enhance their existing assets digitally]**

**Question 6 (multiple answers correct):** Virtual Reality environments and tours:

[provide a passive experience to the user]

[are free of charge to use]

**[can provide digital products and consumables to users, such as clothes, houses etc. with real-world value]**

**[can host digital copies of heritage sites that avatars can explore]**



**Question 7 (multiple answers correct): Artificial Intelligence can currently work in:**  
[Flying Planes to tourist destinations]  
[repairing and maintaining heritage sites]  
[Providing room service]  
[Baggage transportation]

**Question 8 (matching):**

**Best practices:** It refers to current practices that through trial and error, research, and consensus are considered the best in terms of achieving a specific outcome

**Augmented reality:** It refers to the use of technological means (such as headsets and holograms) to add digital assets to an physical space. For example, adding digital depictions of ancient people in a heritage site.

**Virtual reality:** It refers to the creation of an entire virtual space, that people can either view or actively explore, usually through the use of headsets or special screens.

**Artificial Intelligence:** The use of code-based intelligence, capable of communication, problem solving, and potentially real-time learning

**Sharing Economy:** It refers to the economy based around renting or otherwise offering one's property (e.g. house, care etc.) to travelers.

**Question 9 (matching): Match the concepts with their explanations.**

**Staffless restaurant:** A facility where all or the vast majority of jobs are performed by artificial intelligence

**Virtual Embassy:** The digital representative of a country, present in a VR world

**Immersion:** The suspension of disbelief in any virtual or augmented reality environment, making the user feel like what they are seeing is real.

**Industry Disruptor:** A company or innovation that greatly changes the way something works, to the point where the whole landscape of the industry or space changes fundamentally.

**Chatbot:** An AI capable of communicating and analyzing acquired information to tailor advice, suggestions and give answers to questions

**Question 10 (matching): Match the problems with their solutions.**

**Mobility restrictions:** Development of Virtual Reality tours and environments simulating real destinations

**Lack of significant physical assets in a destination:** Addition of digital assets through Augmented Reality platforms

**Lack of monetization capabilities for VR:** Development of virtual-only shows, advertising during VR tours, as well as digital assets that can be used in online

Avatars



## AI taking an increasing amount of jobs: Reskilling of tourism workers to increase competence and employability

Online booking leaves the burden of searching to the consumer: Create AI chatbots, capable of analyzing given information and tailoring suggestions

## 2.2 Skills assessment

There is a vast amount of different existing initiatives in terms of digitization. An important aspect to keep in mind is that just because something has already been done doesn't mean it's not innovative to do it again. Think of all the things we discussed in this module. Then think of how many of these things are available in your country and/or area.

For this assessment, try to identify an example of each of the following, as well as the current state of tourism in these areas, in your country:

1. Augmented Reality Initiatives
2. Virtual Reality Initiatives
3. Sharing Platforms
4. Artificial Intelligence

Once you have done this, try to identify whether there are gaps that you could potentially fill with existing initiatives happening in other places around the world. You can use the information in this module, or search for your own initiatives.

## 3. References

1. Evans, D. (2015). *The Internet of Things: How the Next Evolution of the Internet Is Changing Everything*, San Jose, California.
2. Huang, Y.-C., Backman, K. F., Backman, S. J., & Chang, L. L. (2016). Exploring the implications of virtual reality technology in tourism marketing: An integrated research framework. *International Journal of Tourism Research*, 18(2), 116–128. doi:10.1002/jtr.2038
3. Linden Lab. (2013). Infographic: 10 years of second life. Retrieved from <https://www.lindenlab.com/releases/infographic-10-years-of-second-life>
4. Woods, O. (2021). Experiencing the unfamiliar through mobile gameplay: Pokémon go as augmented tourism. *Area*, 53(1), 183-190.
5. Zervas, G., Proserpio, D., & Byers, J. W. (2017). The rise of the sharing economy: Estimating the impact of Airbnb on the hotel industry. *Journal of marketing research*, 54(5), 687-705.

