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Thesis

Chatbot application to improve companies' competitiveness in tourism sectors

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Description

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Abstract

Chatbots can be used effectively to raise the competitiveness of tourism organizations and companies. The purpose of the research is offering best practices of adoption chatbots to companies in tourism factors. The research aims to observe the chatbots' adoption in tourism sectors in hope of strengthening companies' competitiveness and providing recommendation for better chatbots implementation in tourism. In previous research, the authors investigate chatbots performances in tourism's business by assessment of each respective case study. Therefore, the big insights of objective phenomena or events are not analysed carefully. To fill this gap, the author examines chatbot's adoption in more generated context. The methodology to conduct the study is qualitative method with semi-structured interviews associating with 6 experts in IT and Tourism. The inductive reasoning approach with explorer purpose helps to collect data to answer research questions and achieve thesis's aim. The conclusion of the research offers the best practice for tourism practitioners and service providers into chatbots implementation for driving revenue and elevation of customer's number.

Keywords/tags (subjects)

Keywords: Chatbots, tourism, hotels, restaurants, travel agencies

Miscellaneous (Confidential information)

For example, the confidentiality marking of the thesis appendix, see Project Reporting Instructions, section 4.1.2

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1 Introduction

The rapid growth of technology has transformed tourism dramatically (Pencarelli, 2020). The surprising leap in technology adoption effect on how customer think and use tourism service. The typical change of customer behaviours is that they choose to use online channel instead of traditional offline ones (McKinsey & Company, 2020). Restaurants and hotels obtain benefits from online booking and information support in interacting to customers friendly and quickly. Similarly, travel agencies, as an important part of tourism field, get significant values from automatic trip planning function to turn their users become their loyal customers. Some of emerging positive consequences of advanced technology in tourism are the growing number of customers and the increasing revenue of companies (Jung et al., 2014). Furthermore, among important digital innovation supporting this revolution, chatbot is a technology tool that may bring remarkable value on tourism business.

Digitalisation and innovation become a competition for organizations in tourism. The fast development of chatbots' quality leads to the trend of increasing investment to apply chatbots into the tourism's business. However, chatbots may bring invaluable efficiency economically for tourism companies. Thus, a significant question receiving more concern from researchers and executives is that if there are any hints to integrate and optimize chatbots benefits in appropriate way in tourism operation.

The author's motivation for conducting this research is resulted from her own interest and experiences in travel and technology fields. During the journey, she had a deep conversation with a professional traveller and an A.I engineer about A.I, chatbots and tourism in general. The main topic debated at that time is if technology in general and chatbots in particularly truly valuable for all business in tourism? Other question discussed is that are there any best practice that companies in tourism sector can utilize chatbots or AI in their business simply and practically. Then, she conducts her own knowledge base about Chatbots and tourism to satisfy her curiosity. Thus, this research is inspired from that conversation with the traveller and the expert.

Scope of this thesis is limited in business knowledge in tourism and there is less acknowledgement in technical factors including models, process, design chatbots or other relevant technology. There is not specific geography location of hotels, restaurants or travel agencies mentioned in this

research. Thus, the author's observation angle could be affected in border of her real experiences in Asian county. These limitations are from the author's aim and purpose in the research, which are the observation of chatbot's integration situation in tourism and best practice suggestion for utilisation chatbots in tourism practically and simply.

2 Theoretical background

2.1 Digitalization in tourism sectors

Digitalization becomes an essential part for business in the competitive marketplace. The outstanding development of technologies including chatbots, robotics, IOT (Internet of Things), AI contribute the huge wave of technology to all economy sectors including tourism. The numerous travel agencies, restaurants, bars, hotels, and other business in tourism factors proves the potential development of the field.

Moreover, tourism nature bases on services and products through its operation. Therefore, tourism gets a vast number of benefits and profound impacts from digital offerings (Zsarnoczky, 2018). Utilization of digitalisation offers huge prospects to business in tourism including increasing competitiveness, giving chance for company's innovation, expanding prospect markets, developing the effectiveness of operational activities

2.2 Chatbots

Chatbots is defined as a computational tool to simulate human conversation and communicate with human (Hatwar et al., 2016) in the text- based or voice-based conversation (Brandtzaeg, 2018). Basically, chatbots are understood easily as a software agent that information inputs are provided to chatbots by users and series of certain answers are sent to users on the basic of the chatbot's knowledge (Wailthare et al., 2018). Numerous important terms are used to describe chatbots with clearer images. These innovation comprised of Artificial Intelligence (AI), Natural Language Processing (NLP), etc.

Artificial Intelligence is a complex term to define. It is considered as a system with ability of thinking, acting rationally like humans (Kok, 2009). Natural Language Processing tools are relevant

to the communication between computers and human languages by 'converting information from computer database into readable human language' (Kumar, 2011). NLP is defined as machine-like approach to examine text relying on technology and specific information (Liddy, 2001). In another word, NLP helps to analyse and display human language by computational tool (Khurana et al., 2017). Using an innovative technique in Artificial Intelligence (AI) associating with Natural Language Processing (NLP) tools facilitate chatbots understand and interact with the users effectively (Griol et al., 2013 & Khanna et al., 2015). In addition, Ukpabi et al. (2019) concludes that data for processing chatbots depends on queries, responses through real-time dialogues to consumers with special data management rules.

The ultimate goals of chatbots are automatically communicating with consumers and answering different queries and demands without any human intervention (Ikumoro & Jawad, 2019)
It is plausible that many benefits chatbots can be provided to business. Collecting valuable data of customers to enhance customer's experiences is one of Chatbots' significant advantages. Moreover, chatbots have abilities to convert data into personal recommendations and huge sets of data for companies in the aim of perceiving their customers (Ikumoro & Jawad, 2019). Customers' trust to chatbots are highlighted due to some mimicking characteristic such as friendliness, empathy. Furthermore, human-like characteristic including tiredness, annoyance, madness regardless of any silly or weird questions from customers are erased or dismissed due to Chatbots use (Calvert, 2017). These advantages of chatbot uphold to raise trust form users. Thus, Chatbots encourage users to be open to ask and talk with their real demand including private topics. Therefore, service encounters are improved (Verhagen et al., 2014) and the companies obtain valuable information from users to enhance customers' experience.

Additionally, cost effectiveness appears to be monitored as another advantage of chatbots adoptions in business operation. Cost for establishing, maintaining, and operating chatbots is cheaper than mobile apps or other smart devices (Waxer, 2016) due to the lack of specific relevant facilities. Chatbots could decrease the number of customers calls so the duties of staffs are reduced so customer care cost is reduced (Phd & Hussain, 2018) through being available 24/7. Chatbots have ability to create a cost saving amount with 8-billion-dollar goal per year for companies' (Reddy, 2017).

The below figure shows the chatbot process that is adopted from Ukpabi et al. (2019).

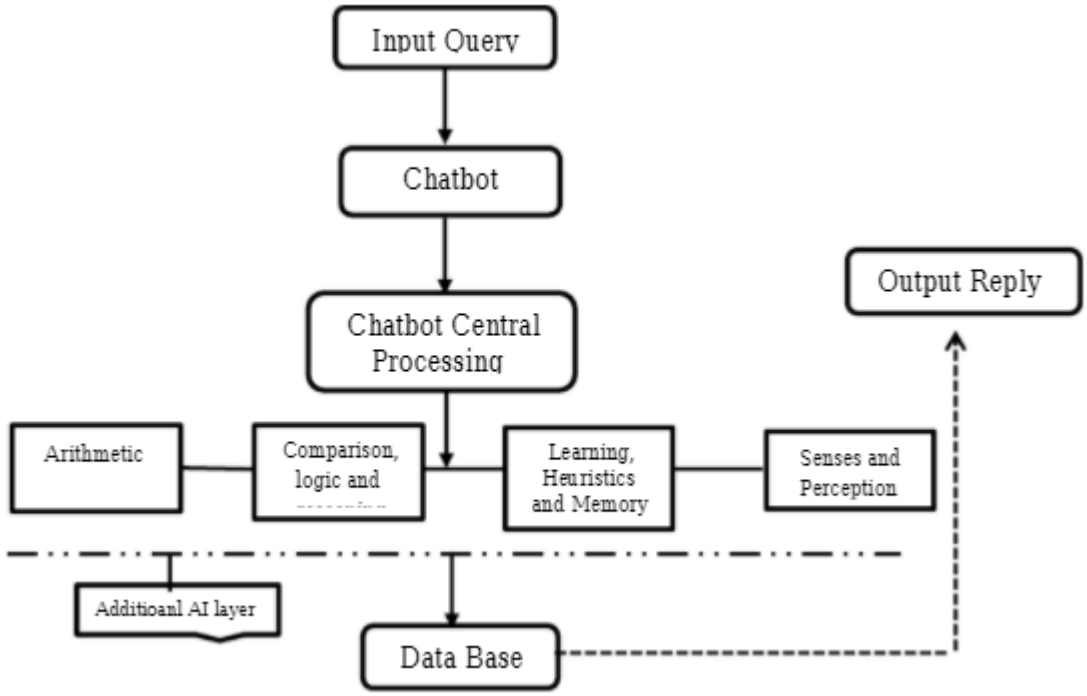

Figure 1. Chatbots process (adapted from Ukpabi et al, 2019)

In the figure 1, Ukpabi et al. (2019) noted that the process starts when input query is added to the chatbot system by chatbot users. The query is analysed in chatbot Central processing. Different methods to use in this analysing period including senses and perception; learning, heuristics, and memory: comparison, logic; arithmetic. The database is used by chatbot engines to find relevant, reliable, and fast information to reply the users. The process is ended by giving answers to customers called output reply. The chatbot machine is designed to make answers that is close to human's answer with hight updated and reliable information. In practice, this process is operated quickly and the answers to users are offered immediately.

Classifying chatbots is first step to maintain and improve chatbots functions. Two scientific well-known taxonomy of Chatbot application are shown in below images introduced by Hussain et al. (2019) (Figure 2) and Phd & Hussain (2018) (Figure 3)

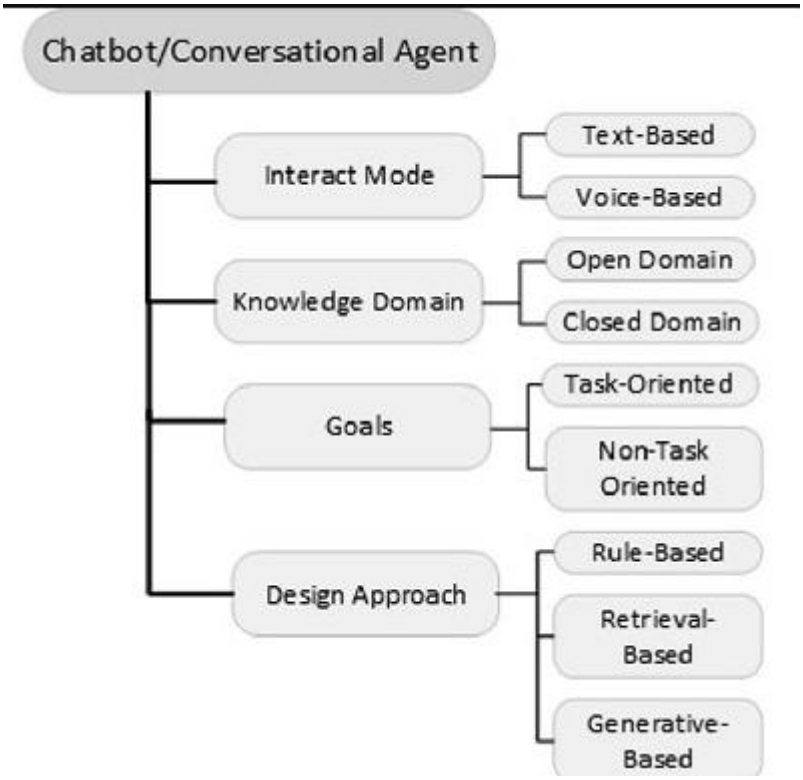

Figure 2. Chatbot types (adapted from Hussain et al, 2019)

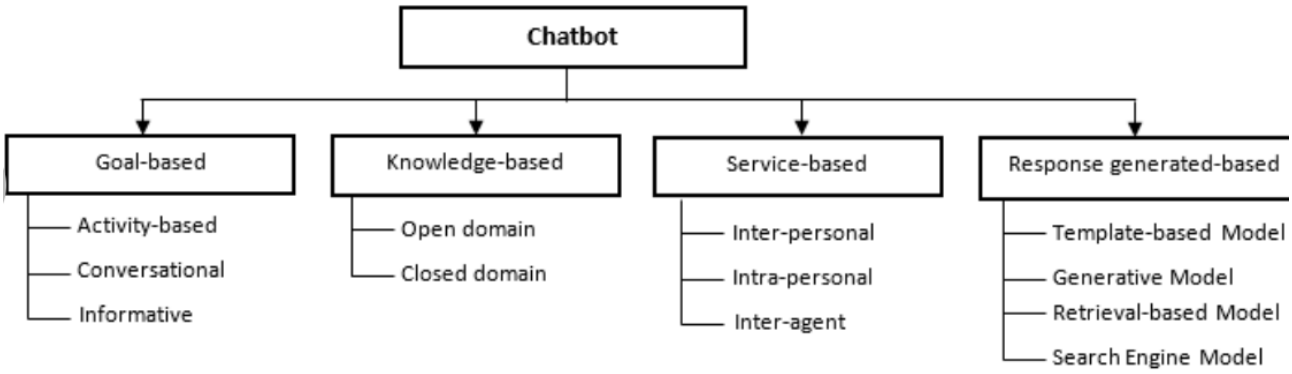

Figure 3. Chatbot classification (adapted from Phd & Hussain, 2018)

Chatbots used commonly in tourism are belong to tasked- oriented chatbot with specific goals and functions (Shevat, 2017), according to Hussain et al. (2019) and service-based chatbots, according to Phd & Hussain (2018)

Expedia, British Airways, Skyscanner, Kayak, Hyatt Hotels, Booking.com are the first companies applying chatbots platforms as the common automation solution and get success in their business. The below table mentions about how common and potentials of applying chatbots in different functions with specific Chatbot platforms

	Hipmunk	Mezi	SnapTravel	HelloGBye	Pana
Funds Raised	$ 55.2 M	$ 11.8 M	$ 9.2 M	$ 4.6 M	$ 1.5 M?**
Year Founded	2010	2015	2016	2012	2015
HQ	San Francisco	Sunnyvale, CA	Toronto, San Francisco	Austin, TX	Denver, CO
Staff Size	53	11- 50	11 - 50	6 - 10	11 - 15
Target User	Prospective travellers, business professionals	Prospective travellers, business professionals and travel agencies	Prospective travellers,	Prospective travellers, business professionals	Business professionals
Data Procession Form	Chat	Chat, images	Chat	Chat, voice (audio), images	Chat

*Data from the above figure was extracted from the company's Crunchbase, AngelList or PitchBook business profiles. User-targe data was addressed from the specific company websites. Staff numbers was shown from the websites if all staff members were metioned and from Crunchbase if the website did not clearly refer to the staff size.

**A question mark are presented after Pana's raised funding session. The reason is that some press releases and news coverage predict that it has received 2.5 million US dollars in funding round when Crunchbase and AngelList notice the raised funding at 1.5 million US dollars.

Figure 4. Chatbot platforms in travel industry- cited from Bump (2019)

Application of chatbots to companies have clear potentials for improving efficiencies in organization, operation, and service delivery (Ikumoro & Jawad, 2019). Below analysis implies for the current situation of chatbot application in specific fields.

2.2.1 Chatbot in hotels

Booking and ordering rooms, other amenities and services including spa, food, and beverages, etc are the outstanding of chatbots. These function help the rise of hotels' revenues (Lasek et al., 2013). In the fast pace of technology development, countless tourism leaders have great effort to gain the first and the biggest advantages through leveraging chatbots. Among business applying successfully chatbots to their operation, Marriott Hotel is a good example of the introduction of the basic task oriented Chatbots for through Facebook Messengers and Slack. This chatbot called Marriott Reward Chatbot are used as the warded loyal customer program and do specific services as a service chatbot. It could implement travel booking service with more than 4700 hotels and interact to customers simultaneously (Carson, 2019). By offering multiple languages into chatbots with diverse data from NLP method, the hotel raises a hope of enhancing guest experiences with hyper-personalized recommendation and redefining the tourism standard.

ChatBotlr is a chatbot introduced from Aloft Hotel that offer quicker service request including front desk services and basic information from the hotel's service by texting on the chatbot's interface in users' smartphone (Bethesda, 2017). After two generations (Botlr and then ChatBotlr), the speed of the chatbot's responding to customers' answer is improved to 5 seconds. This improvement encourages guest decides to buy more services from Aloft Hotel.

Below is Botlr's illustration adopted from Carson (2019). It shows Botlr's interface that users will see when they access to the chatbot. The colour image of the animation character, the short introduction of the chatbot including relevant links helps to stimulate guest to the close interaction and purchase decision to the hotel's services.

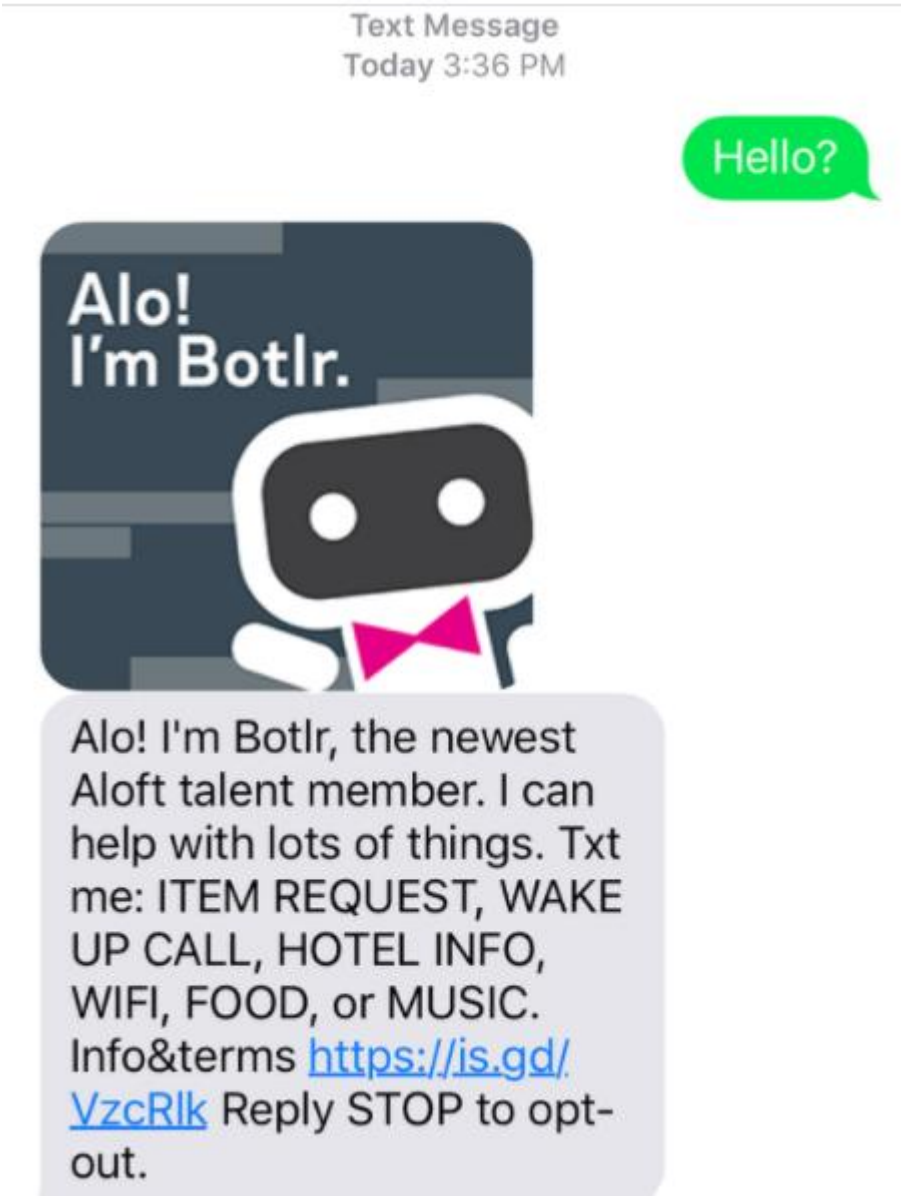

Figure 5. Botlr Chatbot-the first generation of chatbot from Aloft Hotel

2.2.2 Chatbot in restaurants

In restaurant field, chatbots provide available restaurant menus with quick recommendation, evoking appropriate and fast response to customers, especially in written forms. Allergybot is the good example of a Chatbot platform offering dining options for customers with less questions from the chatbots to the users. Moreover, similarity to hotels, reservation in restaurants is utilized with functions including changing, rebooking or cancels tables or relevant services in hotels

(Gamanyuk, 2017). Burger Kings is a typical example for Chatbots application with their own chatbots platform in fast food industry (Kishor, 2017)

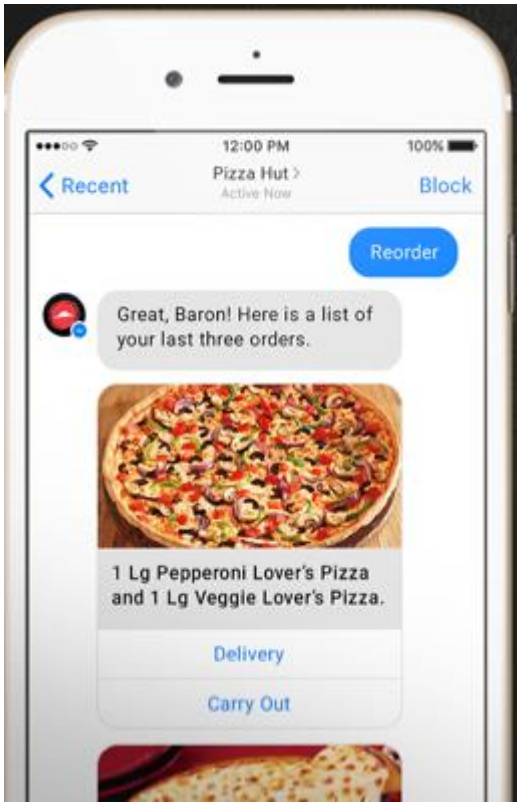

Figure 6. Pizza Hut Chatbot example (Vincent, 2016)

Figure 6 shows one of function of Pizza Hut's chatbot, which is order or reorder's request from customers. When chatbot systems receive information relevant to order or reorder from users, the chatbot would offer specific option on the given menu with the high-quality picture and short description about ingredients of the food.

2.2.3 Chatbot in travel agencies

Information retrieved is a significant factor to utilized chatbots in travel agencies and other related field (Glass et al., 1995). The chatbot has ability to provide information, confirm bookings including early or late bookings and handle pick-up areas even with outlying locations on given advanced

bookings (Negi et al., 2009). Answering questions, reminding the trip date, recommending important attractions within the destination (Ukpabi, 2019)

Travel Agents tend to have implementation of chatbots as tools to build stronger customer-companies' relationships (Buhalis & Cheng, 2020) and enhance the users' experience effectively (Accenture Interactive, 2017). Below is booking simulation of Chatbots in Travel Agencies adopted from Lino (2018)

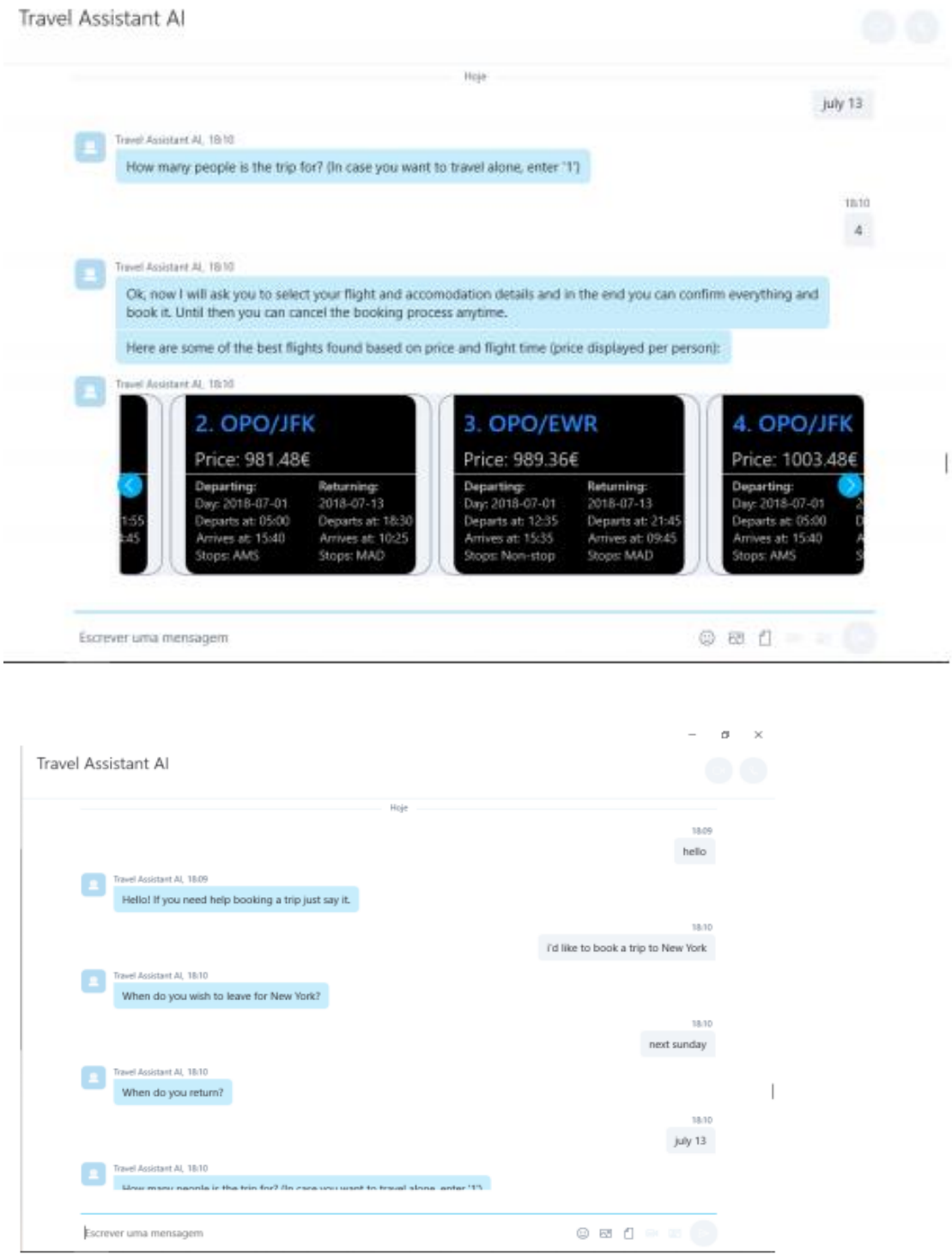

Figure 7. Booking Simulation of Chatbot in Travel Agencies

2.2.4 Competitiveness and technology innovation

Competitiveness in tourism is the concept with broad spectrum of definition. Competitiveness term in tourism is viewed as the ability to provide good quality of products and service for gaining market share in the industry innovatively and substantially (Dupeyras & MacCallum, 2013). Competitiveness is the basic determinant for countries' wealth, development, and suitability (Porter, 2005).

Innovation and technology advancement are some of factors creating companies' competitiveness on their own marketplaces (Johnson & Scholes, 2002). Technological innovation happens in products, services, production, management, and operations in firms. When companies have ability to get their technology advancement faster and deeper with strategic thinking, their business may get competitiveness and win the market (Nonaka & Teece, 2001).

Technology capability plays determinant role on firms' competitiveness (Haque & Bell, 1995). Competitiveness in tourism is the common theme spotted and associated with revenue, profit and the contribution of technology development including chatbots (Puclea & Padurean, 2008). In addition, the factors of potential competitiveness are listed as technology involvement, price, productivity, cost indicators (Tefertiller & Ward, 1995). Productivity and efficiency have the close relationship in using available resources to produce the certain service or products in the certain time. Technology indicators consist of all technological advancement factors including chatbots, robots, IOT, etc.

Chatbot is one of effective technology innovation solution used in tourism factors. This emerging technology has an essential role for tourism business's success and competitiveness. (Sweezey, 2018). Ivanov et al, (2017) noticed that technology adoption including chatbots are hailed to generate and strengthen the tourism business's competitiveness initiatives through rising their revenue and number of customers.

3 Research methodology and data collection

3.1 Thesis aim, thesis problem and research question

In hope of gaining clear readers' perception of what the research delivers, the author has great effort to review the relevant studies, research. These references origins from different sources including scientific articles, conferences, blogs, websites, etc. Some terms, phenomena are explained to draw the close connection and build the base knowledge to the reader. Besides, designing theorical background part thoughtfully is to help the author answer the research question.

More current attentions from existing literature have been highlighted on the provision of chatbots development and their application in many areas including tourism sectors (Horzyk et al., 2009; Pan et al., 2015; Zalama et al., 2014; Fan et al., 2017). Since the first chatbots- Eliza, was invented in 1996 at MIT, chatbots and its adoption to industries has been proved clearly. Some significant benefits chatbots offers to business organization are expressed as revenues and rising number of customers in many areas including tourism industry.

On the other hand, what we know about chatbots' instruction to tourism contexts is largely based on users' perception or service provider's perspective without involvement of empirical analysis (Um et al., 2020). There might be the shortage of studies in the same topic with the view of points from experts in related industries. Therefore, the author attempts to adapt and expend chatbot introduction by investigating the topic from relevant experts' perspectives. These specialists may be professional in IT, digitalisation, and tourism landscape who are chosen to present their ideas about the topic in the research.

Following the blooming evolution of chatbots, the research aim is attempting to review chatbots' adoption into tourism sectors. The recommendation for chatbot's implementation in tourism. For achieving this aim, the author decided one research question:

RQ:

- How chatbots increase revenue and number of customers in tourism sectors?

3.2 Research approaches

3.2.1 Classification of the research

Predictive approach has idea from extracting data from existing data to study trends and patterns. The result is the good source to predict future consequences, trends. The predictive relates uncertainties related to the model inputs, numerical simulation, etc. (Marczyk, 1999)

Explanatory approach includes assumptions and details basing on intrinsic nature of the respective research problem tacked on the articles. The research design has goal to identify the nature of the connection and relationship among the variables (Ivankova et al., 2006)

Descriptive approach has aim to describe phenomena as their nature (Nassaji, 2015). This research approach focuses on 'what' rather than 'how' or 'why' phenomena or events have happened. Observation and survey tools are applied to capture accurate and reliable data.

This study strives to demonstrate the chatbot's implementation in the link of developing business's revenue and numbers of customers and promote the optimal practices for tourism business. For this reason, the author has a choice of using descriptive and explanatory approach in the research.

3.2.2 Research approach: deductive and inductive

According to Trochim (2006), there are two methods of reasoning that consider as research approach- as inductive and deductive method. This part is based on the research of Trochim (2006) to contrast these methods to find the better approach for this study.

Deductive method rely on experience or observation while inductive base on rules or accepted

regulations (Trochim, 2006). Deductive approach has starting points from theory to conclusion with addition or adjustment to the original hypothesis (top-down method, general to specific method) whereas inductive method starts with an idea and end with theory (bottom-up method, specific to general method (Creswell & Clark, 2007). Therefore, deductive approach is used with quantitative data analysis type while inductive approach is commonly used with qualitative type. Depending thesis question that focus on 'what' or 'why', the author chooses inductive or deductive method with specific kind of observation (Onwuegbuzie & Leech, 2005)

The study uses inductive method with two reasons. Firstly, the purpose is developing the best practice for companies to apply chatbots in their business. Furthermore, there are lack of facts and evidence through observation in the semi-structure interview are original from thesis topic and the patterns are sufficient in the interview.

3.3 Methods

3.3.1 Types of research

Basic research has goal to detailed phenomena, process. It is theoretical and focus on principles or fundamentals. Normally, basic research helps to expand and deepen knowledge (Devadasan, 2018).

Applied research has known as practical research implement studies on specific problems or facets to suggest solutions to the society. The applied research has big concern to optimize social benefits through bringing required information for further encourage and stimulation application (Devadasan, 2018).

Basic research does not focus on the practical application (Bush, 1945 & Bentley et al., 2015) whereas the applied research recommends improvement in practice (Devadasan, 2018). Therefore, basing on above analysis, in my study, data will be analysed to figure out the best solution for companies to adopt chatbots in their business by using applied research.

3.3.2 Method dimension

Qualitative method is conducted by analysis of the common items with the high role of participants and described by persuasive language (Creswell, 2005).

Quantitative method is defined as a method to explain phenomenon through numerical. The specific quantitative method consists of survey research, experimental research (Apuke, 2017). For quantitative method, checking hypotheses and concerning about cause and effect (Lichtman, 2006, p.7; Johnson & Christensen, 2008, p.34)

In addition, Baumeister & Leary (1997) and Tranfield at al. (2003) emphasis that **literature review** has identified with synthesizing previous research. This method creates advancing and valuable information and theory (Webster & Watson, 2002; Torraco, 2005). This method is suitable for research that relates to provide the critical elements of concepts in sectors that less researchers study (Snyder, 2019) to evaluate the accuracy of the study (Tranfield et al., 2003)

The study emphasis on best practice for integration of chatbots into tourism industry. For the goal of solving this practical issue, the researcher uses applied research with qualitative method.

3.4 Data collection methods

3.4.1 Overview

The semi-structured interview is often adopted for qualitative research. It allows for discovery with open discussion beyond the interview question outline (Magaldi & Berler, 2020). A lightly structured interview with less strict framework and open-ended questions are commonly used in qualitative research method (Mason, 1994). The interview format is used to examinate new insights, approach or topic or ascertain given situation or issues (Corbin & Strauss, 2008; Creswell, 2007).

Inductive reasoning data dimension is applied in this study. Source of information are taken from interview with specialists. These perspectives from the interview specialists supports to strengthen the trustworthiness of my research (Bekhet & Zauszniewski, 2012).

Chatbots implementation has not yet been leveraged sufficiently and commonly in business in Finland (Steering group, 2019). Therefore, collecting data for the research from business provider, citizens may face with many obstacles and disadvantages. For gaining high reliability and validity of data gathering, the author decides to conduct interview with participation of specialists, experts, executives who have numerous chances to be familiar with and expose of chatbots' deployment or similar technological platforms in practical situations and in tourism context.

3.4.2 Interview selection and process

Criteria to choose interviewees bases on research purpose. The interview participants are those who are specialists or at least be interesting in tourism sectors or technology in general, especially chatbot (by academic profile or projects, blogs, status, talks in either tourism or digital factors, technology and relevant achievements and awards)

Table 1. Interviewee's introduction

Number	Interviewees	Current job position/ specialisation field	Details
1	A.	Digital business specialist	Experience more than 10 years in software companies, universities in the areas of digital business development, process improvement and innovation application in business, including tourism and hospitality sector
2	T.	Lecturer, ICT, and digitalisation Specialist	Experience more than 10 years in customer service, ICT implement, innovation development

3	N.	AI engineer	Work as a PhD candidate in AI field in Finland and experience 8 years to study AI Write articles about improving effectiveness of AI and joining projects relating using AI in SMEs in different business area; competitions such as creating tourism service design with AI usage in Covid 19 time
4	L.	Travel Agency executives	Experience 10 years in travel and tourism Work as a tour operator, a travel agency executive in Vietnam, Dubai, UAE, Casablanca, Morocco.
5	Thuc.	Marketing and innovation specialist	Experience more than 5 years in digitalisation development and marketing Participate projects relating to chatbots and robotics for food delivery companies, restaurants
6	Thuo.	Software engineer	Experience 5 years in software development, innovation implementation and ICT support for companies in Vietnam

Channel to find interviewees are through social medias, some website and ask people in my social network. Ways to carry out data are the one -by-one interview in online meeting form. Participants will be informed with interview record. After each interview, the author makes full sentences with transcripts from the record. Participants' response from the interview are quoted and present in the previous chapter with the form (Int+ number). A good example could appear that the interviewee 1 is shown with the acronym (Int 1).

The guests are expected to answer with 4 themes including the benefits, the challenges of chatbots usages in tourism, the company's out-standing factor and the suggestion for chatbots' better use. There are six experts invited to join the interview and the number of interviewees may increase until the data saturation is reached. Every interview lasts from 10 to 30 minutes basing on how much deep and detailed the interviewee's ideas are. The author's role is to remain the interest of the conversation with specialist and navigate them on the track of planned questions to answer the research questions.

4 Result and discussion

4.1 Benefits of chatbots usages

The participants emphasize on the speed of response to customers and the wide availability of chatbots. The interviewee 4 noted that: "Fast reply to customer is the halfway of company's success.". The interview 3 explained "Chatbots could answer 27/4 despite of differences between time zone, early morning, or late night. Unlike to human staff, there are no holiday, no sick leave, no shift rotation form chatbots. The convenience of using chatbot is highlighted." The guests identify why chatbots beneficials to the business thank to the cost- reduced factor. The interview 4 and 5 explained their own ideas about the chatbots' speed. The interview 4 revealed that:

The huge advantages of chatbots comparing to human staffs is arise with reducing extra cost for human labours, from service provider's perspective. Normal staffs need to get extra fare called overtime bonus, especially in Finland with strict and high-paid salary per working hour. Therefore, companies may get more customers and more financial benefits. (Int 4)

To express deeply about the chatbot's respond, the interviewee 5 insists that:

Due to the surprising chatbot's reaction speed to customers, the users can get answers almost right after they send the questions. Comparing to 24 hours downtime for staffs answer, this fast reply is the winning point for company with high ability to turn attract more loyal customer for companies.

Other view expressed commonly that interviewees put weight is the function of chatbots to service customers. “Chatbots can do most of things a staff can do for the customer including booking, ordering, reordering rooms, foods, checking flight schedule and suggesting good flight with affordable price.” (Int 4). The interviewee 3 noted that “These supports are sent to customers quickly with nice picture and clear explanation. With the simple questions from users, chatbots implement the task as good as the staffs.”

All benefits that participants mentioned in the interview are listed as follow.

Table 2. Summary of benefits of chatbots usage from the interview

			Restaurants	Hotels	Travel agencies
Viewpoints from customers	Booking	Book or cancel booking rooms		x	
		Book or cancel booking tables	x		
		Book or cancel booking tour			x
		Order or re-order foods	x		
		Order or other extra services	x	x	x

	Recommendations	Recommend cheaper flights or less-transition point flights at the same date, departure, and destination.			X
		Recommend menu	x		
	Information Display	Check opening or closing status	x	x	x
		Check available flight with specific date, time, price, etc			x
		Helps with self-service: check-in, check-out			x
		Display latest update to customers, including promotion or special package.	X	x	x

From service provider's perspective		Upsell new services and increase revenue	x	x	x
		Gain valuable data from customers	x	x	x
		Cost-saving because chatbots can serve many users simultaneously	x	x	x

The above table presents values that chatbots bring to the business from customers' view of point and service provider's perspective. From users' perspective, the benefits may be categorized by three big themes including booking (book or cancel booking rooms, tables, etc), recommendation (the best flight, the suitable menu, etc) and information display (check-in and check-out support, closing and opening time, etc). The benefits from service provider's perspective including cost-effective solution, data collection, etc) may cover all fields in tourism sectors, which are consist of hotels, restaurants, and travel agencies field.

4.2 Significant challenges

The respondents mention about some limit about usage of chatbots in specific cases. The interview 4 noted that "The senior tourists in a s tend to refuse to use chatbots or any technology to get information or order service they want. The reason could be their high demand to interact

with real human with emotional communication" (Int 4). Moreover, the Interviewee 2 agreed that "Despite of the spread of technology in many areas including tourism sectors, there are impossibility for old group to access and accept convenience of technology, including chatbots due to their lack of technology skills and the unwillingness for the new things" (Int 2).

Specialists raise their big concern about the accuracy of chatbot's answer. The interviewee 4 insisted that "Chatbots are good at simple questions including low-valued repetitive tasks, not complex ones" (Int 4). To clarify the idea about the reliability of information that Chatbot's offer, the interviewee demonstrated that "With difficult questions perfumed with tricky keywords, chatbots may react with unprecise or vague answers. In this situation, chatbots may provide insane or meaningless answer; notice to users with error sign or refuse to answer" (Int 3).

There is a link between the age of customers and level of clients' trust and acceptance for chatbot usage are demonstrated in interviews. The interviewee 5 argued that "The young users have more advantages to access all technology advancements and has ability to raise their interest in digitalisation, including chatbots. If chatbots communicate with them in friendly way, this customer group will accept chatbot and would feel comfortable to use chatbots" (Int 5).

The participants raise concerns about data security issues. The interviewee 3 stated that "They do not always trust chatbots because they are afraid about the safety of their personal data. I think once all information shown on the internet has high risk to be leaked, no matter what form of data are including text and images in Facebook, website, etc" (Int 3). The level of human-like simulation that chatbots adapt are examined by the guests. The interviewee pointed out that "Some people have strong belief that chatbots are just a machine, a tool and not currently a human yet" (Int 1). Therefore, the interviewee 1 revealed that "There are two scenarios may happen, according to the experts. In the first scenario, the users could feel disappointed and predict that their expectation could not be met because the chatbots are not as good as real staffs" (Int 1). The interviewee 2 noted that "The second scenario could be expressed that users have more open-minded feeling to talk to chatbots because chatbots cannot judge them or laugh at them if their questions are insane, meaningless, or crazy, which human-like staffs could not be expected" (Int 2)

Experts highlighted on the fast change of technology in general and chatbots and the demand of

updating and maintain the system. The interviewee 6 claimed that “It is necessary to keep updating and maintain the good server of chatbots and other technology platform. This is the life -or- dead situation for all business who are using chatbots” (Int6). However, the interviewee 5 commented that “Updating chatbots is like other investment way. It needs financial aid, facilities, human resources (technicians, engineers) to support to the updating session” (Int 5).

4.3 Organizations’ competitiveness

The multi-facet insights from the linkage of business’s competitiveness and chatbots are clarified by specialists. The interviewee evaluated that “Using chatbots in business do not always give company a huge effectiveness and competitive advantages” (Int 1).

In term of the important role of the fast respond of chatbots, the interviewee 5 explained that:

However, in most of case, application of chatbots or technology brings higher revenue through attract and keep more customer stay in the companies. When users’ queries including ones are shown at midnight, are not responded, customers may get frustrated and impatient and then find the company’s competitor to ask and get service from there. Therefore, it can be said that anything makes service is faster, that is the winning point for company. Clearly, chatbots contributes to enhance the competitiveness of companies by using to keep users stay longer with them. (Int 5)

The guests investigated about relationship between collaboration and being outstanding differently. The interviewee 3 believed that “Competitiveness of organizations for more customers and more revenue are something unique that companies want to keep in secret. Hence, if companies do not connect or co-operate to each other, especially the small companies, they are easily to be left behind and be kicked of out of the technology game” (Int3)

4.4 Recommendation for Chatbots application

The interviewees expressed their ideas about if the whole tourism sectors need to be digitalised and use chatbots or not. The interviewee 1 emphasised that “Despite of fast-paced technological innovation, the presence of chatbots do not guarantee for monetary benefits for company.

Therefore, chatbots has not always trustworthy for the organization to be created. The first thing company should decide is if they need chatbots or not" (Int 1). The interviewee 1 added "However, the increasing number of companies whose chatbots could make peer-pressure for companies at the same industry. This may affect to their decision about obtaining or not obtaining a chatbots" (Int 1)

In term of adding some features to chatbots, the experts convey their deep message to the companies in tourism field. The interviewee 5 showed that "Emotional interaction is the factor to attract more customers and keep them stay with company. Therefore, chatbots technicians could consider about putting emotional feature to chatbots" (Int.5).

In regard to the concept about adding the serious or the funny style with jokes to the chatbot, the interview 3 explained that:

It is helpful if jokes are added to the chatbots because it makes chatbots more human. However, company should consider about if the conversation context should be serious or friendly basing on customers' background and expectation. For example, users with business background tend to prefer serious dialogue with chatbots. The jokes chatbots add in would make distraction or frustration to the customers. (Int 3)

Interviewees had suggestions about elements companies need to analyse when using chatbots. Chatbots' scope, chatbots' features need to be suitable for the company's target. The interviewee 3 proposed that "In term of technology, it is not necessary to get more features for chatbots than the company's expectation though chatbots with more features sometimes get higher appreciation." (Int 3)

The interviewee continued to demonstrate that:
For example, if company just need a chatbot with ordering or booking feature as the main one and service 100 customer per time, it is wisely to pay for 100-customer chatbot's package. If the business performance is better and the demand of serving 1000 customer is real, the company could upgrade the package and pay with higher price. (Int 3)

The interviewee 6 believed that “Chatbots is not a race, it is an investment” (Int 6). The interviewee 5 noted that “The human resource, financial resource should be considered well when investing to chatbots” (Int 5). The interviewee 3 pointed out that “In addition, the speed of chatbot’ response, the accuracy and updating level of response need to be improved. This can be carried out by technician of the company or chatbot provider to keep the chatbot run smoothly” (Int 3)

The interviewee 1 persuaded about the necessary of purchasing push-up when implementing chatbots:

From business insight, providing precise and necessary information to chatbots to learn and response is not enough. It is needed to add statements or questions that can speed up the users’ decision process to purchase the company service. The brief, simple and attractive instruction for purchasing is things need to be analysed well. More importantly, the company need to build the measurement or criteria to assess if using chatbots is effective or not. (Int 1)

Experts took their turn to suggest good approaches. The interviewee 5 noted that “It can be implemented by feedback such as voting start from users” (Int 5). The interview 1 proposed that “After this evaluation, companies would have good proof to give decision about investment, maintenance, enhancement the chatbots” (Int 1).

The specialist mentioned about how to use normal staffs and chatbots to deliver service. The interviewee 3 commented that “It is essential to have task distribution to human staffs and chatbots” (Int 3). The interview 5 added that “This collaboration between human employee and chatbots employees needs to be clarify thoughtfully to serve customer well and turn them from visiting users to loyal customers” (Int 5).

In term of unification and coherence in the chatbots’ answers and other channels of the companies, the interviewee 2 demonstrated that:

The easy tasks including booking, ordering or reorder service and service introduction should be in charge in chatbots while the more complex questions are solved by real staffs. The chatbots should be designed to notice to customer that they will transmit the questions to staff or navigate them to

relevant website that users can find information easily. The notice is to ascertain that there is no conflict in the answers delivering to customers from websites', chatbots', and staffs' channel with the same question at the given period. (Int 2)

4.5 Potential application of chatbots and digital trend

Interviewees gave their own insight about the technology trend and future of chatbots' introduction. The interviewee 3 stated that "Technology advancement application is the inevitable trend. If any business refuse to follow this trend, it means they said set endpoint to their business soon" (Int 3). The interviewee 4 showed that "The exist of chatbots or any kind of technology tools stimulate the development of tourism industry" (Int 4).

In term of comparation of the importance of chatbots and human staffs in efficiency of customer delivery. The interviewee 1 insisted that "What customers want is that their questions or demands are met. They do not care who or how help them to do that. Therefore, chatbots or real human employees do not make distinctive factor or competitive advantages for satisfy customers" (Int 1). Correspondents demonstrated their thoughts about the level of digitalisation transformation. The interviewee 3 explained that "Digitalisation changes, including chatbots application do not applied to all business, all aspect of business system and not happen everywhere. There are some limitations about their company's goals, resources in human resource, financial or other objective factors" (Int 3). The interviewee 6 persuaded that "Tasks or things digitalized easily will be maximized their potential for business's advantages whereas tasks are not digitalized, it is proved that they are extremely valuable in long term and in near future" (Int 6)

4.6 Discussion

There is a slight change in using terms among the author, the participants when rising individual's ideas about chatbots in tourism context. In the theorical background chapter, the author tries to define 'competitiveness' with specific terms including price and cost, productivity, and technology. However, the indicators of competitiveness are shortened by the experts in some extent. It is

clearly that most of interviewees referred to this term in their talk relying on their own definition. They implicated ‘competitiveness’ from the view of the company’s revenue and the number of customers. Thus, the author decides to review use terms ‘revenue’ and’ number of customers’ instead of ‘competitiveness’ to reply to the pointed research questions and reach the article’s aim in discussion and conclusion chapters. This conceptual change brings to the author the surprise, interest, and slight challenge to interpret the specialist’s ideas to answer the research question.

The study’s goal is to examine the chatbots adoption in tourism landscape in the relationship with company’s competitive advantages and recommend the best practice for tourism practitioners and related personnel to utilise chatbots in their business. The interview process was planned on the purpose of achieving this thesis’ aim. After analysing the interview result, the author can offer detailed and sensible answers for the research question mentioned in the previous chapter.

RQ: How chatbots improve revenue and the number of customers in tourism service providers?

The participants of chatbots in tourism industry with their own outstanding benefits are emphasis on the main reasons to raise company’s revenue and number of customers. The fast response from service is considered as one of the most prerequisite to help tourism companies survive and develop with more customers and more financial benefits. Especially, the collaboration between real staffs and chatbots with the technology also highlights the usefulness of using chatbots in tourism industry. Moreover, the machine factors such as the availability 24/7; no working benefits such as sick leaves, etc and multitasks in deliver service are attributes to the chatbots’ advantages in tourism industry. Thus, chatbots shows significant positive influence to raise the number of potential customers and then turnover to tourism organization.

The trust and open-minded attitude could be raised firmly from users, especially the tech-savvy customers who are young and can adapt quickly to new technology. Their trust to chatbots may deepen when they convey message and release questions to chatbots. This may create the close connection and commitment to the users and turn them into company’s loyal customers. Thus, the revenue obviously increases with the increasing number of customers. On the other side of customer perception to chatbots, different insights about customers trust and acceptance chatbots in service are mentioned, including user’s doubt in the accuracy of chatbots’ answers and

their comfort to interact to them. However, it is evident that when customers' needs are fulfilled despite of their earlier negative perspective towards to chatbots, they almost seem satisfied. Hence, the companies have potential to keep them stay with their service and elevate their revenue from them.

5 Conclusion

5.1 Chatbots adoption in tourism landscape

Chatbots together with other technology change the business's surface including tourism sectors with the widespread and irresistible trend in this digital era. Chatbots stay beneficial to the business, especially in revenue and the number of customers, mainly though fast and active reply immediately regardless of time and space, the trust from customers and effectively tasks implementation. These outstanding features complete chatbots as an efficient tool to extend the business's revenue and customers in tourism tour.

Technological innovation wave, including the surprising chatbot' development brings both obstacles such as peer-pressure and valuable opportunities to the firms. To optimize this chance, the tourism business may have strategical thorough consideration in selection of technical partners, chatbot function and other relevant objects that are appropriate to the company's accountable target from chatbot's distribution. The chatbots and other technology maybe not always exist as a non-stop competition. However, without sufficient investments in chatbots in different areas and levels, the profits-oriented organizations in tourism lose prospective support and may be left behind their competitors.

5.2 Best practice suggestion

The recommendations of using chatbots effectively are offered and analysed from technology and business view of points. Despite of the peer-pressure among companies when the number of chatbots are used in the industry, usage of chatbots is not always necessary and beneficials for companies. The decision about engaging their users with or without chatbots is essential to thoughtfully considered as the starting point to enhance company's revenue. In addition, 'less is more' may be a good lesson for service providers. The multifunctional chatbots seems not always

to work more effective than the single function chatbots. The right question should be examined by companies is how much functions are sufficient in their circumstances.

On the basic of finding, the next step may relate to clarify the company's measurable demands and targets including the number of supposed customers at the chatbot service, the main function chatbots implement. The accountability of company's expectation might drive organization to assess the effectiveness of chatbots usages in business precisely. This evaluation contributes to the suitable changes for better future revenue.

The other outstanding suggestion from guests are the relevant accurate data input, the supplement of emotional factor to chatbots, purchase process push-up function. Human-like element including emotional factors such as cheerful, sad, joyful, upset, sympathize should be replicated carefully to the chatbots and apply to the real context. This function may form the close connection from users, chatbots and the companies for the revenue and potential customer's purpose. Moreover, chatbots' reaction should be designed to raise intention to products or service purchase and then accelerate the buying action form users. To carry out these tasks, the investment from companies in human resource, financial aid and technology innovation are necessary.

Besides the technical departments in some organizations, a good selection to the right chatbots providers in the markets with suitable service package to the company's target and affordable price is needed to get high priority in the companies' investment. During the chatbot's implementation, the technical agencies may ascertain to maintain and upgrade chatbots run smoothly and quickly with less bugs and more accurate information. This effort should be practiced continuously to satisfy customers, attract more clients, and raise companies' financial benefits.

5.3 Research limit

The author decided to stop interview process when the saturation point is touched. It means when the same ideas are repeated several times and no news comments are raised by guests, the data

collection comes to an end (Power et al., 2015, p.372). This happens at the meeting with the interview 6 (Int 6). Therefore, the size of the research' interview is six.

The interview was conducted with six participants from different backgrounds and profession in technology, innovation, artificial intelligence, tourism and hospitality, marketing, and business. The bias from the article might be identified due to the natural feature of the empirical study with the small size of participants.

The narrow and depth degree of their own personal experience may affect to research's result part. It may be challengeable for the author to figure out respondents who are specialized and has interest in both tourism and technology sides.

The online interview format may provide the advantages for both sides in transportation. The authors did not always see or hear the interviewees' body language because of the internet access. Human in general and the specialist in the research may has different response in the online form and offline form of communication. Moreover, this caused less accurate prediction and the low and less effective reaction from the author to participants when interviewees seem to lose their track, repeat their ideas, and feel demotivated I the online environment.

The scope of geographical areas relating to chatbots' usage is not detailed sufficiently. Therefore, it is not easy for the author to outline the bigger picture of the topic with relevant typical examples in chatbot's instruction with specific solutions in respective context.

5.4 Further research recommendation

Based on the research limit on the previous chapter, the scholars soon may observe more than six experts to raise the sampling size and reliability level for the research. The interviewees' background of education and work might be changed in specialization way on the next studies. Particularly, the ideal guests' background can be shown that each participant is specialised in at least one respective tourism sectors- hotels, restaurant, travel agencies together with at least one expert in chatbots or AI. This approach can create high possibility for innovative ideas or insights form specialist.

Going to the depth of the topic, the future researchers are expected to investigate chatbot's integration in another branch of travel industry- airlines field. Thus, the tourism sectors could be investigated completely. The other aspect should be examined deeply on the next research is the human-machine relationship from behaviour psychology besides the natural science view of points. The sensitive attributes are encouraged to observe is the possibility of sexual abuse, violent abuse, and other indecent communication way in the conversation from male users and chatbots.

5.5 Ethical issues

Ethical problems are expressed with interview meetings and result part in the research. Participants 'personal data about their real names and their study and work background are highlighted on the interview. Interviewees are noticed with available cancel right for joining the interview anytime by either written or spoken signals and avoid existing on the thesis. The specialists were asked to get permission about interview record for the research analysis and their own name existence in acronym form in the article.

Confidential from participants' privacy have taken in a good consideration. All materials will be destroyed after the thesis is completed. Data materials used in the research composed of the guest's voice, face and words in video record and interviewees' name in acronym form. To raise the effectiveness of data protection, the anonymisation are applied to all identification data from interview. In another words, the information cannot reintroduce the identification back to the materials. Moreover, there are no link to the new data and the orate materials. In addition, data from interview will not be transferred outside the research team and misused from research purpose.

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Appendices

Appendix 1. Cover letter for interviewees

Dear the receiver,

I am the student in Tourism Management major in Jyväskylä University of Applied Science. I am conducting a thesis with title' Application of chatbots in tourism sectors- Observation and suggested best practices to tourism business.

Although I might not know about you deeply, I still strongly believe that your participation as a job position with experience would play huge valuable and interesting addition to my research. If you

could spend about 15 minutes for an online interview next week, I would be grateful for you great help.

I am willing to hear your suggestion with your expected interview date and time to choose the suitable time for us. I am ready to share with you the interview outline and other basic information about my thesis.

Thanks and regards,
Linh Tran

Appendix 2. Interview outline

1. Case description

A profit-oriented organization X would like to implement a chatbot to help their target customers feel secured, trustful and get faster and personalized information for their customers. Their target group of customers is the young people who are around 18- 30 years old. The offerings from companies are depending on its given sector such as accommodation (hotel sector), food and beverage (restaurant sector), travel activities (travel agency sector)

A profit-oriented organization X could be:

A. Hotel A

B. Restaurant B

C. Travel agency C

Benefits of Chatbots

- Personalisation conversation with customers. It helps improve customer experience
- Deliver service faster and simultaneously
- Get interaction safety
- Cost-saving

2. Interview structure

- Chatbots in tourism sectors-> What values and benefits that chatbots bring to tourism sectors? -> What possible challenges companies may get when using chatbots to serve customers?
- Business' competitiveness ->How chatbots help a company outstanding from other companies in the same industry with the same products? What should hotels, restaurants, travel companies do to utilise chatbots in their business?