The background of the entire page is a complex, abstract pattern. It consists of numerous thin, light-grey lines that are tangled and looped together, creating a web-like texture. Scattered throughout this network are various small, solid geometric shapes, including circles, squares, triangles, and hexagons, in shades of grey. Some of these shapes resemble icons for technology, such as a lightbulb, a gear, and a speech bubble. The overall effect is one of dynamic, interconnectedness.

# The Impact of Disruptive Technology on Queensland's Tourism

## **Contributors:**

Amanda NeSmith  
Chunran Meng  
Erny Silalahi  
Jie Wu  
Lianqui Liu  
Tiantian Liu  
Yong Tang  
Zhihang Lin



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# 01 Executive Summary

The University of Queensland's Tour7040 subject was commissioned to provide recommendations for the Queensland Department of Tourism, Major Events, Small Businesses, and the Commonwealth Games (DTESB) in regard to policy impacts due to disruptive technologies and the collaborative economy on tourism. The project was conducted between August and October 2017. The project team consisted of eight students currently completing their Masters of Hotel, Tourism, & Event Management at the University of Queensland.

The project team conducted desk based research into the known impacts and actions Airbnb and other collaborative economy operations. Empirical research was also conducted to supplement the literature review, focusing on Airbnb host and visitor experiences in Australia. Ten interviews with hosts and 86 survey responses from visitors were collected during this period.

The research identified a number of key themes that DTESB should consider in regards to the evolution of Airbnb in the Australian context as well as the possible implications for other collaborative economy players.

- **Safety and security.** Airbnb hosts do not always have appropriate knowledge about necessary levels of requirements for safety and security of their properties. There are also concerns about whether there is sufficient regulation and training for Experience hosts. Providing training and certificates for Airbnb Accommodation and Experience hosts will ensure proper safety precautions and minimise the chance of potential issues.
- **Permits and regulation of large residential properties.** Many communities are impacted by increased numbers of Airbnb properties in their area. Neighbourhood disturbances are caused through the increased tourist traffic and local residents are concerned with safety and security. Hosts also believe that further research is required for larger properties and apartments and whether there should be required for high use or large accommodation dwellings.
- **Tax and the cash economy.** There is a perception that some of the hosts are not paying the same amount of tax or that there are additional tax burdens for Airbnb hosts. We recommend that state and federal government collaborates with Airbnb to collect tax on behalf of hosts.
- **Industry gaps.** There are a number of weaknesses in the accommodation approach provided by Airbnb that could be used to encourage local business to partner with Airbnb hosts to fill the market gap.

Three future disruptive technology areas were also explored to provide additional tourism insights: autonomous cars, drones, and virtual reality. In the upcoming years, the DTESB should keep track of these technologies to understand their full potential.



# 02 Overview

## Purpose

This report can inform the Queensland government about the impact of the Airbnb on current tourism and identified future scenarios based on known trends. Our research provides insights into opportunities and challenges for tourism in Queensland and highlights areas for policy focus. This work will also aid tourism businesses in Queensland by identifying successful strategies applied to the sharing economy in other jurisdictions.

## Scope

The research was focused on two components: current impacts of the collaborative economy on tourism and the impact of future disruptive technologies including opportunities and challenges. Airbnb was used as a case study for exploring and identifying current issues in the tourism industry and possible policy implications. Primary and secondary research was conducted to understand the motivations of guests and hosts use of the Airbnb service and the economic impact of the technology. The second component of the research explored future disruptive technologies that will have an impact on the tourism industry in Queensland.

## Methodology

The research in this study required collection of both existing data (secondary) and the collection of new data (empirical). We utilised both qualitative and quantitative data collection methods. The methods included:

- Literature review
- Airbnb Host Interviews
- Airbnb Guest Survey.
- Analysis of Data

## Limitations

Due to the limited time frame and access to resources, our research and data is limited. For the interviews, we experienced difficulty in contacting hosts over the Airbnb messaging system, which resulted in limiting the number of hosts to interview. We distributed the survey through our personal networks, which limited data to leisure tourists rather than a mix of business and leisure accommodation users.



# 03 Background

## 3.1 Queensland tourism performance

As the second-largest and third-most-populous state in Australia, Queensland, the Sunshine State, has 14 unique and captivating destinations which are truly like no other place on earth (Tourism and Events Queensland, 2007). It is recognized worldwide for its international cities, sunny beaches, rugged outback locations and friendly residents. With the abundant natural resources, Queensland has become a famous tourism destination.

Tourism is vital to Queensland's overall economic prosperity. It is the State's second largest export industry and "a source of employment for hundreds of thousands of workers and a key driver of growth in the economy." (Tourism Research Australia, 2016). According to Tourism and Events Queensland (TEQ), tourism is a \$25 billion industry for Queensland, which supports 225,000 Queensland jobs, and 52,200 businesses. For the year ending June 2017, the total overnight visitor expenditure in Queensland reached \$20.6 billion, with \$5.2 billion spent by international visitors and \$15.4 billion spent by domestic overnight visitors. (Tourism Research Australia, 2017)

The coming decade will bring enormous opportunities for the Queensland tourism industry. According to TEQ, rapid growth in Asian countries, especially China and India, means the Asian middle class will grow from around 500 million to 3.2 billion by 2030 (Tourism and Events Queensland, 2017). With the increasing wealth and favorable economic conditions, Asian tourism to Australia is growing at an unprecedented rate. Other key target markets such as the United States of America and Canada are also experiencing double-digit growth.

Queensland's tourism industry operates in a highly competitive national and international environment. Internationally, more than 190 national tourism organisations are competing for international visitors. While domestically, Queensland has two main competitors which are Victoria and New South Wales. At the same time, the changing technology and visitor expectations of tourism and events products, are challenging Queensland's tourism industry.

Under such circumstances, to build the resilience and competitiveness of Australia's tourism industry and grow its economic contribution The Queensland Government has renewed its focus on innovation, addressing digital assets and advanced technology in marketing and many other areas. In the Tourism 2020 Strategy, building a competitive digital capacity is identified as one of the six strategy areas (Tourism Australia, 2011).



## 3.2 The development of disruptive technology

In recent decades, the world has witnessed the rapid development of technology. In the tourism industry, all kinds of technology “has made most travelers around the world much-more technology-savvy” (UNWTO, 2011). As technology shapes the tourism industry, it creates both challenges and opportunities. “The combination of mobile devices, applications, big data and artificial intelligence is set to revolutionise the visitors experience” (LSE Consulting, 2016).

The term disruptive technology was introduced in the 1995 article, *Disruptive Technologies: Catching the Wave*. It was defined as “a term in the field of business administration which refers to an innovated technology that create a new target market and value network and eventually disrupts an existing market and value network, displacing established market leading firms, products, and alliances” (Bower & Christensen, 1995).

One of the most common disruptive technologies related to the tourism accommodation sector is Airbnb, a platform which allows ordinary people to rent out their residences as tourist accommodation. The Airbnb platform has grown rapidly and disrupts the existing accommodation market by offering alternative benefits which over time can transfer and capture mainstream consumers (Guttentag, 2015).

# 04 Airbnb Accommodation

## 4.1 Current situation

Airbnb, as the most prominent representative of the development of sharing economy in recent years, is an online platform for people to lease or rent short-term accommodation, including apartments, hotel rooms, hostel beds, villas, even castles all over the world (The Economist, 2013).

The company was founded in 2008, and is based in San Francisco, California, and has more than 3,000,000 listings in over 65,000 cities and 191 countries (Airbnb, 2017a).



Unlike the traditional accommodation providers, Airbnb does not own any lodgings, it receives commissions (service fees) from both guests and hosts for each booking. In 2015-16, Airbnb hosts in Australia catered for approximately 2.1 million guests for 3.7 million nights, and supported 14,000 jobs and \$1.6 billion in GDP. Moreover, guests rated the Airbnb listings across Australia at 4.7 out of 5 (Deloitte, 2017a). In terms of the Queensland, 343,800 Airbnb guests spent \$331 million, and supported 2,115 jobs and \$217 million in GSP in 2015-16 (Deloitte, 2017b).

As a disruptive product, Airbnb is transforming the market by offering the online platform to ordinary people who can lease or rent their lodging for tourists. Moreover, it performs distinct benefits which are potentially cheaper and more convenient than traditional dominant companies (Guttentag, 2013). However, although Airbnb is becoming increasingly popular, it is still illegal in many jurisdictions due to the regulation of short-term rentals (Gottlieb, 2013). Specifically, the Queensland government has confirmed the potential value of holiday and short-term rentals, and issued the provisions for all types of temporary accommodation and its potential impacts on the immediate neighborhood (Brisbane City Council, 2017).





## 4.2 Impacts

### 4.2.1. Tourism impacts

Airbnb, as the most typical representative of the sharing economy, has created a ripple effect through the traditional hotel industry. Every apartment or house in the city is likely to become a competitor to traditional hotels, especially during the peak season when the prices of hotels are high. Among the traditional hotels, economy hotels can be seen as the most vulnerable to competition with Airbnb because of its similar prices with Airbnb. Competition directly leads to lower occupancy rates of economy hotels and the loss of their budget-conscious customers or leisure travelers in recent years (Guttentag, 2015). Nevertheless, business travelers are still loyal to the traditional hotels, because many prefer the standardised service, professional conference facilities and loyalty programs. (Grant, 2013; Mayock, 2013).

There are also many positive impacts to the traditional hotel industry due to the introduction of Airbnb. To compete with these housing sharing services, many traditional hotels have begun to innovate, causing further development (Guttentag, 2015). For example, a series of hotel chains have already introduced personalised services or new brands targeting leisure travelers. The Marriott partnered with IKEA to create a new economy chain hotel called Moxy in 2014 (HM Staff, 2014). The interesting and stylish room design, high-speed network and technological facilities of Moxy aims to attract young consumers who pursue new, modern styles. Moreover, many traditional hotels are using latest technological innovations to attract young, adventurous and tech-savvy travelers. For example, Marriott Hotel has launched a mobile application which assists customers to check-in by themselves; the customers in Starwood Hotel can also choose to use MobileKey <sup>1</sup> (Salvioni, 2016).

In terms of local events, these not only attract both domestic and international visitors, but also can offer iconic experiences and develop the tourism industry of the destination (Associated Press, 2012). Moreover, Airbnb hosts can recommend relevant events to guests, based on local knowledge. Airbnb has already cooperated with several large events in Australia, such as the Adelaide Fringe Festival and the Australian Masters Games (Deloitte, 2017a) providing additional services for its customers. Therefore, the Queensland Department of Tourism, Major Events, Small Businesses and the Commonwealth Games can also partner with Airbnb during larger events such as the Commonwealth Games, which may attract greater numbers of visitors but also decrease the accommodation pressure during such events.



## 4.2.2 Economic impacts

Airbnb, as a significant influencer on the economy, contributes to the local community, business, and the development of employment. (Yglesias, 2012).

According to Airbnb (2012) and Lawler (2012), 72 percent of cities' Airbnb accommodation is located outside of the central business area or traditional tourist districts. This use of additional accommodation options means that Airbnb benefits local communities through distributing travelers across cities. Orgill (2015) also shows that Airbnb guests spend more money on local businesses and stay longer than the traditional visitors, so they create extra development opportunities for local business without requiring new facilities or infrastructure in the city. In addition, through communication between the hosts and guests, visitors can be more connected with local communities. Travelers are also more likely to accept recommendations from their Airbnb hosts and then patronize surrounding stores, restaurants and cafés (Porges, 2013). Therefore, the areas outside the central districts can benefit from the visitors assisting local community and business (Guttentag, 2015).

According to Orgill (2015), 53 percent of Airbnb hosts report that the extra income earned from Airbnb can provide them with money to pay rent which helps them stay in their houses. Alternatively, a large number of people give up their full-time jobs to focus on Airbnb. This in turn provides further job opportunities for the unemployed (Fang et al., 2016).



Figure 1: (Tourism Research Australia, 2017).



### 4.2.3 Social impacts

Airbnb hosts enjoy numerous additional benefits in addition to increased income. Opportunities include cultural exchange and self-driven start-ups, such as opening a restaurant or operating a small hotel.

In terms of the cultural exchange, many hosts develop greater understanding of diverse cultures across the world (Lee, 2016). Guests also experience different cultures through the use of Airbnb due to local information and assistance from hosts. This attention assists guests and makes them feel that they are integrating into the community, which is reflected in their user experience, satisfaction level, and recommendations to others about Airbnb (Kim et al., 2015).

There are also negative impacts for Airbnb hosts, due to the change in neighborhood traffic. Additional noise due to guests causes disruptions in residential neighborhoods in which the accommodation is located (Horton, 2015). Safety as well can be a concern for the people who live near Airbnb accommodation. Since Airbnb can bring in a wide variety of guests all around the year, it can be hard for neighbors to identify expected visitors, causing fear and distrust due to the large number of strangers that stay in their community (Gurran & Phibbs, 2017). In response, Airbnb has launched a new function called Airbnb Neighbors, which allows neighbors to leave comments about the various problems of Airbnb hosts and guests. This will assist neighbors in reporting and dealing with noise and safety issues due to Airbnb accommodation.



# 05 Airbnb Experiences

## 5.1 Current situation

Airbnb Experiences was originally released in November 2016. It features local experts who have already joined Airbnb to provide tours or immersive classes to visitors. The experiences broadly include sports, arts, foods, nature etc. Hosts can offer guests experiences, such as one day to multiple-day workshops, cooking classes or shopping trips. However, currently Airbnb Experiences are only offered in select cities in Australia (Airbnb experiences is available only in New South Wales, not in Queensland) (Airbnb, 2017b).

## 5.2 Impacts

The traditional tourism industry is facing a huge challenge which is created by the new tourism platform Airbnb Experiences. This change is impacting travel agencies, existing tourism products and tour operator services (Wang et al., 2016). In 2016, Airbnb took a further step to the already successful accommodation services, by creating a new lifestyle brand, which offers local experiences instead of just lodging services through the new Trips platform. It includes homes, experiences, places, flights and services, these five aspects can provide more sophisticated services for tourists (Deloitte, 2017a).

When looking at the tourism industry, Airbnb Experiences can be seen as something that attracts new travelers to a destination, such as backpackers as well as new tourists who were not interested in the destinations before (Fang et al., 2016). Moreover, Airbnb Experiences can offer in-depth tours of the destination, which can make travelling more personalized and special. Due to Airbnb Experiences still being relatively new, it is widely regarded as a market which has a lot of potential in the future to impact the tourism industry greatly (Deloitte, 2017a).



## 06 Airbnb Future

In the past few years, Airbnb has had a huge impact on the traditional accommodation industry, and it is clear that innovative ideas like Airbnb may have already changed the way that the industry works. The success of Airbnb confirms that once the accommodation market has changed, it is highly unlikely that the industry would reconstitute to its old model (Varma et al., 2016).

Airbnb is still improving its service in a number of aspects. For example, Airbnb could expand services beyond accommodation in the next few years, to areas such as car or meal sharing. There is a great deal of potential for Airbnb and even the sharing economy in general over the coming years (Pad, 2015).

In the future, Airbnb may see further emulation, such as branded apartment rentals, as well as the use of Airbnb as an additional sales channel (Oskam & Boswijk, 2016). Meanwhile, the development of networked hotels will have to be supervised, especially successful enterprises in the commercial market. These new operating models are an important early warning for a further erosion of traditional hotel brands (Oskam & Boswijk, 2016).

Airbnb offers an interesting and innovative alternative to the traditional accommodation industry (Varma et al., 2016). However, the growth of Airbnb negatively affects the revenue of local hotels, especially economy hotels (Zervas et al., 2016). Therefore, to attract more guests, hotels need to work harder to be competitive, and may be more dependent on conference and event bookings than before (Pad, 2015).



# 07 Research Approach

To complement the existing research on Airbnb, the project conducted in-depth qualitative interviews with Airbnb hosts and a quantitative survey with Airbnb visitors.

To understand the attitudes, issues and behavior of Airbnb hosts we interviewed 10 current Airbnb hosts within Queensland. The interviews were conducted over a two-week period during August 2017 and were either face-to-face, over the phone, or on the internet, and lasted between 15 to 30 minutes.

**The aim of the interviews were to:**

- understand host profiles
- to understand how hosts operate and manage their properties
- explore the motivations of the Airbnb hosts
- identify the problems of being Airbnb host, and their viewpoints towards government regulations
- determine hosts' expectations and suggestions for improvements regarding Airbnb

To understand the motivations of visitors and their use of Airbnb, we conducted a brief online survey. Initially, the survey was created to determine differences in leisure and business guest requirements. Guests were invited to participate in the survey through social media channels and through the project team's personal networks. However, due to the convenience sampling approach there is a bias in the responses towards leisure rather than business accommodation services.

# 08 Research Findings

## Demographic information

Airbnb hosts' ages were predominantly between 25-28 and 38-63 years old. Hosts often had full-time jobs as well as conducting Airbnb business during their spare time. Many were also self-employed or had part-time jobs. Most Airbnb hosts had been involved in renting accommodation for approximately one year, the longest being three years.

86 Airbnb guests responded to the online survey. Of these, only 10.4% percent were business travelers (77 leisure guests, 9 business guests). This sample may be representative of the overall use of Airbnb however due to the sampling method we are unable to validate this. 76.7% of the respondents were female, with the most common age being 18-25 (61.6%). 68.6% of the survey sample were from countries outside of Australia, with China being the most common (35 respondents). 60.2% of guests were found to be students, with the next highest being employed at 32.26%.

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## Perceived advantages of Airbnb

When looking at the advantages of using Airbnb we discussed this from both the point of view of the hosts and for the guests that stay in their properties.

### Airbnb rental prices are cheaper than hotels.

The affordable prices of Airbnb allow guests to save on accommodation and spend more on other things.

*"The guests love Airbnb, the money they save on accommodation allows them to spend more on other things."*

### Local knowledge is important for guests.

Airbnb hosts usually provided valuable travel information, which enabled visitors to experience the city like a local.

*"When arriving at a new place, we [guests] can receive useful information from the host, about the city."*

### Airbnb provides an "at home" atmosphere.

Many Airbnb properties have lovely decorations, comfortable beds, and fully-equipped facilities. Guests can have the same experience while travelling abroad using Airbnb as they would from home.

*"They also like the home atmosphere, rather than the sterility of a hotel room."*

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## **Perceived disadvantages of Airbnb**

When looking at the disadvantages of using Airbnb we discussed this from both the point of view of the hosts and for the guests that stay in their properties.

### **Security issues**

Some hosts reported security as a major negative aspect of using Airbnb. Hosts must face the risk of property damage or theft. Security is also difficult as there is a stream of new people coming into a community.

As a peer-to-peer platform, Airbnb mainly target short-stay guests, but this can directly impose costs on neighbors. Many permanent residents reported that they are disturbed by noise and anti-social behaviors caused by short stay tenants. This situation is more acute in apartment complex because neighbors commonly share the ownership of public areas facilities such as swimming pools, gyms and lifts. Therefore, we recommend that the government should make the effort to control disruptions.

The government should encourage residents to report disturbances and sanction such as fines could be applied to the owners. This may encourage owners to screen guests and create accountability for the behaviors of tenants.

The government should also consider limiting the amount of consecutive days that a property can be rented. For example, in New York currently it is illegal to advertise an unoccupied apartment for more than 30 days. By limiting the amount of days for unoccupied places, then this could reduce the security and safety issues by not having as many guests moving through properties all the time and by not having guests be alone in properties without the host present (Anagnostellis, 2017).

### **Tax implications**

Many hosts were concerned with the amount of tax required for accommodation. A main motivation for hosts to list their property on Airbnb is extra income, and paying high taxes can take away from that money earned. There were also indications in the conversations that many hosts may not be fully compliant with tax obligations (Bianchi, 2016; McCauley, 2016)

In some locations, Airbnb have made agreements with government officials to collect and remit certain local taxes on behalf of hosts. In this context, the host will include the tax in the price they offer for the reservation. On the other hand, some may require the tax to be paid directly upon check-in. Thus, hosts need to explain any taxes they may be required to collect in their listing description and communicate this with guests prior to booking. The taxes vary and, depending on the local law, may include calculations based on a flat rate or percentage rate, the number of guests, number of nights, or property type booked (Airbnb, 2017c). The Australian government may wish to explore options with Airbnb in regard to tax collection on behalf of hosts.

Further research is recommended to understand the impact of a possible cash economy and the impact that this may have on competition with the traditional hotel industry.



## Regulation Issues

The law treats Airbnb differently depending on the location of the Airbnb rental. There are also issues amongst local government areas within states. For example, local councils in New South Wales regulate short-term holiday rentals. The zoning laws or Local Environmental Plan of a council determines whether an individual can let a property as a holiday rental (legalvision, 2017). Not only are council zoning laws complicated, but there is further complexity where tenants are subletting to others for short-term Airbnb stays.

There are also numerous other regulatory matters including: lack of regulation in areas of food, health and safety regulations; fire or disability access regulations; and the requirement for public liability insurance.

Options for regulation may also include the requirement for Airbnb hosts to obtain a permit when listing property through Airbnb. This may be an option for larger properties with more than four rooms. This idea is influenced by regulation that is occurring in Tasmania (Aird & Burgess, 2017). This would improve accountability for accommodation that may create disturbances with the local community, but would not impact smaller and less risky accommodation.

Apartments may require further regulation due to the impact of AirBnB on adjoining residents. Apartment owners who list on Airbnb must recognize the community environment and co-operate with other residents (Calderwood, 2017). Before renting an apartment through Airbnb, hosts should be required to obtain a permit from the government showing approval of the apartment board of their listing.

## Host issues with government regulation

Regulation was discussed as a deterrent for some Airbnb hosts. Some hosts mentioned the recent regulations with Uber, and if applied to Airbnb, may discourage people from being hosts.

Some hosts mentioned guest background checks. Airbnb currently lists host information on the website, but no information is revealed about guests. Issues with guests included, not returning house keys, theft, not following room requirements but also demanding refunds. If Airbnb provided background checks or rating system for guests, then issues such as these may be resolved.

*“Get involved in the sharing economy with Uber, similar software drives the two of them, in its intuitive mapping. Before regulation of Uber, there was some cowboy stuff (people were not professional in their approach) I may be wrong about that. Initially it was very easy for people to get into to Uber, not a lot of documentation was required, but now I would say that many people would be turned off by the regulations because of the number of documents required.”*

### Host perceptions

Most of the guests used the Airbnb accommodation mainly for leisure. Guests usually visited as families, couples or groups and saw the lower prices as the greatest advantage of Airbnb.

Hosts described three main reasons for listing their property on Airbnb: increased income, the ease of the leasing platform, and opportunities for cultural exchange

*The price is substantially lower than hotels, that's why Airbnb is so popular. My guests tell me they stay longer because the accommodation is affordable*

### Increased Income

Airbnb is a major revenue stream for many hosts. Most hosts conduct their Airbnb property as a business by utilising their unoccupied property as a resource. Hosts mentioned Airbnb as a great platform which enabled them to improve their occupancy rate and increased their income in comparison to normal subletting.

*"It brings in more money for the property then renting on a lease."*

### Platform ease

Some of the interviewees chose Airbnb instead of using real estate agents because they thought Airbnb was flexible and easier than traditional approaches. The overall procedure is simpler and hosts have full control over their property. One host stated that due to the variety of hosts and accommodation available, Airbnb can be different for every guest. This differentiates Airbnb from the hotel industry and is why guests book through Airbnb.

*"Airbnb has been successful because it has addressed a gap in the marketplace for people who like me who really don't like old same hotels, don't like them at all."*

### Cultural exchange

Airbnb enables hosts to meet travelers from all over the world and share their interests and stories. Hosts suggested opportunities for culture sharing and exchange can be achieved from leasing their homes.

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## **Guest perceptions**

Most respondents booked Airbnb as a couple (42.86%) or a group (40.36%).

Preferences for rooms included apartments (40.26%) and a general room (35.06%).

Approximately 50 per cent of guests spent an average of \$50-\$99 per night when staying with Airbnb.

Varma et al (2016) expressed that price, location and service are the key factors that determine a customer's final choice when choosing an Airbnb accommodation. Leisure guests also listed price (45.45%) and location (32.47%) as the two main influencing factors when choosing accommodation through Airbnb in our survey responses

When asked about issues with Airbnb hosts, 81% of respondents answered that they had never had an issue with a host. Of the 18.6% that reported issues, most regarded were in regards to the quality of the accommodation. In regards to extra services, 32% of respondents said they would pay for transport if it is was provided, while 30.4% said they would pay for food as well.

Currently there is a gap in Airbnb when compared to traditional hotels, and that lies in the service and products offered. There is a market here that can take advantage of this gap, and that is the local business.

Many Airbnb hosts are full-time employees, which makes it difficult to manage Airbnb properties. Meanwhile, compared to traditional hotels, Airbnb does not provide any extra services, which was found to be one of the main reasons that guests did not book through Airbnb.

As Airbnb grows, the new way of doing businesses is gaining popularity. The government can encourage business owners in the service industry to utilize their existing resources in providing services to Airbnb room owners, such as housekeeping, key deposit, or reception service in a coffee shop. These are in high demand among Airbnb room owners, and some owners may outsource the services to property management companies. In the end, Airbnb should serve as a promotional channel for Queensland tourism and contribute income directly to locals. This can improve many different sectors within the Queensland tourism industry, and promote small business development alongside accommodation.

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## **Airbnb Experiences**

Out of the 86 respondents to the survey, 80% had never used Airbnb Experiences, with 66% stating that they had never heard about Airbnb Experiences before. Airbnb Experiences is still relatively new and are only offered in NSW in Australia. Further, targeted research is required to determine perceptions of AirBnB Experiences.

Interviews revealed confusion with the hosts about the legality in regard to responsibility and accountability of AirBnB experiences.

Most Airbnb experience products involve activities such as kayaking and horse riding and experience hosts are specialists in one experience area. Therefore, the service quality and guests' safety are hard to ensure. We recommended that all experience hosts who operate their business in Australia should receive professional training and certification from the government in safety and skills depending of their experience to ensure the best and safest experience. Permits regarding areas such as food and beverage are required for experience hosts to operate their programs, which will also assist guest to build trust in AirBnB Experiences.

Airbnb Experiences may bring a whole new market of tourism to Queensland, and should be embraced by the government. By ensuring appropriate safety standards the government must take a pre-emptive approach to regulating to minimise potential health and safety issues.

# 09 Future Disruptive Technologies

While Airbnb currently is a huge part of the tourism industry, there are other future disruptive technologies that can have a huge impact on the industry. In this next section we focus on three future technologies: autonomous cars, virtual reality, and drones and how these will impact the tourism industry specifically within Queensland.

## 9.1 Autonomous Cars



Figure 2: Ford Autonomous Car (Howard, 2016).


Autonomous cars, also known as self-driving cars or driverless cars are vehicles that can navigate without the use of human interference (Gehrig, & Stein 1999). While autonomous cars have been in the news recently, the concept of autonomous cars has been around for many decades. Experiments have been conducted since the 1920's, with the first completely autonomous cars being developed in the 1980's by Carnegie Mellon's University Navlab. (Marshall & Davies, 2016).

Companies such as Tesla and Google are seen to be at the front of test driving with autonomous cars, with test locations all across the country and in different cities.

As of 2017, no fully autonomous cars have been allowed on the road and all cars still require a human in the driver seat who can take control of the car at any time. While these vehicles still require a driver, autonomous cars have already started to break into the tourism and transport industry in cities across the globe.

### **Current Development**

In the United States, autonomous cars are permitting in four states: California, Michigan, Nevada and Florida. Across the globe countries such as Belgium, the United Kingdom, France, and Italy have begun to plan for transport systems that include autonomous cars (Muller, 2012).



In 2016, Singapore launched a driverless taxi service as part of an ongoing trial with nuTonomy, which was the first of its kind around the globe, beating out top companies such as Uber to offer the service (Abdullah, 2016; Ministry of Transport., n.d.).

A few months after the Singapore test in 2016, in the city of Pittsburgh in the USA, Uber in partnership with Volvo released a pilot fleet of autonomous vehicles as part of a \$300 million-dollar project (Marshall & Davies, 2016). In March of this year, the service was halted for a few days, due to a vehicle being involved in an accident. Reports revealed that this was due to the other driver, so the service began again after Uber reviewed the incident (Moore, Blazina, & Smeltz, 2017).

In Phoenix, Arizona Google's self-driving car Waymo is currently about to release "a commercial ride-sharing service powered by self-driving vehicles with no human 'safety' drivers as soon as this fall." (Lee, 2017). While there are a few challenges, due to the cars still not be ready. Waymo is promising to have fully autonomous cars out in the very near future. With other companies promising cars in 2020 and 2021.

### **Tourism Industry Impact**

Autonomous cars are seen to be a huge opportunity for the tourism industry. Specifically, for those with limited mobility such as the elderly and the disabled, driverless vehicles would allow travel to places that are currently inaccessible to this part of the community.

Autonomous cars are also safer than traditional vehicles. In 2017, a new study from Intel and research firm Strategy Analytics looked at the future economic impact of autonomous cars. The study estimated that, *"more than a half a million lives would be saved between 2035 and 2045 because of the autonomous vehicles potential for greater safety. Public safety expenditures would be reduced by more than \$234 billion over the same period"* (Morris, 2016).

While there are many benefits for tourism due to autonomous cars, it is important to look at the impact it could potentially have on other industries. Examples of industries that could be impacted are insurance, parking, public transportation, deliveries, auto repairs, and more. (Barbier, 2017).

### **Impact on Queensland**

Queensland is a large state with limited infrastructure in certain areas. Autonomous cars would increase transport options between tourism sites, making commuting easier and providing greater access to attractions for tourists.

In regard to policy for the Queensland Government, the first stage would be to allow Autonomous Cars to be test driven in certain locations, similar to cities in the United States and around the globe. This could pave the way for the market to be fully introduced in the future. Once full safety certifications are approved, most likely in the next 5 years, Queensland could begin to fully introduce this to the market. By introducing vehicles to the state soon, they would allow the government to take advantage of the possibilities for the future in the transport area of tourism.



## 9.2 Virtual Reality

Virtual Reality, also called VR technology, is a computer technology that is combined with physical spaces or multi-projected environments to generate realistic images, sounds and other sensations that simulate a user's physical presence in a virtual or imagined environment. (Steuer, J. 1992).

VR technology offers many useful applications that would make tourism planning, management, marketing, entertainment, education, accessibility and heritage preservation more valuable. (Guttentag, 2010) With the VR technology, the user could observe and experience the items inside of the environment with no limit.

In regard to VR Sherman (2002) mentions that, "Understanding Virtual Reality arrives at a time when the technologies behind virtual reality have advanced to the point that it is possible to develop and deploy meaningful, productive virtual reality applications". Sherman also predicts the future trend of virtual reality. (Sherman, 2002).

Sherman (2002) discusses the five aspects of VR which are "less encumbrance, increased use of augmented reality, VR in the home, higher sensory fidelity and VR-ready machines". He claims that VR technology is available to almost everyone, no matter their budget or computer skills, and they can take trips to view the world faster, easier and at a lower price.

### **Tourism Industry Impact**


A report from the McKinsey Global Institute proposed an idea of future Airbnb growth from the Airbnb cofounder and CEO Brian Chesky. In this report, Brian Chesky mentions that AirBnB would love to create more and higher-level experiences for travelers, as well as memorable experiences for future customers (McKinsey Global Institute, 2014)

Among the most promising locations is Asia, which is a large potential market. It is also worth noting that, despite aiming at budget travelers looking for cheap accommodations in the first place, Airbnb wishes to extend its offer and expand it into the category of high-end experience for more wealthy travelers. Airbnb insists that they want to make the experience memorable for their future customers (McKinsey Global Institute, 2014).



Figure 3: Marriot plays with Virtual reality (Suciu, 2014).





Airbnb can see the potential for the use of VR in supporting and assisting guests when choosing accommodation. Most details on Airbnb display some pictures and few details of the accommodation. Customers have no chance to determine the room size, the view out of window, the facilities in the room and more details until they open the room they booked.

Most Airbnb hosts post take their accommodation photos by themselves, so when guests view rooms they often see very general images. The use of VR could change the traveler booking experience.

*To enhance the experience and motivation for guests, through the virtual reality technology, guests can visit the houses with host interaction with each other, walking and looking around, exploring the house while the host can introduce the house in more detail. This would provide rich opportunities to visitors exploring tourism destinations, and for the destination marketing organizations. (Huang, 2016)*

In 2015, the Atlantis hotel in Dubai began using Oculus rift technology that allowed the audience to view the hotel with a 360-degree panoramic from the website, as well as the hotel's activities (Rudnansky, 2015). Marriott hotel designed a new virtual reality technology which is called "Transporters", a virtual place like a telephone booth, that became a part of "Travel Brilliantly" program. Customers can step inside the glass, and then they are virtually transiting to "London or Hawaii". This travel simulation can imitate the traditional travel, create virtual tour, let potential customers fully experience a comfortable home environment, and authentic experience to reach the feeling of the tourism destination (Marriott Hotels, 2015).

Airbnb worked with Matterport to launch 3D virtual tour starting in 2016. This included a virtual 3D model of the listed properties, which could be viewed from the browser or virtual reality devices like Google Cardboard and Oculus Rift (Digital Era 360, 2016). Matterport was founded in 2011, and provided Airbnb with 3D photographs of the properties to then make 3D virtual tours of each of the properties. This concept may become a common feature on the web rental platforms, and has the potential to make a breakthrough for Airbnb's services. Since most hotels in Australia as well as Airbnb are not using VR technology as a norm, the first person using VR to display room details for guests would have significant advantages over the rest.

Virtual reality has also started to play a significant role in the marketing and tourism industry. Wan (2007), found that using virtual reality technology gave a greater experience of interaction between presentation (brochures and virtual experience) and the tourism destination (natural parks and theme parks) in regard to tourism. (CS Wan, 2007).

### **Impact on Queensland**

AirBnB and other accommodation providers may apply VR technology for accommodation booking to attract more guests. A huge appeal of Queensland is the natural landscape and wildlife that attracts tourists from all around the world. Virtual reality may also be a useful method to attract tourists in the next few years as it is an effective way to provide tailor-made service and memorable experience to guests.

## 9.3 Drones



Figure 4: (Drones & Tourism – Making Money in The Tourism Industry, n.d.).

Drones were first considered and only operated by the military. According to Schulzke (2017), drones are remotely piloted or autonomous proxy machines originally for human soldiers and manned vehicles, used to manage the risks associated with wars. However, nowadays, many global leading video production and marketing company use drones to help their clients to showcase their business.

The most common function of drones are to take an aerial videography of destinations and attractions which help the operator to save budget yet engage and compel their customers with a very high-quality video. Aerial views which are captured by drones are striking and often highlight an area, a remarkable site or a building in a dynamic way impossible to accomplish on foot.

### **Tourist Industry Impact**

Drones can be used to demonstrate the beauty of an attraction and is widely used in advertising and marketing to encourage visitors. Kakadu National Park in Northern Territory allowed the use of drones for the first time to footage their 20,000 square kilometer beauty as a part of a new tourism campaign to the world ([www.news.com.au](http://www.news.com.au), 2017). Travel by Drone, a popular website which users can upload drone videos of tourist destinations around the world, together with the increasing number of so-called drone tourist, people who travel with drones and taking aerial videos and pictures will surely lead to the more drone user-generated content area (Mancosu, 2016). In addition, drone tourism helps people who can't afford to travel, people with disabilities, and people who aren't able to get around by helping them to get a virtual travelling experience without actually visiting it.



## Impact on Queensland

The government in many countries are concerned with the impact and operation of drones. In the United States, national parks are a no-drone zone. This also includes National Monuments, National Battlefields, historic sites, coastlines and seashores, rivers and walking, biking and hiking trails ([www.quadcoptercloud.com](http://www.quadcoptercloud.com), 2016).

In Dubai, drones, introduced as Volocopter will be soon transporting passengers within their skyline. This new type of taxi will commence as an autonomous taxi which can fly its passengers by only clicking the selected destination through the application (Chaarani, 2017).

For Queensland, drones taxi may be an alternative in transporting people to destinations with limited accessibility. The use of drones in several areas in Queensland may be a sound alternative to the destruction of the environment required for an increase in necessary infrastructure. Moreover, Queensland has a huge potential in tourism yet to be discovered, from islands, beaches, mountains and rainforests. Thus, the increase in drone use may help promote potential of these hard to access sites, as well as support travelers when planning their trip to this region.

However, in Australia, there are different drone laws according to states in addition to Civil Aviation Safety Authority regulations which apply Australia-wide. New South Wales, Western Australia, and Victorian Government require recreational drone users to apply for a permit, while Tasmania and South Australia fine those who operating drones in their national parks (Ironsides, 2017.)



# 10 Future Research & Limitations

The project faced several obstacles in undertaking this research. Due to these factors our research has many limitations.

The study is limited by sample size. For the interviews, we experienced difficulty in contacting hosts over the Airbnb messaging system, thus limiting our number and range of possible host interviews. For the survey, our sample may be biased due to utilising our personal networks.

We acknowledge that results may not be fully representative of all hosts and guests of Airbnb. However, our results are notably consistent with those obtained in the more comprehensive studies related to the motivation, attitudes and the impact of Airbnb.

Due to the limited project time frame, we restricted our discussion to only three future disruptive technologies. It is important to note that there are many additional examples that could impact tourism in Queensland such as, robotics, artificial intelligence, as well as renewable and clean energy products (Prevett, 2016).

Additional research should be undertaken to explore and support the impacts on other governments policies both domestically and internationally. Due to limited resources, such information was often hard to obtain. Future projects should be conducted in cooperation with other governments to determine the impacts of disruptive technologies on other destinations.

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