Blockchain Technologies’ Influence on Hotel Bookings

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This research-based thesis is aimed to get an understanding of the topic of blockchain hotel bookings platforms and their impact on the hotel booking environment in the eyes of professionals that work in channel management or related area of work.

It is claimed by literature that blockchain booking platforms can replace intermediaries, especially Online Travel Agencies, by offering a similar booking environment without charging commission fees. However, it is often suggested that there is little to no space for new players in the online booking market. Therefore, the theoretical framework was designed based on the research question: Can blockchain technology remove intermediaries from the hotel booking process?

The thesis firstly informs the reader about blockchain technology, the current booking market as well as the diffusion of innovation theory. This was relevant since all three topics are either touched on in the interview questions or they are used to discuss the research topic later on in the thesis.

To research this subject, the qualitative research method was chosen and 11 semi-structured interviews with hotel channel professionals in different European countries and Jordan were conducted. This method was chosen to gain an insight from different angles. This also allowed the researcher to generalize the findings in the results and discussion section. The research and writing of this paper took place between December 2018 and April 2019.

The research came to the result that while blockchain hotel booking platforms could reduce commission fee payments for hotels significantly, it is unlikely that they will disrupt the hotel booking market soon since current players are too dominant. Especially OTAs and their parental firms exercises a lot of power over new players entering the market an may even buy up emerging new platforms. None the less, it should not be overseen that saving on commission costs would be a big benefit for hotels since as of today hotels are strongly affected by commission costs.

Keywords
Blockchain Hotel Booking Platforms, OTAs, Commission Fees, Hotel Booking Intermediaries, Hotel Booking Environment, Channel Management
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1 Introduction

“Chain keep us together” (Buckingham et al., 1977).

With this line Fleetwood Mac closed of their iconic song The Chain in 1977, not knowing that 40 years later technology would provide us with the blockchain system, to keep at least our digital data together. Today blockchain is one of the buzzwords in technology and goes far beyond cryptocurrencies like Bitcoin. It is said to have great potential to disrupt many industries including the hospitality world (Dogru, Mody and Leonardi, 2018). One of the spots where it is being implemented and strives to make a difference is the hotel room distribution (Baker, 2017).

Hotel room distribution today heavily relies on Online Travel Agencies (OTAs) and other intermediaries that charge hefty commission fees between 15-25% of a single room price. Their benefit is their wide exposure range compared to single hotel websites. This is also the main reason why hotels have difficulties to not cooperate with OTAs. To direct customers to their direct booking websites they have to allocate big marketing budgets (Ye, Yan and Wu, 2017).

Blockchain technology is said to have the potential to disrupt the intermediation of the hotel booking process by removing commission fees (Carlino, 2018).

Consequently, this points towards a possible new competition for OTAs that may be on the rise. Still, it is not clear how well this change will be accepted by the industry. Therefore, this results in an interesting research issue.

1.1 Objectives

There is little public knowledge about the influence of blockchain technology in the hotel booking process. Since the topic is quite new, little research has been done however, experts are convinced that blockchain has the potential to take over some traditional OTAs tasks.

The aim of this research is to obtain knowledge and insight about the theme by answering the following research question and its sub questions:

Can blockchain technology remove intermediaries from the hotel booking process?
a) How do hotel professionals see the future of blockchain in the hotel booking process?
b) Is blockchain a threat for traditional OTAs in the eyes of hotel professionals?
c) What is the situation in the current hotel booking environment?

In order to answer the questions above the researcher interviewed 11 people working on channel management in hotels. Thereby, the perspective on blockchain technology from the industry was targeted and assessed. Furthermore, theoretical research was conducted to clarify and validate results. While the reaction of the end customer certainly imposes a very interesting topic on its own, it was not taken in consideration when conducting this research.

1.2 Justification

Several blockchain based hotel booking platforms are currently under development or have just been launched. However, little is actually known about their benefits and the possibilities they bring to the hotel booking market. Due to its novelty, this theme is also not widely discussed or known of in the hotel industry. However, to determine if blockchain booking platforms are going to have a real chance to make a change in the hotel booking industry the supply side of hotels should be considered. Firstly, because it is of utter importance to see hotels acceptance of a new player in hotel distribution. Secondly, to find out if they believe in the promised benefits of blockchain booking platforms. Lastly, to see if they are aware of new players that are entering the hotel distribution market to change the playing field.

Moreover, the author is interested in the newest hotel distribution developments and has a personal interest in seeing how blockchain systems can influence hotels. Since blockchain is considered a buzzword in the last years, the author decided to concentrate on this fairly new theme. Furthermore, the author is interested if hotel professionals are aware of blockchain booking systems and if they believe them to be a threat to traditional intermediaries or if the booking environment is unchangeable by now.

1.3 Structure and Research Outline

The research concentrates on two main topics, one being blockchain hotel distribution and the second is current online hotel distribution channels. Therefore, the theoretical part of this paper is divided in three topics. The first main topic, which is online hotel room distribution, starts with a general overview before introducing some of the most popular intermediaries. In its closing, an outlook on the future of hotel room distribution is offered.
The second main topic is blockchain technology, focusing on the benefits and limitations of the aforementioned, as well as offering an overview over its current usage areas. Later blockchain hotel booking systems are introduced and discussed. The chapter closes with a short and comprehensive overview of hotels that are affiliated with blockchain booking systems. The last chapter of the theoretical framework is the diffusion of innovation theory, which is explained and the chapter ends with the barriers of adoption of innovations.

This is followed by the methodology chapter which explains and describes the choice for qualitative research. It refers to 11 interviews that were done with hotel professionals in six countries who explain their used distribution systems as well as personal opinions on blockchain hotel booking systems. A detailed outline of the interview conduction is given and followed by an explanation on how data was processed. The chapter closes with this research’s limitations.

In the results section of this thesis all results the researcher deemed interesting and applicable to answer the research questions are collected. This is followed by the discussion, which presents a fusion of literature and research outcomes and answers the research question and its sub-questions. The thesis is finalized with conclusion chapter which gives a short overview over the researcher’s findings.

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1.4 Definitions and Concepts

Commission fees: A flat percentage fee that is added on top of a goods price by an intermediary when an object is sold through them instead of the original seller (Loertscher and Niedermayer, 2007) or a percentage that is taken from each payment as a percentage of the amount payed or of the cumulative asset turnover by an intermediary (Tapia and Yermo, 2008).

Consensus Algorithm or Trust Protocol: The core of each blockchain in form of a mathematical protocol that keeps all nodes in a blockchain synchronised while reviewing and confirming or neglecting new information and distributing rewards to miners. It is based on rules, which ensure that all nodes unanimous accept one single data value even if there should be erroneous nodes (Lisk, 2019).

CRS: Central Reservation Systems are mainly used by hotel chains but there are also solutions for independent hotels available. It collects and further distributes all bookings
made via GDS and online booking channels. It additionally monitors and updates the hotel owned website and registers bookings made through it (Weber, 2012).

Cryptocurrency: A fully decentralised virtual or digital currency that is not regulated by any law or government, which is based on the digital ledger technology of blockchain allowing for low transaction cost and anonymity (Parashar and Rasiwala, 2019) while verifying transactions (Beaton, 2019).

Disintermediation: Providing the end consumer directly with a supplier or product instead of having a third party involved (Barmpa, 2017).

GDS: Global Distribution Systems provide information about price and availability from service providers to distributors. They can also be used to make reservations and service sales and originate in the airline industry, however today they are also used by hotels and car rentals (Radulovic, 2013).

Hash: A hash contains all information that is on the blockchain up to the point the hash is created which ensure the security of the technology and links back to all previous blocks in the chain (Lisk, 2019).

Node: Any electronic device with an IP address, that was willingly committed by their owner to support a blockchain by containing the copy of the blockchain and in a number of cases converting transactions (Lisk, 2019).

OTA: Online Travel Agencies are platforms, that do not own any hotels, however they host websites on which travellers can find price comparisons, discounts, hotel information and reviews. They are also selling hotel rooms and charge hotels a commission fee (Chang, Hsu and Lan 2019).

PMS: With a Property Management Systems, hoteliers can gather, store and manage reservations made through various channels as for example OTA, GDS and telephone. The systems also often include incorporated business intelligence tools which assemble and safe valuable information about customers and enable coordination amidst separate hotel departments since they contain records of important functions (Gulmez, Ajanovic and Karayun, 2015).

Public Key Cryptography, also Asymmetric Key Cryptography: Instead of only having one key to read an encrypted file, the blockchain uses a public key and a private key. While
the public key can be distributed to all participants allowing to send encrypted data to another specific person in the blockchain, only the person with the fitting private key can decrypt this information (Lisk, 2019).

Rate parity: Setting up all booking channels with the same rate structure (Nicolau and Sharma, 2019).
2 Online Hotel Room Distribution

Online hotel room distribution is an essential topic that concerns all hotels nowadays and includes several different distribution channels. This chapter is giving an overview of the most prominent channels and foreshadows how this area may develop in the future.

2.1 The Online Hotel Room Distribution Field

One of a hotelier’s biggest challenges are guest acquisition costs, however they vary per channel a guest uses to get in contact with a hotel (Batenic, 2018). Travel agencies made up the most accessible intermediaries in the hotel booking process until the internet became widely available. Since then several options of hotel booking are available to customers including Online Travel Agencies (OTAs) who also act as intermediaries, destination website bookings or specialised travel portals. Research shows that by now only few people book their travels offline, the majority is relying on online bookings (de Carlos, Araújo and Fraiz, 2016). In the perspective of hoteliers, the internet revolutionised hotel bookings by implementing customised marketing and a decrease in cost for the hotels. Nowadays hotels do not only need a well-structured website but a multi-layered online presence (Stangl, Inversini and Schegg, 2016). To achieve this, several technology layers are of importance, including OTAs, Channel Managers, Global Distribution Systems (GDS) and many more (Figure 5). They result in a multi layered distribution network (Appendix 1) (SnapShot Team, 2015).

Figure 1: Hotel-distribution channels (Modified, Choi and Kimes, 2002)

Likewise, booking an hotel room online bears many benefits compared to booking via a travel agent. This includes access to a wide range of photo and video material, detailed
descriptions of the hotel property and the fact that no additional booking costs for the guest are implemented (Lien et. al., 2015).

2.2 Online Travel Agencies

While OTAs (e.g. Expedia or Booking.com) do not own any hotels or airlines themselves (Chang, Hsu and Lan, 2019), they offer hotel rooms and flight tickets to consumers since the mid 1990s (Gazzoli, Gon Kim and Palakurthi, 2008). Their original aim was to distribute hotel rooms in times of low demands for hotels, however today they drive the majority of bookings (Red'ko, 2016). OTAs became successful by offering hotel rooms cheaper than the hotels offered them on their own channel. This price disparity was the cause for consumers to search the internet for the best available rate. While many hotels and OTAs agreed on rate parity, consumer behaviour did not change (Gazzoli, Gon Kim and Palakurthi, 2008). With only few major OTAs acting as suppliers confronted with a huge amount of demand, the market situation of an oligopoly arises (Oskam and Zandberg, 2016). Examples of travel companies owning multiple brands are Expedia Group, which own Expedia, Hotels.com, Trivago, HomeAway, Ebookers, CarRentals and many more (Expedia Group, 2019) and Ctrip.com International, Ltd. which owns Ctrip, Trip.com and Skyscanner (Trip.com, 2019; Skyscanner, 2016). Another major company is Booking Holdings, which owns the brands Booking.com, Kayak, Priceline, Agoda, Rental Cars, Open Table and many more (Booking Holdings, 2019).

According to a study done in 2014, Booking.com is the leading OTA with far more than 12 million visitors on average per month following, with far less visits, are Agoda.com, Myincentivetravel.com, Hotels.com, Airbnb.com and TripAdvisor.co.uk. Only then the first hotel websites Hilton.com and Marriot.com are listed. The websites are mostly found through three channels: search engine, direct access and subscription. Additionally, it was found out that 50% of the site visitors come from the United States (de Carlos, Araújo and Fraiz, 2016).

Hotels provide their information to an OTA, so that they can attract new customers. None the less, they get charged a commission fee per customer referred by an OTA (Chang, Hsu and Lan, 2019). These commission fees are generally between 10-30% of the hotels revenue for the booked room(s) (Eisen, 2018). Due to this, hotels hope that returning guests ultimately book on their own hotel website. So, while hotels cooperate with OTAs when acquiring customers, they do compete with them when it comes to returning customers (Chang, Hsu and Lan, 2019). This means, that many hotels make use of OTAs as sophisticated booking channels nowadays, which also from time to time work with the “billboard effect” eventually increasing direct bookings (Red'ko, 2016).
There are two OTA models, one can be called merchant model, in which OTAs purchase a certain hotel inventory and resell it packaged the way they want to, an example would be Expedia. Withal, this is an unpredictable and possibly costly model for the OTA. The other option is the so-called agency model, which allows for OTAs to merely list hotel inventory (Howe, 2017). An example would be Booking Holdings (Booking Holdings, 2019). Some OTAs also offer both models in combination which is deemed the most profitable variant for hotels (Ye, Yan and Wu, 2017).

Since OTAs often create masses of data and make use of data mining they have an advantage against hotels, as they make use of this data by creating personalised emails and loyalty programs (Stangl, Inversini and Schegg, 2016). Additionally, they punish hotels that disobey the rate parity by down listing their properties so that its harder for customers to find them (Howe, 2017). Travellers on the other hand enjoy the usage of OTAs because of their service quality and the perceived value of the booking service (Chang, Hsu and Lang, 2019) as well as the comfortability as it is working as a one-stop shop (Vinod, 2011).

2.3 Google in the Online Travel Market

While Google is currently known for being an advertising service for online travel players, many industry professionals are expecting the global player to make a move towards becoming an OTA. Rob Torres, the managing director of the travel sector of Google, denied this in spring 2018, pointing out that they instead want to further concentrate on being a better connector between online travel players and customers (O’Neill, 2018).

End of 2018, Google released a freshly designed version of Google Hotels Search in the US and other locations, which allows customers to check out hotels, rates and availabilities, while staying on Google. It also includes a book now button. This button leads to a selection of OTA websites and their prices. In some cases, if customers book through the book now button, they do not actually get transferred to the OTA, but instead manage their payment through their Google account while receiving the booking confirmation from the selected OTA (Schaal, 2018). Therefore, these developments are making Google even more dominant in the metasearch environment (Hamdi, 2019).
2.4 Global Distribution Systems and Switch Systems

GDS are technical electronical intermediaries between a hotel and a distributor (Fountoulaki, Leue and Jung, 2015). It is their task to provide information about price and availability from the providers to distributors as well as enable quick reservations and service sales. They are not only used for hotels but originate in the airline industry and are nowadays also used for car rentals and tour operators. Examples for GDSs are Amadeus, Sabre and Galileo (Radulovic, 2013). The information about rate and availability is transferred from the hotels Central Reservation System (CRS) to the GDS, either directly or via a Switch System (Choi and Kimes, 2002), however they run in the background and are not the main focus of hoteliers (Weber, 2012). Critics point out that to be able to make use of a GDS system hotels have to pay high set up fees, which makes it impossible for small independent hotels to be listed on them (HowToTokenTeam, 2018).

2.5 Hotel Metasearch

Hotel metasearch websites emerged online in the early 2000s and compare the price of one hotel on more than 200 websites. This is supposed to help customers find the cheapest price for the hotel they want to book (Starvok, 2018). Examples for hotel metasearch engines are Trivago and Kayak additionally, TripAdvisor supports a metasearch feature. The engines are aimed at a price sensitive customer base that migrates to book a hotel for the cheapest price, sometimes with widely unknown distributors (Earls, 2014). By today they often also offer a direct booking feature and some have striking similarities to OTAs (Medina and Hadwick, 2018).

A study in 2018 among 3000 Australians, Canadians, Britons and US Americans revealed that 94.4% used travel metasearch sites at least occasionally, with 43.6% always making use of metasearch engines. The primary age group for metasearch usage is defined between 25-34 years (Medina and Hadwick, 2018).

Metasearch sites pull their displayed rates from different websites online, as OTAs and hotel owned websites. They then display all prices but traditionally do not offer direct booking via their website. Their business is based on the pay-per-click model. Today, the best rankings on metasearch engines usually fall to the players that spend the most money on advertising, often this are OTAs (Mensak, 2018).

Critics point out that nowadays there are only three websites that are of importance for a customer namely, Booking.com, Expedia and the hotels own website. Moreover, since
there are usually price parity agreements hotel metasearch engines can be seen as redundant (Starvok, 2018).

2.6 Direct Hotel Bookings

Before OTAs became the main players in hotel room distribution, experts expected a dis-intermediation in the booking process caused by hotel owned websites. However, this prediction did prove false (Stangl, Inversini and Schegg, 2016) and in 2016, 27% of hotel rooms were booked on OTAs and increase was expected. Hotels are trying to counteract this movement towards OTA booking by offering exclusive member rates. These discounts can only be offered to loyalty program members because otherwise they would hurt the rate parity agreements. Examples for direct booking campaigns are #itpaystobookdirect by Marriot and Hilton’s “Stop Clicking Around” campaign (Howe, 2017). Big brands that entertain a loyalty program likewise try to generate more new sign ups to bind customers to book on their website so that they can receive loyalty points (Ting, 2016).

Most hotel websites are owned and managed by the hotels themselves or the parent company and are connected to a CRS, a GDS or a combination of both with an additional switch system to register new bookings and to derive prices. Each used system comes with a price for the hotel making up the cost (Choi and Kimes, 2002) which is margined at around 15 US Dollar per booking (Weber, 2012).

2.7 Channel Manager Software

While guests never interact with a channel manager, they are a tool for hotels which allows to distribute rooms and prices to different channels. When choosing a channel manager, it should be considered that the chosen system is compatible with inhouse systems, as the PMS and CRS. Additionally, the system should have a certified connection with the OTAs that the hotel wished to work with (Boss, 2017). With a channel manager, hotels can take care to not overbook their rooms and it can continuously update rates across most booking channels simultaneously. It also automatically ensures to update inventory routinely (SiteMinder, 2019a). One of the most prominent channel managers is SiteMinder next to MyAllocator by Cloudbeds, WuBook, Cubilis and Staah (Spasovska, 2019).

2.8 Distribution Behaviour

The online travel market has grown steadily in the past years. This is caused by tourists that are aware of the choices that are offered online and therefore become more demanding (Stangl, Inversini and Schegg, 2016). In fact when looking at online purchases in the
European Union, 53% are holiday and travel related (Confente and Vigolo, 2018). Furthermore, customers nowadays have a broader education about the travel market than any generation before them. Moreover, tourists expect lower rates online and enjoy that they can quickly compare prices (Stangl, Inversini and Schegg, 2016).

The emergence of the internet imposed two big changes to the customer behaviour. Firstly, the time of booking. Before online booking platforms were available, customers booked well in advance with lack of knowledge about availability and price. This changed and nowadays customers book through hedonic and utilitarian motivations, looking for the best priced room on OTAs. This also influence the value of travel products negatively, since booking choices are no longer made according to product offerings (Webb, 2016). Also, a segment of last-minute deal seeking tourists has developed that predominantly focuses on the price and that is able to anticipate price changes and use them to their advantage when booking (Chen and Schwartz, 2013). Secondly, customers shifted away from offline bookings and moved towards online platforms and mobile bookings on the go (Webb, 2016).

While customers generally developed to be more price sensitive, it can be said, that business travellers are more product oriented instead of price oriented, compared to leisure travellers. Another factor usually influencing consumers price sensitivity is how far in advance a room is booked (Chen and Schwartz, 2013).

Before even defining a travel destination, customers rely on search engines, preliminary Google, to get inspiration and later on to find the best hotel (SiteMinder, 2019b). While online bookings are more and more common in every generation, it is suggested that there are differences in booking behaviour depending on the age group of customers. Especially older customers often relying on the help of a referent to make use of the internet (Confente and Vigolo, 2018).

Since travel bookings are more expensive than many everyday purchases customers try to avoid risks by collecting information via websites and peer-to-peer review sites like TripAdvisor and Yelp. This serves to compare several service providers for quality and price (Gursoy, 2019). Confente and Vigolo (2018) discovered that when making a booking decision people rather rely on information from the internet instead of offline peer reviews.

A recent trend regarding online bookings is the increasing use of mobile phones instead of laptops and PCs. Additionally, it is seen that mobile apps are used more frequently compared to websites when it comes to hotel bookings (Wu and Law, 2018).
2.9 Future of Online Hotel Room Distribution

Sherri Kimes (2017) predicts that OTAs will continue to be a driving force in hotel room distribution. While she anticipates that larger hotel brands may be able to drive a big part of their sales through their own websites, she also emphasises that small hotels will continue to rely on some sort of middleman. This is in accordance with Batenic (2018) who points out that especially OTAs with lower commission fees could get the upper hand in hotel room distribution. Besides the aforementioned, he expects an increase in niche OTAs, as for example Yovada, that is purely wellness focused.

Gavira (2019) approaches the future for the airline/travel ecosystem in the western world on a more holistic scenario thinking, that offers four possible outcomes; 1. Tech giants own the game, 2. Airlines are the new mobility brand, 3. OTA’s become content brokers, 4. Fragmentation everywhere. More details can be seen in Figure 6. In accordance with the second scenario is the development of New Distribution Capability (NDC), which is a base for airline retailing. While the tool is only slowly adapted, it allows for richer data exchange between travel agents, GDS and airlines (Phocuswright Research, 2019). Thereby, airlines, carriers and sellers can sell, shop and book ancillary products and services on one platform (Fox, 2018).

![Figure 2: Scenario Matrix for Distribution (Modified, Gavira, 2019)](image)
One possible influence in online hotel bookings may be virtual assistants as for example Apples Siri, Amazon’s Alexa or Google Assistant. Sources say that they may be able to book hotel rooms in the close future (Gavira, 2019). This is backed up by Enelow (2017), however she also points out that more data is needed to accommodate voice recognition technology on metasearch websites.

Oskam and Zandberg (2016) agree that an increase in mobile online hotel bookings can be expected. They additionally discuss the possibility of the removal of rate parity, which in turn would make metasearch engines more popular. However, the authors believe that this won’t necessarily produce a level playing field. It is pointed out that the hotel booking market will experience commoditization with direct hotel bookings becoming rare in the future.

A research conducted by Amadeus expects a complete digitalisation of all customer touchpoint, which in turn would require booking engines to not only offer a room, but also give travellers the possibility to book spa appointments and choose their preferred dinner (Medawar, 2007).
3 Hotel Booking with Blockchain Technology

This chapter introduces blockchain technology and its uses for the hotel booking process by giving an insight in the technology and its usage areas. Moreover, some blockchain based hotel booking platforms are introduced.

3.1 Blockchain Technology

In 2008, a paper by Satoshi Nakamoto introduced blockchain technology and the most famous cryptocurrency Bitcoin (Vujičić, Jagodić and Randić, 2018). The technology is based on three concepts, namely, peer-to-peer networking, public key cryptography and transaction verification methodologies. It makes use of these technologies to create a log of information, as for example currency transactions, that are stored and shared on multiple nodes, also called blocks, in a network (Lee, Fiedler and Mautz, 2018). Blockchain technology was invented based on the concept of the "Merkel tree", a system that allows to send verified data from one computer system to another, ensuring that the data is correct. This is made possible by linking records to one another into a chain. Each node stores the information of all previous nodes as well as additional information which has to be accepted by all, or the majority of network participants to verify its accuracy (Figure 1). This can be done via an automated consensus algorithm (Filipova, 2018). Each block is then timestamped to establish that the block was correct when checked and transformed into a hash. This is called proof-of-work (Figure 2) (Vujičić, Jagodić and Randić, 2018). While a database cannot be accessed when the server fails or may contain damaged or corrupted data, blockchain technology ensures that even if there is a problem with one of its nodes the data is still accessible through all other nodes (Filipova, 2018). While this does not mean complete data security, it is a huge improvement to traditional data servers (Carlino, 2018). In essence, blockchain is a digital ledger that can virtually record anything of value creating a new database structure that is not owned by anyone (Combs, 2018). Through computation, storage and data resources it enables trust between business partners without involving a third party (Li, 2018).
Weber (2018) claims that blockchain technology can reduce all kinds of market friction significantly. Market friction includes everything that prevents the exchange of assets and all additional costs or delays such as taxes, bureaucracy, fraud, regulations, the involvement of intermediaries and many more. Examples for beneficial blockchain implications could be supply chains, commercial financing, the insurance industry or electronic medical records. This is in accordance with Subramanian (2018) who also points out that a decentralised marketplace ensures trust, security and privacy. It is also said that blockchain has the potential to change traditional business models significantly, however it is not proven if it can also ensure customers trust (Chafik, 2018). Tapscott (2018) supports the claim that blockchain makes it possible for people to put trust in one another without the need of an intermediary when looking at value transactions online.

While blockchain technology is often described as being able to remove intermediaries, this is not completely true according to Drescher (2017). Instead, he claims blockchain is
a digital and strictly rule following middleman that encodes trust. It also has to be considered, that for big blockchain application a huge amount of computing power is necessary. While in the beginning of Bitcoin the power of a stationary computer sufficed, nowadays whole data-warehouses are needed to support transactions on the blockchain (Die Blockchain-Revolution, 2019) which makes the environmental sustainability of the blockchain technology a controversial topic (Giungato et al., 2017). To put this in relation, in one month in 2017, roughly 5 quintillion 256-bit hashes were mined on the Bitcoin blockchain, which is said to need around 500 megawatts of power, enough to supply 325,000 homes (Fairley, 2017). An example for a computing mine would be the Lefdal Mine in Norway (Die Blockchain-Revolution, 2019), other mines are said to be located in China and countries that are said to have loose emission regulations or cheap energy prices (Fairley, 2017). This is also the reason why as of now blockchain is not usable for high frequency trade business (Li, 2018).

While the above seems promising it has to be said that according to a Chinese study only 8% of 80,000 blockchain projects are successful. Withal, the same article points out that there are positive project outcomes in blockchain technology that cannot be discarded, as for example the Australian and the Swiss stock exchanges that are working with blockchain technology in their securities processing (Schulz, 2018).

Furthermore, there are several technical limitations to the blockchain technology according to Drescher (2017) namely,

1. Lack of Privacy
2. The Security Model
3. Limited Scalability
4. High Costs
5. Hidden Centrality
6. Lack of Flexibility
7. Critical Size.

The author additionally mentions two non-technical limitations, being 1. Lack of Legal Acceptance and 2. Lack of User Acceptance.

The Ethereum blockchain was introduced by Vitalik Buterin and its intend is to address several limitations that can be found on the older bitcoin blockchain structure (Vujičić, Jagodić and Ranđić, 2018). Compared to other blockchain platforms, it provides the ability to generate so called “smart contracts” which allow to write up treaties, based on rights
and obligations. Due to a special algorithm this allows to implement applications on the blockchain (Brühl, 2017). This means that opposed to the bitcoin blockchain it is not limited to the use for a cryptocurrency. Potential areas of usage are token systems, financial derivatives, identity and reputation systems, file storage, insurance, cloud computing, prediction markets and many more. The most significant use of the Ethereum blockchain are decentralised apps, also called DApps. Next to its own cryptocurrency Ether, the platform is also suitable to issue different cryptocurrencies (Vuječić, Jagodić and Randić, 2018). The majority of blockchain hotel booking platforms is built on the Ethereum blockchain (Locktrip, 2018; Winding Tree, n.d.).

Cryptocurrencies aim to be a completely decentralised currencies, not being owned, managed or controlled by one single entity (Carlino, 2018). They can be described as peer-to-peer currencies allowing to trade without a third party, like a payment processor or a bank. Cryptocurrencies, as for example bitcoin, are based on a trust protocol which is set in place to ensure integrity for the exchanged data while avoiding to include a third party. Therefore, a trusted transaction is made between two or more parties being verified by mass collaboration instead of a corporate that is interested in profit (Tapscott and Tapscott, 2016). There are miscellaneous cryptocurrencies all based on similar concepts and anchored in blockchain technology. The oldest under them, bitcoin, lost significantly on worth in 2017, however today it is still multiplied by a factor of 25 compared to 2015. The interest in cryptocurrencies is also pursuit by central banks who indicated that they are interested in its development (Chafik, 2018). Withal, cryptocurrencies are not actual currencies, but rather withholding units that can be used for payments due to private decisions. Cryptocurrencies therefore rely on the integrity and safety of a decentralised network. The amount of a cryptocurrency is inherently limited by the system (Brühl, 2017).

When looking in the recent past it has to be noted that many cryptocurrencies lost significant worth or even failed. Additionally, it is said that out of 1500 cryptocurrencies every fifth is fraudulent according to the Wall Street Journal (Schulz, 2018). Critics also point out that the blockchain is used to transfer crypto money that was made through criminal encounters like drug dealing and weapon sales. Due to its mostly anonymous environment it is hard to follow these transactions (Die Blockchain-Revolution, 2019).

3.2 Use of Blockchain Technology

Already today there are many areas where blockchain is used. Examples would be healthcare, entertainment, social engagement, retail, exotic cars, supply chains and logistics, insurance, real estate, charity and financial services. And not only start-ups invest in blockchain but also big companies like Spotify and IBM (Marr, 2018).
An example for a blockchain based start-up would be OwlTing. The Taiwanese company has developed a program, that eliminates double hotel room bookings. Currently, the program is used by over 400 clients, registering real time inventory of the hotels. By today the company is profitable and invests in other Taiwanese blockchain start-ups (Bloomberg, 2018). The company DB Systel, which is parented by the German Deutsche Bahn, is also researching blockchains usage in the travel sector in cooperation with IBM (Ledger Insights, 2018). It is their aim to provide an app that would allow to book an entire travel including the train, taxi, hotel and flight at once. The idea is, that through blockchain technology each party stays profitable since they can check if their service was payed for on the blockchain. For consumers this would mean that the planning of a travel would be boiled down to only one provider (Die Blockchain-Revolution, 2019). This would allow travellers to book and pay an entire trip on one platform and the payment is correctly allocated to all companies, that are involved. Besides this, customers could benefit from only making use of one ticket, instead of several tickets for each leg of their trip (Ledger Insights, 2018).

Another big company starting a blockchain venture in 2019 is the credit card issuer American Express. They plan to improve their reward scheme with the integration of blockchain. This is enabling retailers to incentivise customers to buy a specific product by offering double, triple or ten times as many loyalty points as usually given for the purchase. While empowering retailers it also comes with more responsibility for them, since they have to enter their data in an API (Morris, 2019).

The gaming world is making use of blockchain with completely on blockchain based games as for example CryptoKitties. The aim of the game is to collect and breed special cats that account for tokens and can be converted in money. The more special newly bred cats are, the more they are worth. A cat’s DNA is determined by 50% of each parent’s DNA and the more breeding takes place, the more valuable the kittens become up to and above 100.000 EURO per digital cat (Fehrenbach, 2018). The website of the game makes sure that the player is aware that each cat they own is really theirs and unique, based on the blockchain they can’t be replicated, taken away or destroyed from the player. The cats are crypto collectibles, comparable to collectibles, that can be sold, exchanged or bought securely with their ownership 100% tracked via the Etherium blockchain. By now there are also several third-party games that can be connected to CryptoKitties (CryptoKitties, 2019).
GUTS is a ticketing service standing for fair event, theatre, sport and concert tickets assured by the blockchain. The Guaranteed Entrance Protocol secures the primary and secondary ticket market and ensures that there is no ticket fraud. Tickets that are traded via GUTS are registered on the blockchain and connected to a unique mobile phone number making deception impossible. Payment is made via euro so that you do not have to own any cryptocurrency to make a purchase (GUTS Tickets, 2019).

Overall, experts claim that while there is a big potential in blockchain applications the way to completely integrating it in the day-to-day life is still long. To achieve this, infrastructures need to be improved and the applications need to become more customer friendly (Die Blockchain-Revolution, 2019).

### 3.3 Blockchain Hotel Booking Systems

Blockchain offers a great opportunity to the hotel industry to remove intermediaries from the booking process. Currently intermediaries own the biggest part of the travel booking business, even though many campaigns promoting direct booking have been launched (Carlino, 2018). Implementing a blockchain based booking system would allow to completely or partially remove platform operators and create an environment similar to Airbnb, except without the company Airbnb (Chafik, 2018). To achieve a completely decentralised booking platform several hotel operators have to work together since a “blockchain for one” does not make a lot of sense. Instead through collaboration and the mutual desire to get rid of the middleman a blockchain based booking platform could help hotels in the long run to offer their own booking network (Sorrells, 2018a).

If a hotel’s transient inventory would be placed in a blockchain based marketplace instead, consumers could book rooms for a cheaper rate, since the peer to peer network would remove the intermediaries and thereby commissions and still be compared to other hotels on the same booking platform. Additionally, companies could use a distribution network that is not controlled by a single party (Carlino, 2018). Especially independent hotels will benefit from this in the long run, since they are usually more affected by commission payments than big chains (Norman, 2018). Nonetheless, according to Douglas Quinby it won’t be easy to make people come to a new booking platform different than booking.com and Expedia since major OTA’s invest huge amounts of money every year to attract customers. New start-ups won’t have the money to compete with them (Carlino, 2018). This is seconded by Brandau (2018) who emphasises that to make such a platform popular a lot of marketing budget must be allocated, to compete with OTA’s and it is unclear who would
pay it. Norman (2018) agrees that there are huge costs connected to a blockchain booking platform. To even list a hotel on a platform, hotels would need to hire professionals who know how to operate the platform.

When using a blockchain based booking system there are several benefits for both parties. They include for example identity verification. This would mean that when booking through the blockchain it would be possible to check the identity of the person that is booking and verifying it without having to do an external passport check. Moreover, secure payment and risk reduction are expected to be part of a blockchain hotel booking system (Tapscott and Tapscott, 2016).

Implementing a blockchain based booking system would allow to completely or partially remove platform operators and create an environment similar to Uber (Chafik, 2018). It is simple for a hotel to create a wallet or user account on a blockchain booking platform, the only thing required is a desktop computer or even a mobile phone, making blockchain accessible even for the smallest of properties (HowToTokenTeam, 2018).

However, while many people look at the benefits of blockchain technology for the hotel booking process, there are also critics. De Re points out that in his eyes blockchain technology is too immature to make a change in travel distribution any time soon and adds that he believes that the technology is not build for disintermediation at all and therefore does not have any added value for booking websites (Taylor, 2018). Another critic is Sheivachman (2018), who believes that many blockchain companies that are now emerging in the travel industry mainly work to sell their tokens and make their founders rich instead of creating a business case.

3.3.1 Locktrip

Locktrip is a commission free hotel and vacation rental market place, a decentralized open source booking system located in Bulgaria. This means that they can work as a booking platform without taking commissions, based on the Ethereum blockchain. Due to the underlying blockchain technology, hotels can offer their rooms on the website for 20% less and not affect their profits. Payment on the website is made through LOK Token, a crypto currency, limited to 18.6 million LOC, which is exchange listed (Locktrip, 2018).

Sheivachman (2018) criticized Locktrip specifically for its initial coin offering in which 50 percent of token offering was allocate to the team. This earned the owners 9 million dollars as of so far. Withal, Locktrip is pointed out be based on the Etherium blockchain,
which means that each transaction on this platform comes with a transaction fee and is considered slow (HowToTokenTeam, 2018).

### 3.3.2 Winding Tree

Winding Tree is according to Sheivachman (2018) the most reliable blockchain travel ecosystem. They started their business with an initial coin offering of their own Lif cryptocurrency to sponsor their open-source blockchain platform. They offer solutions online for suppliers, software vendors and travel sellers. It is their aim to make a fair platform for travel providers available, so that they don’t have to pay commission. Winding Tree incorporated is a non-profit private company with its travel distribution network build on the Ethereum platform that was founded in Switzerland. They do not charge suppliers commission fees. The aim of the platform is to offer a space where suppliers can easily be found by sellers who can instantly buy inventory using Lif (Winding Tree, n.d.). Their CEO, Maksim Izmaylov, uncovered that the company does not own the intellectual property behind the platform and that it is completely open source. It is their aim to create the infrastructure for future travel companies to use for free. However, it is also pointed out that they do not remove OTAs completely from the booking market, but instead create a more level playing field with more entities having a chance to develop (Carlino, 2018).

### 3.3.3 GOeureka

GOeureka is another commission free booking platform which is aiming to become an unbiased technology partner for hotels, giving them the possibility to be more flexible with pricing and not having to pay commissions. However, GOeureka is charging a 5% transaction fee for all credit card payments and for cryptocurrency payments. Only exception is when customers pay with GO tokens, the own cryptocurrency of the website. In this case no fees are attributed. One of their unique features is the re-booking function with which customers get the price difference to their booking back on their bank account if the hotel should change the room rate to a lower price. When making a booking on the Go platform, customers additionally get awarded Go Credits which they can then redeem for a discount in their next bookings. While GO token are a transferrable cryptocurrency, Go Credits can only be used within the website environment (GOeureka, 2018).

### 3.3.4 Atlas

Atlas is another blockchain based hotel distribution platform based on smart contracts. Its aim is to create a new smart travel ecosystem and has therefore partnered up with several hotel brands as Westin Hotels and Resorts, W Hotels, Hilton Hotels and Resorts, Hyatt, The Peninsula Hotels and many more. They also have many partners from the whole
travel industry including Finnair and Qatar airways. Atlas offers a zero-commission marketplace and their own cryptocurrency ATLS which can be used as means of payment on the website. Additionally, it is used as a reward for content creation which is evaluated by the website community. Atlas is located in China and currently concentrates mainly on the Asian market. Besides this they aim to give back customers the control over their own data which will be securely stored on the blockchain (Atlas, 2018). For 2019 they are planning to launch the Atlas DApp to enable user reviews and first bookings and announce more influential partners in their blockchain venture (Sorrells, 2018b).

3.3.5 BTU-Hotel

BTU-Hotel offers hotel booking features online build on the blockchain system. They work similar to a metasearch site displaying all available hotels and displaying their lowest rate from 110 websites. When you complete your booking through their website however, customers are guaranteed to receive back 5% of the price paid in form of tokens, which can later be switched into EUROs or gift cards (Sorrells, 2019). According to themselves they aim to offer a booking without or with limited middleman and offer fairer commissions for hotels (BTU, 2018).

3.4 Hotel Brands Looking into Blockchain

One of the investors into blockchain booking platforms and bypassing middleman like Expedia is the brand Nordic Choice Hotels. They hired Lisa Farrar and equipped her with a budget of 250 million Swedish Crowns to remove intermediaries from the hotel booking process. One of the innovations she chose to invest in is blockchain booking systems (Wallenberg, 2018). Nordic Choice Hotels are also partnering with Winding Tree and are offering rooms of their Swedish property HOBO on the beta version of the platform (Winding Tree, n. d.). They also point out that it is very important for the blockchain platform to not be owned by anyone, since if a big player is owning the platform it is less attractive for other hotels to join in (Sorrells, 2018c).

Ennismore founder Sharan Pasricha, who owns Hoxton Hotels and Gleneagles in Scotland, suggested to be looking in blockchain solutions back in May 2018. His aim is to bolster his business by using blockchain for their reservation system (Chains, 2018). Citizen M’s chief operating officer Michael Lewis, agrees that the hotel industry has to step up their technological game and needs to start becoming a technological pioneer for once. While, he is researching blockchain solutions for different parts in the hotel, mainly distribution, he also acknowledges the current limitations of the systems, being purpose, scale and affordability (DeChellis, 2018).
On the other hand, Law Harasymiw, who works for IHG does not believe that blockchain is the solution to revolutionise hotel distribution in the short run, he instead suggested to introduce the hotel industry to blockchain in smaller ventures. Avin Bala, from Four Season Hotels and Resorts points out that blockchain could have potential in the hospitality market. However, he puts emphasis on making sure that blockchain will be a cheaper distribution alternative and not just another booking channel (McCracken, 2018).
4 The Diffusion of Innovation Theory

The following chapter is devoted to the diffusion innovation theory, that explains how innovations are accepted after their introduction to the market. While the literature represented in this chapter is tailored at the consumer market, the contents can also be applied to Business to business market.

4.1 Diffusion of Innovation

One of the major issues in marketing and consumer behaviour is the consumer markets acceptance of new products and services (Schiffman, Kanuk and Hansen, 2012). Therefore, researchers make use of the diffusion of innovation theory, that was introduced by Rogers (Kaminski, 2011). Kaplan (2012) also suggests that positive surprise can be the initial trigger to make consumers interested in a product and while it may be hard to predict them, it’s simple to see them when they happen. However, it has to be considered that the diffusion of innovation theory always has a positive outlook in the adoption of innovations, ergo change/improvement is always good (Laukkonen, 2016).

The diffusion theory explains, how a product or service spreads through a market by communication to members of a social system over a period of time. Research has shown, that the relative advantage, compatibility, complexity, trialability and observability are the five product characteristics that influence the acceptance of innovations. A restriction to adoption of an innovation is, that if there are too many options, consumers cannot decide between the available choices (Schiffman, Kanuk and Hansen, 2012).

There are five adopter groups, that have to be taken in consideration, when looking at the diffusion of innovation theory for technology over time. Firstly, the innovators (2,5%), who are said to be adventuresome and risk takers and are motivated by being a change agent and peer educators. They usually adopt an innovation first. They are followed by the early adopters (13,5%), who usually are opinion leaders, trend setters and role models, who are excellent tester subjects to try an innovation on. The next group are the early majority (34%) who avoid risk and want to stay in budget, but can also serve as opinion leaders since they frequently interact with peers. They also need simple interfaces and trust colleagues in the same industry. This group is followed by the late majority (34%). This group is influenced by peer pressure and is often technology shy. Furthermore, they are said to be cautious, cost sensitive, plus, they require bullet prove solutions and rely on a single trusted advisor. They can also easily be influenced by the last adoption group are the laggards (16%). Laggards are suspicious of innovations and want to maintain the status quo. They adopt an innovation very late, and some may even never adopt to it at all.
mindset towards technology is very critical, only considering technology when all other options are worse. When introducing a new innovation, the goal should be, not to move consumers between the adoption groups, but to streamline the innovation according to the behaviour of all groups (Kaminski, 2011). It has to be taken in to account, that for most market innovations, not the whole market will adopt though, since the product or service will not be (perceived) as being superior to excising brands (Robertson, 1967). A visual explanation of this can also be found in the modelled bell-shaped curve, in Figure 3 (Meade and Islam, 2006).

Figure 5: Diffusion of Innovation Adopter Categories (Modified, Kaminski, 2011)

Additionally, there is also the cumulative adoption curve, which is a saturating S curve (Figure 4). This modelled curve shows the cumulative adoption of an innovation over a time period (Meade and Islam, 2006).

Figure 6: Diffusion of Innovation Cumulative Model (Modified, Rogers et al., 2005)
According to Rogers (2003), the make or break point of an innovation, is if the innovation reaches the point of critical mass adoption (Figure 3). This entails, that a certain number of consumers needs to make use of an innovation to become useable and therefore entice desire with the majority of consumers. The point of critical mass describes the moment when the further adoption of an innovations becomes self-sustaining.

There is no universally accepted definition of an innovation. Rather, there are different definitions depending if it is firm oriented, market oriented, product oriented or consumer oriented. The firm oriented definition of innovation entails every service or product, that is new to a firm, no matter if it is already used or produced in other companies. The market-oriented definition judges an innovation on the market exposure a service or product already experienced. The consumer-oriented definition on the other hand says a product or service is an innovation if it is new to the consumer and lastly, the product oriented definition deems a product or service an innovation if it is either a modified product that does not change established patterns, a new product that does not change established patterns or a new product that requires consumers to change their behaviour patterns (Schiffman, Kanuk and Hansen, 2012).

4.2 Communication Channels for the Innovation

Communication can be described as the process of sharing information between individuals to come to a mutual understanding of the same subject. Usually this entails a group of individuals that are informed about an innovation and a group of individuals that are not aware of the same. To facilitate this process, there are two sources of communication, being mass media and interpersonal and two channels, namely cosmopolitan and local channels (Rogers, 2003). Within this, word of mouth (WOM) is part of sharing information between influencing parties and receiving parties. Thereby a homophile behaviour can be observed, in which similar people have more contact with one another than with dissimilar individuals. However, when two similar people interact it is likely that both parties have the same knowledge, but if two very dissimilar individuals interact, the exposure to new ideas becomes more likely still, communication may be impaired (Yamamoto and Matsumura, 2009).

With the two communication channels, Rogers (2003) distinguishes between the differently used channels during the stages of persuading customers. Also, according to him a difference between earlier adopters vs. late adopters can be made. Mass media may be relatively more important at the knowledge stage, in which customers are exposed to the innovation. Compared to interpersonal channels, that are relatively superior in the persuasion stage, in which can be described as the process of forming an positive or negative
attitude towards the innovation. Furthermore, while cosmopolitan channels are relatively more important at the knowledge stage, local channels may be relatively more important in the persuasion stage.

The diffusion of innovation makes use the two-step flow of communication model, which is based on research that discovered, that individuals are mainly influenced by opinion leaders. It was also discovered, that opinion leaders are easier influenced by mass media, than other individuals. Therefore, a two-step flow of communication was discovered, While the opinion leaders were influenced by mass media, they handed down their newly influenced opinion personally to other individuals and thereby influenced them (Robertson, 1967).

4.3 The Decision Process

The decision process about an innovation starts with the knowledge stage, in which individuals learn about the existence of something new and start to develop an understanding of it. This is followed by the persuasion stage in which the same individual develops a positive or negative attitude towards said innovation, at this point active information search begins. The questions what happens if this innovation is adopted is tried to be answered through forward thinking. The following stage is the decision stage in which the innovation gets accepted or rejected, this often includes a small-scale trial. If the innovation does not allow for a trial, it is usually adopted less rapidly. This is followed by the implementation stage if the innovation was accepted. Individuals start to get involved with the innovation and this often entails behaviour changes. This stage finishes when the innovation becomes institutionalized as a regular part of the adopter’s life. However, this is not the last stage in the decision-making process. Rather, it is followed by the confirmation stage in which consumers who already adopted the innovation start revaluating it and it can happen that the accepting stage is reversed (Rogers 2003) (Appendix 2).

Panwar et al. (2019) presents a similar decision process model for consumer purchase decisions that follows the five steps; need, recognition and problem awareness; information search; evaluation of alternatives; purchase; satisfaction. While customers usually go through all these stages with purchases that require deliberation, when purchasing a product that is known to the customer some stages may be skipped. Additionally, scholars indicate that it is important to also consider consumer personality profiles in the decision-making process, since this could influence choice of brand loyalty, colours, preferred stores and other behaviour patterns (Brody and Cunningham, 1968).
While a consumer primarily may decide to adopt an innovation, dissonance may lead the same individual to discontinue the use of the innovation. For some innovations this is a rather high number. There are two types of discontinuation, namely replacement and disenchantment (Rogers, 2003), which occur if an innovation is not routinized (Rasmussen and Hall, 2016).

4.4 Barrier to Adoption

Little research is available on the inhibition of diffusion of innovation according to Laukkkanen (2016). The author defines innovation resistance as the act of resisting change that is induced by innovations. While this is little researched, many companies are confronted with failure of their products due to consumer resistance. While the adoption process is important, more can be learned from looking into adoption barriers.

The rejection of a product or service at a certain time is only given at that point of time and is not a negative characteristic of the consumer. Consumers may adopt a product after initial rejection (Laukknen, 2016). Reasons for resisting innovations can be big changes in consumers day to day life different to the satisfactory status quo when adopting the innovation or the innovation may be at odds with consumers believe structure. Furthermore, each previously introduced adopter group has an individual resistance to adopting technology innovations. While innovators themselves have close to no resistance of adoption, laggards are very resistant. Also, it can be divided between active and passive resistance and innovations that are attached to new technologies tend to provoke higher resistance than innovations based on excising technology (Ram and Sheth, 1989).

Plus, there are functional barriers to adopting an innovation, those are usage barriers, value barriers and the risk barrier. The usage barrier covers all discrepancies to the current workflow of individuals. The value barrier is based on the performance-to-price value of an innovation and lastly, the risk barrier is when customers postpone adopting an innovation until they can get more information about it. The two psychological barriers are the traditions barrier, as soon as an individual need to make changes to established traditions, and the image barrier, if the image of the innovation, its origin or brand is unfavourable, customer is less likely to adopt. Innovators should be aware of these risks to be able to counteract them (Ram and Sheth, 1989).
5 Research Methodology

To fulfil the objective of this thesis, which is to determine if blockchain booking platforms can influence intermediation in the hotel booking process seen by hotel professionals, the approach of a qualitative research will be chosen and carried out. The social research follows a deductive pattern, aiming to prove or to deny the research question (Gray, 2014).

5.1 Research Design

The research design was developed to answer the research questions and therefore can be described as deductive research, which means it is testing a theory rather than establishing a theory (de Vaus, 2001). Overall, the aim is to establish if the evidence can support the theoretical research question and its sub-questions which can be found below.

Can blockchain technology remove intermediaries from the hotel booking process?
   a) How do hotel professionals see the future of blockchain in the hotel booking process?
   b) Is blockchain a threat for traditional OTAs in the eyes of hotel professionals?
   c) What is the situation in the current hotel booking environment?

The approach of qualitative data collection was chosen due to its highly contextual nature and its connection to real life. During the research 11 professional that work in hotel channel management were interviewed. This allows to see how and why things are happening, compared to quantitative research that focusses on producing objective, valid and replicable results. On the contrary, a qualitative research includes people’s individual motivations, emotions, conflicts and prejudices (Gray, 2014).

Within qualitative research methodologies, this thesis makes use of the descriptive case study design, seeking to explore and describe the current state of blockchain booking platforms. The research concentrates on the time dimension of the now, meaning that a new research after some time passed may come to a different outcome. It is therefore a retro perspective approach and its aim is to capture the momentous situation in the hotel industry (de Vaus, 2001).

The use of semi-structures interviews was chosen because of the exploratory nature of the research. Furthermore, the semi-structure allows to probe for more detailed responses than when conducting a fully structured interview (Gray, 2014). This was important, since
the research question “Do hotel professionals believe that blockchain technology can remove intermediaries from the hotel booking process?” is highly personal. The following paragraphs describes the process and the design of the interviews.

5.2 Setting, Participants and Instrumentation

The interview participants were chosen by using a multiple purposive sampling technique including a combination of criterion, convenience and typical case sampling (Gray, 2014). The criterion was that each participant was working in a hotel when the interviews were conducted. Additionally, each interviewee had to be knowledgeable of the hotel booking process. There were several ways on how the interviewees were picked. Firstly, hotels in the cities Basel (Switzerland), Freiburg (Germany) and Breda (The Netherlands) were looked up on the blockchain booking platform Locktrip and contacted via email. In a second step, hotels in Stockholm (Sweden), Graz (Austria) and Helsinki (Finland) were found on the OTA Booking.com and also contacted via email. Finally, the last contact was established through a private connection in Jordan. All cities were chosen by the researcher. The interview sample includes chain operated hotels as well as privately operated hotels and a consultant, trying to create a typical case sample of hotel industry employees. Overall, around 140 hotels were contacted with 11 positive responses which gives a response rate of approximately 7.8%. Moreover, 8 declining responses were received with two noting that they are not aware of anything blockchain could do for the hotel booking world and two hotels stating that the interview data would be too private to share. The other rejections did not include a specific reason. Likewise, e-mails requesting interviews were send to five blockchain booking platforms, however none of them responded to the inquiries.

Table 1: Interviewees in Random Order

<table>
<thead>
<tr>
<th>Hotel</th>
<th>Location</th>
<th>Position of Interviewee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hotel Anna</td>
<td>Helsinki, Finland</td>
<td>General Manager</td>
</tr>
<tr>
<td>Airport Hotel Basel</td>
<td>Basel, Switzerland</td>
<td>Digital Marketing Manager</td>
</tr>
<tr>
<td>Lendhotel</td>
<td>Graz, Austria</td>
<td>Hotel Director</td>
</tr>
<tr>
<td>Private Consultant (E-commerce, Marketing and Revenue Management)</td>
<td>Stockholm, Sweden</td>
<td>Private Consultant</td>
</tr>
<tr>
<td>Nordic Choice Hotels Helsinki</td>
<td>Helsinki, Finland</td>
<td>Revenue Manager</td>
</tr>
<tr>
<td>Primehotel Katajanokka</td>
<td>Helsinki, Finland</td>
<td>Director of Revenue Management</td>
</tr>
</tbody>
</table>
The interview questions were developed based on literature research that can be found in Chapter 2-3 and were all aimed to aid the research question and its sub-questions. All interview questions can be found in the interview guide (Appendix 3). It can be divided in two parts, with question 1-11 specifically asking about the current hotels booking situation and the remaining questions aiming to shed insight in the interviewee’s opinion towards blockchain booking platforms and the use of such. Questions 14-18 were optional depending if the hotel already had contact with any kind of blockchain booking platform.

All interviews were conducted between the 26th February 2019 and the 1st April 2019 and took between 15min and 1.15hrs. Due to scheduling problems one of the interviews was completed in writing. Three interviews were completed in person and all remaining interviews were done via call. The majority of the interviews was held in English, however three interviews were held in German and later translated into English. The interview guide was sent to the participants in advance so that they were able to prepare for the interviews.

5.3 Procedure

The researcher looked up each hotel online before conducting the interview to gain a general knowledge about the property. No data was derived from this research, since the contents per hotel website vary widely and do not necessarily provide information about booking platforms used.

Each interview was started by a short informal talk with the interviewee in which the researcher thanked them for their time and explained the goal of the research. The questions were asked in the order they appear on the interview guide. If a question was already answered before being asked, the question was skipped. Participants had always the possibility to not comment on a certain subject if they felt not up to it. Each interview was recorded after getting verbal agreement of the interviewee. The recording was done with a mobile phone that produced MP3 files of each interview.
5.4 Data Processing and Analysing

Each interview was transcribed by the researcher to create a solid database for the research. The hotels are indexed randomly in the transcripts to ensure their integrity. From this point on they will be only mentioned with their index number which ranges between Respondent 1-11 (Flick, 2018). As soon as new data was collected it was coded, then the researcher moved on to collect more data and to code that data as well as suggested by Gray (2014).

The aim of the interview analysis was to compare statements regarding blockchain booking systems made by the different interviewees. Therefore, firstly an initial open coding was done to develop first important themes (Appendix 4). It was followed by a more detailed coding approach (Appendix 5) (Flick, 2018). The coding was of inductive nature, which allowed the researcher to keep an open mind about the outcomes of the interview analyses, instead of fitting the given answers into a predefined coding schemes, as done in a deductive analysis. Descriptive coding was used, so that patterns in the interviewee’s responses were detected. Data that was found to be useless or trivial was not coded, because of its lack of use to answer the research questions (Miles, Huberman and Saldaña, 2014). The interviews were then analysed for statements that referred to a certain code and gathered in a matrix (NHTV Academy of Hotel and Facility Management, 2017) which allows easy viewing and analysing of the data. Furthermore, it facilitates the cross-case analysis and allows to find fitting quotes for the results section of this paper (Miles, Huberman and Saldaña, 2014).

5.5 Ethical Implications

This thesis was not commissioned by any lobby or company and therefore does not represent a preconceived opinion. The participation in this study was voluntary for all respondents and they had the possibility to quit the study at any point of time. Each respondent was given a consent form that explained the interview procedure, as well as what their data would be used for. Additionally, they were asked to consent to being part of the study. They also signed that they understood that they could at all times leave the study and that direct quotes of them will be used in the final thesis. Three interviewees did agree orally to the points listed. Before the interview was recorded, the researcher asked the participants again if the recording of the interview was acceptable for them. All participants were given the opportunity to contact the researcher at any time, as well as to ask questions before and after the interview.
All results were carefully analysed, using the methods listed above to ensure the correctness and to make sure, that responses were not intentionally misinterpreted. Moreover, all facts that could give away who the interviewees are were removed from the original interview transcripts to ensure the interviewees anonymity.

5.6 Limitations

The interview request was distributed only to a small sample pool which may not be representative for European hotels, since the sample is limited to a small number of cities in a few countries. Therefore, a bigger sample would be necessary. Additionally, since the researcher did not have specific email addresses, many request emails had to be sent to generic hotel emails, which may not have been forwarded to potential interview partners.

Further, due to the novelty of the theme some hotels were not interested in participating in the thesis or did not understand the aim of the research. Additionally, due to the newness and continuous evolution of the theme there was not too much research available about blockchain booking platforms itself and therefore the researcher was not able validate if the claims made by the platforms are true. Correspondingly, most of the used literature sources were found online as press releases, articles, blogs and company websites instead of academical literature. It also needs to be highlighted, that since the researcher is not used to do professional translations, the interviews that were translated from German to English may not contain the same message as intended by the interviewee.
6 Results

The main themes that emerged from the interviews are; Hotel Booking Engines, the Hotel Market, Hotel Room Cost, Pricing and Commissions and lastly Blockchain. The following section will give a thorough analysis of the four main headings, which were all supported by several sub-codes. The words respondent, participant and interviewee are used interchangeably in this and the following sections.

6.1 Hotel Booking Engines

Ten of the eleven respondents pointed out, that they are listed on OTA websites, additionally eight mentioned that they are also listed on one or several GDSs. Four respondents also pointed out, that they are listed on several metasearch sites and two respondents said they make use of Flash-Sale websites. All hotel respondents confirmed to have the possibility of direct bookings through their website, with four hotels belonging to a chain that provides the website. The three OTAs, that were named most, by at least 5 respondents, are Booking.com, Expedia and HRS and the number of third-party online booking engines used varied between three and more than fourteen. One participant explained the choice of OTAs like this:

“HRS is clearly the business portal for us, where many cooperation are happening. Booking.com is partially business, partially general, but so to say the biggest booking intermediary in that form and Expedia in our experience comes third. We do not make use of other portals since their reach is not interesting enough, compared to these three portals and this so to say became crystal clear to us over the time,” (Respondent 11).

All respondents agreed that OTAs are dominant in the booking market and four pointed out the significant share that Booking.com is holding. Three respondents believed, that their dominance comes mainly from marketing power and four participants pointed out, that OTAs are beneficial to their hotel. Two out of those four said that while there are beneficial for bookings, they are also not good for the hotel’s revenue. An interviewee also emphasized that in his opinion the market share of OTAs is going down since they are undercutting their own commission when offering hotel rooms cheaper than on the hotels own website and another participant highlighted how much power OTAs have over hotels. Yet another participant said, that their hotel cannot sustain themselves without OTAs and one more interviewee emphasized, that the benefit of OTAs is that today they act as a one-stop-shop for consumers, where they can purchase a hotel room, flights, car rentals
and other services. Moreover, another interviewee said, that she believes that chain hotels have a bigger pull on OTAs, because they have bigger negotiating power in staff, money and room numbers.

"But now the OTAs are actually undermining their own commission, undercutting that one, to get more business to their website. So actually, hotel chains have managed to drive them a little bit more into a corner and our brand web works very well [...] and I know that [another brand] has a very excellent brand web that drives a lot of business to them," (Participant 9).

When asked about current hotel bookings, five hotels mentioned that they get their biggest share of bookings through OTAs, while three get their most bookings through direct on- and off-line channels. One hotel said their direct and their OTA bookings are almost the same. Furthermore, nine of the respondents stated that they wish to increase their share of direct bookings. Two other interviewees highlighted that in their opinion they would like to get a better balance of direct bookings vs. third party bookings. And one respondent addressed that direct bookings can be increased, when concentrating on the needs of guests and the reasons of their stay and putting focus on the guest experience. Another interviewee said, that the bookings depend on the customer group a hotel focuses on and that it is incremental for hotels to find a cost-effective solution so that hotels can establish a direct connection to guests.

"[...] of course, our focus is on boosting direct bookings. I mean, this is not a secret. Every single property in the world, in this market wants to have more direct bookings," (Respondent 1).

### 6.2 The Hotel Booking Market

In the majority of the interviews the topic of consumer behaviour was addressed in various ways. Three respondents pointed out that the customer journey is an incremental point to retain customers. One respondent addressed the topic that consumers today like to purchase travel packages and another respondent addressed the increase of mobile bookings. Likewise, two respondents pointed out, that consumers do not care about where they book but rather how comfortable the booking experience is, this also aligns with two other responders who said that consumers nowadays heavily rely on third party booking sites because of their utility and the collection of different products and services on one platform and another interviewee addressed, that today customers are able to choose where they want to stay, due to the transparency that is provided by intermediaries. One more point addressed by a respondent, is that many customers are relying on websites
like TripAdvisor to base their bookings on reviews. The same interviewee also pointed out, that recommendations are the best working marketing.

When talking about the current online booking market, one respondent pointed out that hotels have to deal with a lot of fake reviews that can seriously damage their business, while another emphasized that bookings are often made due to price and only secondarily because of the product. Two respondents mentioned that the majority of bookings is coming through online channels and only a small minority still books via email or phone call. Two participants addressed, that wholesalers are again increasing their market share because they adapted to dynamic pricing while another respondent highlighted that flash sale applications have increased their market share in the recent past.

When asked what the participants expected for the future of the hotel booking market one participant emphasised that he believes in blockchain booking engines, while two mentioned that it is important to watch out for Airbnb and the future development of Google.

“If Google develop the travel distribution they will be a major competitor in the hotel distribution sector. I would like to see that the OTAs and similar booking channels share the space with the hotel industry,” (Respondent 2).

Another two participants expect an increase in the number of booking channels with more players entering the market. It was also mentioned that an increase in mobile bookings is expected and one participant pointed out, that she regards a rise of number in the cooperation between hotels and OTAs as likely to happen. Another interviewee noted, that he hopes for more sustainable booking behaviour from the guest’s side, due to more awareness about the booking environment. And another respondent made a comment towards the GDS versus online travel agency situation.

“[…] of course it is interesting to see how the, sort of a balance between the GDS channels and the whole cooperate travel business versus the online travel agent’s business is going to move. How the balance is going to be within the next five years. I assume that the GDSs are still there because of what type of business they do, but yeah… They might become stronger eventually,” (Respondent 8).

Six of the interviewees pointed out that in the online booking market a lot of mergers and acquisitions happen and four out of the six highlighted that they expect this to continue in the future. The most mentioned merger was Hotels.de and HRS. A respondent pointed out, that many of the companies try to buy market share when acquiring other intermediar-
ies. Two participants see this as the reason for the hotel booking market becoming an oli-
gopoly or a duopoly with two major companies sharing the majority of the market share.
One participant also pointed out that this does not only apply to the booking engines, but also to hotel chains. Another participant explained that this is a quite common thing in all kinds of industries, taking VHS and Beta cassettes in the 90s as an example. Another par-
ticipant also emphasized, that OTAs try to grow in markets the original brand does not have a strong presence or they purchase metasearch websites to control rate parity and booking flows.

"Make it attractive like the start-up company build something up and the main thing is because at a certain stage you make so much money to develop further so it's easier just to sell it. Then it's up to buyer who bought it to either invest more in or just ditch it. That happens a lot with that new inventions, that in the medical whatever, in all fields […]", (Participant 7).

When asked about past changes in the hotel booking environment one participant men-
tioned, that in his experience nothing really changed, and the major players stayed the same. However, all other participants agreed that there has been change. One participant points out, that Hotel.de disappeared from the booking market because they could not stay competitive while another interviewee addressed the entire hotel booking industry.

"So, this is what has changed. I don't think in any other industry there has been such a huge change I would say in how the whole industry works then in this hotel section when the OTAs took over," (Participant 4).

Another change, that was pointed out by two participants was the disappearance of small wholesalers, that worked with fixed rates and mega packages including flight and hotel. One of them also highlighted, that many hotels stopped working with them because of high commissions and an old-fashioned way of working. Another participant pointed out, that while there were not many changes with the dominant GDSs, in the OTA section many players disappeared, which led to the current situation with only two dominant com-
panies, this was also supported by another responder. One Respondent identified a change in behaviour of OTAs, since they used to be selfish when entering the market but then became more cooperative, however since the English abolition of rate parity they moved backwards to be less involved with hotels. He also mentioned that in his opinion OTAs became less dominant and that hotels put a lot of effort in eliminating websites that sell fully independent traveller (FIT) bookings. Moreover, he mentioned that in the past ho-
tels did not like metasearch engines. Withal, they now found a way to use them to their advantage. Another Responder pointed out that the booking environment became fast
changing and diverting and that the platform HRS disappeared due to lacking behind with their technology. A different responder accentuated that booking engines became easier to use, which counteracts direct hotel bookings and traditional offline bookings like letters.

When asked about the technology behind a hotel booking, four respondents said that they make use of a channel manager, six respondents make use of a PMS system, with one naming Opera as the brand they use for their hotel, and two hotels said they make use of a CRS when registering bookings and updating their rates. One respondent highlighted that some systems do not configure well with their channel manager and therefore they receive some bookings per email and have to manually integrate them in their PMS. Three of the chain hotel respondents pointed out, that these systems are provided by their headquarters and another hotel highlighted that they could update their rates and availabilities directly on OTAs, however it is much easier to make use of a channel manager. Furthermore, one participant stressed, that because of the fast-changing technological environment, it is of utter importance to be up to date with technology to ensure that no system failures happen when a guest books a room. Another participant also mentioned, that due to the advancement of technology more and more online bookings are generated. Respondent 1 also noted, that the hotel sector tends to not be the most technology savvy environment and that the hotels were absent when OTAs entered the market, because they underestimated what power technology has on the consumer psychology. One more participant stressed, that the cost of technology continues to decrease and again another highlighted that their revenue management system sometimes cannot keep up with the speed bookings are registered or struggles to update them, which in his opinion is due to the transitory of technology. Plus, one interviewee addressed, that she believes that technology should be supporting hotels, so they can concentrate themselves on their guests, rather than doing manual administrative work.

“Today most of the hotels have an interface between the PMS and a technology company who has a has a so-called Channel Manager with connections to the GDS, OTAs and many other booking channels and Meta Search channels. These companies can also transfer bookings from the booking channels to the hotels PMS system,” (Respondent 2).

One participant addressed the competitive field of the hotel market. With one highlighting that their independent hotel has a different customer base than chain hotels, which does not necessarily look at the price first.
6.3 Hotel Room Cost, Pricing and Commissions

All hotel respondents noted, that the hotels they work for are affected by commission fee payments with one commenting negatively on this development, while two respondents see it as a necessity to reach clients they would potentially not reach otherwise.

"We pay it. It makes sense to pay commission if you reach to the market or potential customers you could not reach otherwise," (Participant 8).

Equally, one participant pointed out, that when having to pay less commissions hotels could start investing more in research and education of their staff. Another participant mentioned, that the commission money usually leaves the country they are located in and that commissions increase a lot during summer months. Another interviewee said that while he sees the use of commissions, he usually gets agitated about commission fee collection companies for travel agents (Onux) who also try to claim commissions for commission free bookings or for bookings made via an OTA. Some other participant also emphasizes that often hotels have to pay huge amounts of commission fees to even be listed on a hotel booking platform and a different respondent highlights that the commission really depends on the platform in question. The participant said that while HRS has small commissions due to cooperation with business travellers’ companies, while Booking.com and Expedia are charging hefty commissions.

When asked about the cost of a single hotel booking after deducting commission fee payments, two interviewees said the booking does not cost them anything at all, while five participants said they do have costs arising from PMS, staff, computing power, transaction fees or fees for the channel manager. Five of the participants highlighted, that for them the cheapest way to receive a booking is direct, either via their website or through email and phone. And one participant said, that they have to pay a set fee for each booking they receive through their franchisor’s website.

“Of course, there's going to be always something that costs, because there's computing power in the in the back end and you're going to have to support it somehow to run, but it's going to be much, much less. This is the most important thing," (Respondent 1).

Three participants said that commission fees definitely influence the room pricing, while three others said they do not at all influence the room pricing and two respondents said that it could be possible, however it cannot be said for sure. One respondent said that room prices are more related to branding and brand values, another emphasized that they
are making use of rate parity but that rooms can be booked cheaper on their website, if they are payed upon booking, while one more interviewee mentioned, that rate parity keeps them from having lower fees on their direct booking channels, compared to OTAs. Another respondent said that many factors play a role in the room pricing, like seasonality and events. Yet two other respondents mentioned that rates are mostly coming from the hotels demand, the market demand as well as the competitors’ pricings. Three respondents also highlighted that they make use of dynamic pricing throughout the year and one respondent said, that they do offer their rooms cheaper via their direct channels. He also pointed out that he believes that hotels start charging the commission from their clients, which he does not believe to be a favourable development. Another respondent mentioned, that while hotels may wish to charge the commission from their guests, this is unlikely to happen.

“I believe, that is the wish of hoteliers [that they can charge the commission on top of their room price], but I believe the guest will not participate in this, because the guest does not want to pay more, only because the hotelier wants to be listed for example on Booking.com,” (Participant 10).

6.4 Blockchain

While none of the 11 hotel channel professionals have implemented blockchain booking platforms at their properties, six of the participants have heard about them and two more heard about blockchain technology in other business areas. Two of the interviewees work at a hotel and a hotel chain that are both partners of Winding tree. One of them pointed out that, while the chain is a partner of Winding Tree, they as single property do not have a lot of information about what is being looked into, while the other participant highlighted, that it is their responsibility as partner to share their enthusiasm about blockchain booking platforms and to inform others about the possibilities of the platform. One participant was able to list three platforms, namely Locktrip, Tripkin and Nocturus and added that she thinks this is a very interesting topic. One more participant also heard about the Locktrip platform.

One of the respondents heard about blockchain booking systems during a community meeting, which led to her doing some research about it herself and finding some discussions in international hospitality papers. Another participant also acknowledged to know about the topic and that they as a hotel visited the ITB fair in Berlin last year to find more information, however they could not find any movement towards blockchain booking platforms on the fair. This led to the believe that the topic is not very popular. One of the respondents that did not know about blockchain hotel booking platforms emphasized that
she does read a lot of newsletters and looks up different platforms, but did not cross the
topic so far. One more interviewee heard about blockchain the first time in a TV show, and
started researching blockchain online, when she also discovered that the hospitality com-
panies TUI and Disney are looking in blockchain platforms.

Some of the respondents mentioned things they expect from blockchain booking engines.
One of the interviewees pointed out, that he expects that removing the intermediary from
the booking process will save hotels a lot of money and he believes, that the development
will be implemented within the next four to five years. He also pointed out, that he expects
blockchain to minimise commission fees:

"And that actually is going to minimize any of the commissions. I mean, let's say, for
instance, 10, or 12 or 15, or whatever, the percentage or the amount is that you
were talking about. Well, classical school, that's going to be reduced by I mean, not
only 50% or more than 50%," (Participant 1).

One respondent explained that she thinks, that blockchain system will have the capability
to identify people, handle payment and security, make services and products customisa-
ble and handle special requests as well as loyalty programs. She also highlighted that she
believes it will not be very different from technical systems used today in the hotel booking
process and. Another participant asked, how the payment via the blockchain will be man-
aged, and if it will be connected to hotels PMS systems. Yet another interviewee said that
he does not see the blockchain to grow too fast and he would expect a development pe-
riod of 10-15 years, he adds, that in his opinion a generational change is necessary for the
implementation to happen. He also adds, that it is easier doable in small scale hotels. In
his opinion, the blockchain booking systems also won’t become one of the major plat-
forms.

"But for it to become a standard I don’t see, it takes a long time. I don’t see that one
being the major platform in… I think certain type of hotels can benefit from that, but
when you look at the [hotel chain] and that kind of standard chains that are very,
kind of conservative, they have a, like they don't have the guts to put the whole
chain into blockchain. They test it with a few edgy hotels, and I think that can be a
product for those ones, but I don’t see it being a standard any time soon," (Respond-
ent 9).

Two of the interviewees stressed, that guests do not care which platforms they use for
booking a hotel room in their opinion and that the commissions for the hotel do not influ-
ence their decision, and one added, that she thinks that blockchain booking platforms
could target guests with loyalty programs. One interviewee said, that she believes when the topic of blockchain is discussed more in other industries, it will also come naturally to the hotel sector which in her opinion makes it hard to make a prediction on how successful the technology will be.

Three of the participants also addressed the current usage of blockchain with one stressing the importance to know the difference between cryptocurrencies and blockchain:

"Well as I said, I mean indeed blockchain is a buzzword and then there’s a misconception of what exactly blockchain is and the fact that many, many confuse it with Bitcoin. And the thing is that we need to really distinguish the difference. Bitcoin is a system of digital currency, where blockchain technology is the backbone technology for Bitcoin and other cryptocurrencies. Blockchains is way beyond just a cryptocurrency the applications that we can actually utilize are many that will be a huge benefit for not only the hotel industry," (Respondent 1).

He also pointed out that the he heard about a major mobile manufacturer planning to introduce private key fractioning to their mobile devices, which would in turn make it easier to have blockchain applications on mobile phones. He also highlighted, that blockchain technology can be used in other areas of hotels and gave the example of hotels reputation management. Another interviewee also pointed out, that in her opinion blockchain development in the area of hotel PMS systems would be beneficial, when blockchain booking platforms get popular to strengthen their exciting business model and that companies like The Federal Reserve, IBM and Microsoft are researching blockchain technology. Plus, another respondent said, that the payment with cryptocurrencies is not very popular in Europe as of now, and that this may be the make or break of blockchain booking systems.

Three of the hotels also gave away some things they think the booking platform will work like. Another interviewee pointed out that he believes that you will be able to allocate certain room contingents to the blockchain platform, rather than connect it to a PMS and another participant said that the platform Winding Tree already introduced a hybrid model of their planned application and that it is their distanced goal to not become another hotel booking intermediary and that the blockchain booking platform approach enables to eliminate fraud and to drive trust which was also highlighted by one more interviewee.

Moreover, six of the respondents addressed some kind of struggle or critique on the blockchain platforms. On respondent highlighted that the development and acceptance of
the platform is not only linked to the hotel sector but also to digital aspects and their development, and agreed with another interviewee that currently there are very dominant players that control the market, which make it hard but not impossible to gain market share. Another interviewee also mentioned that she would wait for the market to accept the blockchain booking platforms before using them in the properties she works in. One more participant also pointed that he believes that the hotel chains will have to do the marketing for the blockchain platforms, however he does not expect them to allocate a lot of money to this which might make it hard to establish the platforms. Another participant also addressed that the information she found on Locktrip seemed very sketchy to herself, since the information and photographs of hotels located in the city she works at are old and the information was out of date. In addition, one participant addressed, that she believes that private blockchain platforms can be a threat to dominating the market and therefore hotels need to be educated about the difference between public and private blockchain platforms. She also said, that one of the major challenges is to enrol the new technology across hotels, especially if a lack of technological knowledges already exists.

"I just think that if it is already in the beginning a bit shady, like you said they have hotel operators that are not aware they are on there. So where do they get these pictures, where do they get this information. If it's already in the beginning, I am not sure what the future will be," (Respondent 4).

Another interviewee also pointed out, that the technology of a hotel reservation system can be quite complicated and that the blockchain will have to support this. Coupled with this, another participant addressed that the blockchain technology today is very expensive and needs a lot of computing power. He also pointed out that as of now there are some issues with the European GDPR, because hotels are not allowed to store sensitive data about their guests on the blockchain in theory since it cannot be deleted.

"And due to the current ecosystem, you need to consider factors are like the GDPR. Well in theory you're not allowed to store sensitive data of your guests on blockchain, right? Because in theory you can't control it. So, by default, as the current legal system is operating, you need to have some data stored in the traditional centralized method and others you can actually use the decentralized method, which is the blockchain, which is a model on the way to have full blockchain monitoring," (Respondent 1).
7 Discussion

This chapter will discuss the results of this research with previously done research in order to answer the research questions. The comparison of previous research and its findings allows to see hotel professionals view on the blockchain booking platform development as well as the position of OTAs in the booking process and which platforms and systems blockchain booking platforms have to compete with.

7.1 Blockchain

There is a certain awareness of blockchain booking platforms, but while some hotels partner with blockchain companies, none is as of now listed on a blockchain booking platform. The platforms that are the most popular with the interviewees are Locktrip, and Winding Tree, which are both located in Europe (Locktrip, 2019; Winding Tree, 2019), just like the majority of the interviewed hotels. While some of the respondents indicated, that they heard about blockchain booking platforms, it was indicated that often no or only superficial information was found, which confirms Brandau (2018) and Norman (2018), who emphasized the high marketing costs to raise awareness of such a platform. This can be seen as an indicator, that the awareness and marketing in the business to business market is still weak. Additionally, this can also be caused by the lack of blockchain usage by general society, which was pointed out by a participant as well as Drescher (2017). If this should prove true, if other blockchain implications get bigger, blockchain hotel booking systems will be more widely known.

While one of the interviewees clearly expects blockchain hotel booking platforms to become a cheaper option than OTAs, in line with Carlino (2018), Avin Bala is concerned if they will actually be a cheaper alternative to currently excising platforms (McCracken, 2018), which might also correlate with the overall high price for blockchain solution that was mentioned by Drescher (2017), DeChellis (2018) and by an interviewee. This would mean, that while bookings through blockchain platforms are less expensive than bookings through OTAs, sustaining the platform may be expensive. Since no one is owning the platform (Carlino, 2018), this would mean the costs would eventually end up on the hotel’s sides again.

Although, independent and chain hotels commented that they are affected by commission fee payments, Norman (2018) suggests, that especially independent hotels could benefit from their removal through a blockchain booking platform. This means, that the interviews indicate, that chains and independent hotels are both affected on the same level. Besides this, the majority of the interviewees indicated, that commission fees do not influence their
room pricing, which in turn would mean, pricing on blockchain booking platforms would not be cheaper than prices offered on their own website, but hotels would make more revenue. This contradicts with Locktrip (2018) and Carlino (2018) and thereby indicates, that there is no price reduction that would make consumers book via blockchain. While the platform Locktrip (2018) pointed out, that they want to remove commission fees from hotel bookings, the platform BTU (2018) and an interviewee pointed out, that the aim of blockchain based platforms is to reduce commissions to a fairer level. This indicates, that after all, blockchain hotel booking platforms will still be charging commission fees from their guests which may make them just another booking platform, confirming Avin Bala fear (McCracken, 2018).

Next to the reduction of price due to commission fees, the platform Gozureka is making use of a loyalty program to retain customers (Gozureka, 2018) comparable to OTAs, which was also suggested in the interviews to attract customers to the new booking platforms. BTU also uses an incentive with immediate gratification when reimbursing 5% of the booking prices to guests immediately after booking (BTU, 2018). The aforementioned shows, that blockchain platforms trust on gaining customers through adding extras to each booking, similar to OTAs (Stangl, Inversini and Schegg, 2016).

Since mobile bookings are thought to increase (Webb, 2016), the development blockchain becoming easier to implement in mobile apps, as suggested by an interviewee, could be an essential step in the development of blockchain hotel platforms. This also connects with the outlook an interviewee gave, that it is important for hotels to stay up to date in technology, which would mean that all systems used by the hotel should in turn be capable to run on the newest soft- and hardware.

Two researchers and several interviewees agreed, that blockchain still has a long way to go, to be integrated in customers day to day life (Die Blockchain-Revolution, 2019; Drescher, 2017). Infrastructure and customer friendly interfaces could therefore bring the development of blockchain booking platforms to the level of customer acceptance. Also, participants and literature mentioned the high energy consumption of one blockchain transaction (Die Blockchain-Revolution, 2019; Fairly, 2017; Giangatu et al., 2017), which in turn would make a blockchain platform of the size of Booking.com an ecological disaster and could thereby lose environment conscious customers and hotels. Additionally, research (Die Blockchain-Revolution, 2019; HowToToken Team, 2018; Li, 2018) and a participant pointed out, that today transactions on the blockchain take a lot of time. Besides, one of the interviewees mentioned, how currently hotel bookings are moving very fast and that current systems can’t keep up with the speed of bookings, which could also mean,
that blockchain booking platforms would not be able to handle the reservations made on them and that customers are lost during the booking process due to long waiting times.

One of the respondents wished for a more level playing field in the hotel booking sector, which could be achieved by blockchain booking platforms according to Maksim Izmaylov (Carlino, 2018). This would in turn mean, that blockchain booking platforms would become another provider competing on the same level with OTAs, GDSs and other intermediaries.

Interviewees mentioned, that nowadays the consumer prefers to book their entire holiday on one platform which is also mentioned by Vinod (2011) in previous research. This gives a positive outlook on blockchain travel platforms that DB Systel and IBM are creating (Die Blockchain-Revolution, 2019; Ledger Insight, 2018).

Furthermore, literature suggests that blockchain technology can improve trust between two different parties (Tapscott, 2018; Subramanian, 2018) as for example business partners (Li, 2018). This was also picked up by two of the interviewees, who also applied this to the B2C operations of the platform. However, Chafik (2018) mentions that this cannot be proven. Carlino (2018) does not highlight ensured trust, however he indicates that blockchain will bring a huge improvement compared to the current situation. Touching on this topic, one interviewee highlighted the importance of public blockchain platforms, which aligns with Sorrells (2018c) who private platforms are unattractive to small hotels. Previously mentioned leads to the suggestion, that a hotel booking platform based on blockchain should be based on a public blockchain, to make it desirable for all sizes of hotels to be listed on them. Furthermore, data safety was said to be a struggle for blockchain booking platforms in the interviews, however, the platform Atlas aims to give back the control over data to their customers (Atlas, 2018), which contradicts with one another.

One interviewee agrees with DeChellis (2018) and Chains (2018), that the hotel industry has to step up their technological game and need to start become technological pioneers for once. This displays, that the hotel industry usually lags behind when technological inventions are introduced and are lagging in speed when catching up with technological innovations.

When discussing customers willingness to switch to a new platform one interviewee mentioned that customers do not bother which platform is used for bookings which is in accordance with Douglas Quinby, who adds, that start-ups usually do not have the money to compete with major players (Carlino, 2018). This could mean, that the make or break of
blockchain is already decided on the monetary means the founders can produce. Additionally, several of the participants highlighted the frequent mergers and acquisitions, in the hotel booking market, which may hint, that big players will be buying the new start-ups and either use them to their advantage or shut them down.

While Norman (2018) implied, that hotels have to hire professionals to operate a blockchain hotel booking platform, one interviewee and another article suggested that the usage of the platforms is simple and can be done by the smallest hotels (HowToToken-Team, 2018). This signifies, that it is easy for all hotels to be displayed on hotels platforms. Interviewees also suggested, that they are using many systems to register bookings and update their online listings and one implied, that the blockchain platforms should be able to connect to these existing platforms. This would mean, it has to be ensured, that blockchain can be connected to traditional hotel systems. The aforementioned also connects with an interviewee who suggested to develop PMS on the blockchain refers to another solution, in which all other hotel systems should get a blockchain alternative.

7.2 Diffusion of Innovation Theory

Since it is hard to get acceptance in the consumer market for new product (Schiffman, Kanuk and Hansen, 2012), blockchain booking platforms will face some struggles when entering the hotel room booking market. This may be caused by the surplus of options (Schiffman, Kanuk and Hansen, 2012). While there is a rather small offer of blockchain booking platforms, there are already many players sharing the market of hotel bookings including GDS, OTAs and metasearch engines.

When looking at the adopter groups, only two of the interviewed hotels can be located. Both are positioned in the Innovators group, since they are taking a risk with adopting the new technology. Additionally, one of them also mentioned that it is their aim to educate other hotels, which is a feature of this adopter group. Another interviewee mentioned that she would wait for further developments until the technology has proven itself, which is a characteristic of the late majority adopter group (Kaminski, 2011).

Furthermore, Roberts (2003) indicated that blockchain needs to be a lot superior to existing hotel booking intermediaries to be able to compete in this market. This also depends on the perceived value for the hotels. Blockchain platforms can be deemed successful after about 50% of hotels adopted it as a booking platform when it reaches the point of critical mass (Kaminski, 2011; Rogers, 2003).
According to Schiffman, Kanuk and Hansen (2012) blockchain hotel booking platforms can be classified as innovations that are a new product that does not change established patterns for the hotel, since they try to capture the same scope of work as other booking intermediaries (Winding Tree, n.d.; Atlas, 2018; Locktrip, 2018; GoEureka, 2018; BTU, 2018).

When taking Robertson (1967) in consideration, first hotels with a lot of power in the booking process should be made aware of the positive effects of blockchain booking platforms, so that they can influence other hotels as opinion leaders.

Looking at the decision process, most of the interviewees can be classified in the knowledge phase, since they only heard little about the innovation, also two of the interviewed hotels are between the decision and implementation stage, since they are as of now not using the technology, however they are partnering with the platform (Rogers, 2003). According to Panwar et al. (2019) the majority would currently complete the step of need, recognition and problem awareness and the information search.

Rogers (2003) and Laukanen (2011) imply that hotels could also change their attitude towards the acceptance or rejection the blockchain powered platforms, which makes the adoption process more complex to oversee. Barriers to accepting the platform may be, that they are different to the existing status quo (Ram and Sheth, 1989), like the dominant OTAs (de Carlos, Araujo and Fraiz, 2016; Howe, 2017). Plus, blockchain booking platforms are based on a new kind of technology (Dogru, Mody and Leonardi, 2018), which make their market entry more difficult to be accepted by hotels according to Ram and Sheth, 1989. However, they will most likely not fail on the image barrier, since the platforms are built on new brands that are not connected to previously negative customer experiences (Winding Tree, n.d.; Atlas, 2018; Locktrip, 2018; GoEureka, 2018; BTU, 2018).

7.3 OTAs

All participants mentioned, that they are using at least some OTA platforms, and that they are dominant in the booking market with several indicating that most bookings are received through OTAs, which correlates with Howe (2017) and de Carlos, Araujo and Fraiz (2016). This shows, that it is hard for other players to gain market share. Besides this, Oksam and Zandberg (2016) suggest that as of now the OTA market is an oligopoly which was also mentioned in two interviews, with one interviewee even hinting at a duopoly environment. De Carlos, Araujo and Fraiz (2016) and Starvok (2018) also indicate Booking.com and Expedia as the most powerful platforms, which was confirmed in several interviews, likewise almost all interviewees mentioned HRS as additional platforms. This
shows, that even within the field of OTA booking engines, only few players are successful, which makes it hard for new players that want to directly compete with Booking.com, Expedia and HRS.

Also, many interviewees expressed, that they believe OTAs cannot be removed from the hotel booking sector, which complies with Sherri Kimes (2017) who adds that this especially affects independent hotels. Which implies that also in the future some kind of middleman like an OTA will be needed for the hotel room distribution.

Furthermore, several interviewees indicated that they are charged high commission fees by big OTA portals, while direct bookings are rather inexpensive, this disparity between booking costs can also be found in literature (Chang, Hsu and Lan, 2019; Batenic, 2018). Withal, due to rate parity agreements, hotels have to list the same prices on all online booking channels (Ting, 2016; Gazzoli, Gon Kim and Palakurthi, 2008) which was confirmed by one participant, however another participant said, that rate parity is no longer required by law in their country and this means, that hotels can attract guests to book directly with lower rates. Nonetheless, Howe (2017) mentions that hotels get down listed on OTAs as soon as they list different prices on their own websites which was also confirmed in two interviews and in one interview it was mentioned, that while big hotel chains can take this risk, small hotels may suffer immediate profit losses. Ting (2016) also acknowledged that cheaper prices within rate parity can only be offered to loyalty program members to not affect OTA rankings. This shows the power OTAs have over all hotels, but especially small independent properties that have no or only small loyalty programs.

Consumers like OTAs because of their utility, the perceived value and the chance to compare prices and hotels on one website (Chang, Hsu and Lang, 2019; Vinod, 2011) which was also said in several interviews and implies that customers appreciate to be able to only visit one website to make their booking decision. This also implies that new booking platforms need to have at least the same if not even a better infrastructure to be able to challenge currently existing providers.

Further, two interviewees mentioned that it is important to look out for Googles developments in the online travel sector, however Rob Torres (Managing Director Google Travel Services) said they are not developing towards an OTA model but will continue as a metasearch player (O’Neill, 2018). So, while Google seems to be one of the few players that could challenge current OTAs, it does not seem, like they will be entering the competition in the near future.
7.4 Hotel Distribution

All participating hotels indicated that they offer their rooms through different channels including but not limited to OTAs, direct channels and GDS and that several hotel internal and external systems are used to keep these channels up to date including CRS, PMS and channel managers, this matches literature (Stangl, Inversini and Schegg (2016); SnapShot Team (2015); Choi and Kimes (2002)). However, only chain hotels indicated, that they make use of CRS systems but many hotels make use of channel management systems. An adapted version of Figure 5 can be found in Figure 7 including direct website bookings and metasearch engines based on the interview findings.

![Diagram of hotel-distribution channels](image)

Figure 7: Hotel-distribution channels (Modified Choi and Kimes, 2002)

While Mensak (2018) indicates that metasearch engines support OTAs by listing the players that spend the biggest amount of money on advertisement one participant pointed out, that this used to be the case, however by now hotels know how to use metasearch to their advantage. This shows, that hotels can also learn to use a primarily negative situation to their advantage.

Although, literature (Howe, 2017; Oskam and Zandberg, 2016; Stangl, Inversini and Schegg, 2016) mentions, that the number of direct hotel bookings is getting smaller and smaller, some interviewees disagreed while others agreed. This shows that the balance between direct and intermediary platform bookings highly relies on specific hotels and their marketing mix. Moreover, Webb (2016) suggests that booking choices are no longer
made due to product offerings, but are mainly based on price, this was seconded by one respondent. Literature also indicates that customers look online to compare hotels on peer-to-peer review sites (Gursoy, 2019) and trust these websites more than offline peer reviews (Confente and Vigolo, 2018), while a participant indicated that hotels lose a lot of bookings due to fake reviews on these websites. Therefore, a platform that can proof the honesty of reviews would be the ideal solution, since online reviews seem to be of great importance for customers.

Also, more and more bookings are done online according to Wu and Law (2018) which was also highlighted in some interviews, as well as a decrease of offline bookings. Aforementioned shows, that the digitalization is influencing the development of hotel bookings and it can be expected to continue according to interviews and Oskam and Zandberg (2016). This means that in the future hotel bookings will even more often be made via online platforms.

Furthermore, in one of the interviews the guest’s likings for one-stop-shop experiences is touched. Fox (2018) acclaims that NDC systems could be taking over the booking of hotel rooms, by offering them together with flights and car deals, which would mean a reshuffling of all online hotel room distribution engines.
8 Conclusion

The following chapter answers the research questions by first answering each sub question in one paragraph and then giving a research-based explanation of the main question. This is then followed by suggestions for further research and end with the self-evaluation of the author.

8.1 Answers to Research Questions

The hotel professionals that were interviewed for this thesis gave a miscellaneous outlook on blockchain booking platforms. While a certain awareness about the technology is present the use of them is abundant. The development of blockchain in different areas of life will be a big determinant if these platforms become successful. The blockchain booking platforms will not necessarily bring cost reduction to the hotels and there is no difference between the benefits for chain or independent hotels. Furthermore, customers will not find cheaper prices on the blockchain platforms and it is even doubted, if commissions can be completely removed or just reduced. Moreover, hotel booking professionals emphasized that the infrastructure and interfaces need to be developed further to become usable for hotels. One major factor is the difference between public and private blockchain platforms, with interviews suggesting that only public platforms could be beneficial for hotels at all. Withal, it was pointed out, that the success of the platforms is based on the monetary means they can produce to secure market share, since small companies will likely be bought up by bigger companies. However, benefits of the platform are the ease of usage and the low cost of setting up the wallet to be displayed on them. As of now most of the hotels are in the knowledge phase of their decision to adapt blockchain based booking platforms, which means that they mostly do not have detailed understanding of the subject, additionally none of the interviewees reached the implementation stage which means the revaluation of the blockchain booking platforms has not happened as of now. Moreover, it has to be said that the point of critical mass has not been reached, therefore it has to be seen if the innovation will prove successful and conquer the barriers to acceptance of hotels.

When looking at the competition with OTAs it was pointed out that OTAs are very dominant in the hotel booking market. Also, their loyalty programs and extras were mentioned as a pulling factors for customers to book on their websites which must be recreated by blockchain sites to gain momentum. Moreover, they handle several fast transactions per booking which is as of now not possible to recreate by blockchain platforms and the connection to existing internal and external hotel systems makes them the preferred platform
to be used by hoteliers. However, if all features and the infrastructure hotels currently de-
pend on can be combined in another platform, this could open up the competition, espe-
cially if the high commission fees that affect hotels are removed. Overall with their current
position as an oligopoly it will be hard for new players to gain market share with a similar
model, however it is not deemed impossible.

The current hotel booking market is combined of several players which are mostly inter-
connected and includes direct bookings, OTAs, GDSs, metasearch websites as well as
several hotel internal and external channels. It is the main goal of hoteliers to navigate
customers to direct channel bookings, however the balance between direct and intermedia-
tary bookings is hotel specific. Monetary means play a major role in the listings on
metasearch websites, none the less hotels can use this to their advantage. Although this
may be true, review sites can damage hotel reputations with fake testimonies and are an
incremental part of today’s customer journey. Also, most intermediaries charge hefty com-
missions form hotels and thereby influence hotels revenue stream negatively while on the
other hand offering marketing exposure. Overall, the hotel booking process today mainly
happens online and often is a one stop journey for customers, who do not directly visit ho-
tel booking sites anymore, but make use of Google and intermediaries which is more cost
intensive for hotels than direct hotel bookings.

The previous remarks indicate that it is as of now quite unlikely that blockchain technology
will remove intermediaries from the hotel booking process. While hotels may benefit from
higher revenue, the dominance of OTAs as well as the structure and integration of the cur-
rent booking market make it hard for new players to compete with established systems
and brands. Overall, the demand for the blockchain is missing so far with some hotels not
or only scarcely being aware of the technology and its abilities. Withal, if the technology is
further developed to match or surpass OTAs abilities while removing commission pay-
ments, it may become a viable option in the future. So while literature suggest a positive
outlook on the development of blockchain technology in the hotel booking sector, this re-
search does not match these expectations.

8.2 Further Research and Implications

While this research concentrates on hotel booking professional opinions to validate the re-
search results, the opinion of potential customers towards hotel booking systems and spe-
cifically blockchain hotel booking platforms must be further researched to understand the
demand on the B2C side of this subject. Moreover, the sample size of this research could
be broadened to validate or adjust the research outcomes of this thesis. Another topic to
research would be the ecological impact of blockchain hotel bookings systems and its influence on climate change.

Furthermore, while this research concentrates on blockchain booking systems and especially focusses on their competition with OTAs, further research could consider blockchain based GDSs and internal hotel possibilities for the technology. Another course of research could be what impact the proposed reduced commissions could have on hotels revenue streams and if this has an effect on OTAs commissions.

8.3 Self-Development

Writing a bachelor thesis was a very didactic experience, while being challenging sometimes, it was also inspiring and helped to combine theoretically learned knowledge from the past three years of studying with practical elements. After finding the research topic, which happened as a coincidence designing the research process seemed simple. However, finding fitting literature was challenging at times, since the research topic is not widely investigated. Even though the procurements of the interviews turned out to be the most challenging aspect of the thesis, the interviews themselves were worth this effort. Speaking to professionals in the hotel industry allowed to get a better insight in the work environment and atmosphere in the hospitality industry. While some anxiety was present when starting each interview, the open and friendly attitude of the interviewees and their genuine interest in the topic eased the atmosphere and taught the author that believing in one self. It was also interesting to see how the industries perspective differed to known literature, since this was not primarily expected.

Making a thorough plan on how to conduct the writing of the bachelor thesis helped the author to complete the thesis and acted as a red string in the research process. Therefore, creating realistic guidelines turned out to be a vital step to this work being finished in the limited time frame that is given by the double degree arrangement.

The most cherished moments of the thesis process were when the researcher was praised for professionality and speed of working by participants. This also endorsed the author to continue the process in moments of doubt about the research.

When looking back at the past three years of studying at Breda University of Applied Sciences and Haaga-Helia University of Applied Sciences, this thesis is the outcome of combining knowledge the author gained in both educations. While the two first years in Breda shaped the theoretical knowledge and the research design, the time in Helsinki inspired
the research subject and polished the authors social skills that were needed during the interviews. Finishing the double degree with this thesis allowed the researcher to use all acquired skills from both universities of applied sciences in its fullest.

Overall, the thesis process taught the author how to plan, conduct and review big projects and was especially helpful to understand qualitative research methods in depth. This may also prove helpful in the authors further line of studies of a master or second bachelor degree.
References


Nicolau, J. and Sharma, A. (2019). To Ban or Not to Ban Rate Parity, That is the Question… or Not?. International Journal of Hospitality Management, 77, pp.523-527.


Appendices

Appendix 1. Hotel Technology Distribution Chart (SnapShot Team, 2015)
Appendix 2. The Interrelationship Between the Innovation Decision and Innovation Adoption Model (Rasmussen and Hall, 2016)
Appendix 3. Interview Guide

Interview Guide: Blockchain

Introduction
My name is Marie-Luise Kriitemeyer and I am a fourth-year student at Haaga-Helia University of Applied Sciences. This interview is conducted in order to answer my bachelor thesis research question. The aim of the interview is to determine how the hotel is expecting to be influenced by blockchain booking platforms and the competition with Online Travel Agencies (OTAs). Your interview is confidential and will only be used for research purposes. Your name or hotel cannot be seen in the results. It will approximately take 20 min.

Topics
- Hotel Bookings
- Online Travel Agencies
- Blockchain Bookings
- Commission
- Cryptocurrencies
- Communication with Booking Systems
- Booking Behaviour

Questions

Hotel: Position: Blockchain:

How many booking channels do you have at the moment? Which ones are they?
Who takes care of them in your organization? Who chooses new ones?

1. Which channels do you receive most of your bookings through?

2. What has changed in the hotel booking sector in the last four years?

3. Can you think of any players in the booking market that disappeared in the last four years? Why do you think they disappeared?

4. Please describe the technology that you use to register online bookings in your hotel.

5. What change in the hotel booking world are you expecting in the future?

6. Do you think traditional online travel agencies are going to continue to dominate hotel bookings in the future or do you think there will be new players entering the market?

7. How affected are you by commission fee payments to OTAs?
   a. Do commission influence your overall room pricing?

8. Would you offer your hotel rooms overall cheaper if you would not have to pay commission fees?
9. Please describe the booking process of your target group.

10. Do you believe at this point of time it is still possible to disintermediate the hotel booking process or do you believe intermediaries are necessary?

11. What costs arise per channel and booking for your hotel? Estimates are good enough.

12. Do you know blockchain based booking platforms? Can you name any?

13. Do you offer your hotel on a blockchain booking platform? Why not?
   If yes, how many bookings do you get through the blockchain platform per month?

_If 12. is answered with yes:_

14. Do you think there a significant difference in processing bookings through a blockchain hotel booking system than through traditional third-party supplier?

15. What is your personal opinion towards blockchain booking platforms?

16. In your experience, how well are blockchain booking platforms known and used by potential hotel guests?

17. Can you tell me how you have learned about blockchain booking platforms?

18. How would blockchain booking system affect the hotels overall performance?

_End_

Thank you for your time and your sincere answers. I will be sending you the results of my research paper upon completion of my thesis work. If you have any further questions later on, please do not hesitate to contact me.
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### Appendix 5. Final Set of Codes

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