MODUL UNIVERSITY

PRIVATE UNIVERSITY VIENNA

How can business process automation prepare Hotels to increase productivity in a growing digital world?

Bachelor Thesis for Obtaining the Degree

Bachelor of Business Administration in

Tourism, Hotel Management, and Operations

Submitted to Yuliya Kolomoyets

Felix Ferdinand Fuhrken

1811001

Vienna, 10th of June 2022

Affidavit

I hereby affirm that this Bachelor's Thesis represents my own written work and that I have used no sources and aids other than those indicated. All passages quoted from publications or paraphrased from these sources are properly cited and attributed.

The thesis was not submitted in the same or in a substantially similar version, not even partially, to another examination board and was not published elsewhere.

10.06.2022
_____

Date

1   Abstract

Business Process Automation (BPA) is making it possible to automize various business processes through the use of technology. It supports the streamlining of a business and makes it possible to operate on a simpler level. Furthermore, productivity can be increased when BPA is done right. The modeling of the processes is an integral part of the movement toward BPA and is referred to as Business process modeling.

The objective of this research is to understand how BPA can support hotels to increase productivity. For the research semi, structured interviews were held with hotel experts. Together with the literature, the interviews set the basis to gain an understanding of how productivity is achieved through BPA.

The results of this research point out that currently the hotel industry is not yet using a holistic BPA approach and focuses on digital tools to fix immediate pain points which leaves the hotel organizations with a wide variety of tools that make the hotel not gain or lose productivity as the tools to take away work whilst at the same time providing extra work for employees to handle and deal with all these tools.

Table of Contents

Contents

2   Introduction

In the past, Business Process Management (BPM) has been a significant factor for businesses to identify areas for growth. Today, technological progress and innovation, as well as reduced costs make it possible to adopt Business Process Automation (BPA), to further push performance and productivity (Carter, 2021). BPA allows hotel organizations to transform repetitive manual tasks to streamline the business processes (Hotel Tech Report, 2021). With such an automation effort, hotels could become more productive and make the working environment more fulfilling for employees, especially the business processes in the front office, food & beverage, and housekeeping department (Krstic et al., 2015). The report by (McKinsey & Company et al., 2020) points out that companies pursue automation efforts to keep up with their competitors or to gain a competitive edge in the market. In the long-term, BPA will grow to become the new standard, evident by the growth of investments which is set to exceed over one billion dollars per year until 2023 (Carter, 2021).

BPA makes it possible to automize the entire business process within a hotel or other organizations. Although the benefits are evident, many companies struggle to successfully incorporate due to a lack of understanding, knowledge, or poor planning (McKinsey & Company et al., 2020). Currently, not many companies have fully utilized BPA, some of which question the need and the associated costs. Some companies only work on BPA as much as they need to not fall behind their competitors. The traditional method of approaching process improvement via BPM will fall short of expectations in the long run, as it might improve processes yet not accelerate them.

Research on the topic of BPA has been carried out on various levels, however scraping only some parts of the hotel business processes while other business processes have not been highlighted yet or discussed (Kim et al., 2008).

The current bachelor thesis research builds upon the extant literature and explores the state of technologization (automation) of the business processes in the Viennese Hotel sector. Specifically, the thesis aims to investigate the current state of the BPA

and the issues and trends associated with it. This is done by answering the following research questions:

What is the current state of BPA in the Viennese Hotel sector?

How do Hotels in Vienna use technology to automatize work?

What benefits could automation bring to Hotel's business processes?

What hinders further technologization of the business processes?

The results are expected to show how essential is the adaptation of BPA for hotels to increase productivity, stay ahead of the market, and boost the performance of the organization.

The research starts with the literature review section, to the extent where the use, needs, and functionality of BPA are discussed, explained, and explored. Understanding what companies, that adopted BPA successfully, do differently in terms of their adaptation approach and the strategies deployed are described and discussed. To dive deeper into why BPA increases productivity the investigation and interviews, give way to a better understanding of which departments and processes of a hotel can benefit the most and how. Without this extensive research, including expert interviews, there would be no practical and hands-on examples of how to boost productivity and performance by adopting BPA.

3   Literature Review

Business Process Automation is moving into the spotlight for many companies that wish to achieve better results. It is essential to understand what Business Process Automation (BPA) is and how it can benefit any business in its unique way. Gartner (n.d.) describes BPA as the "automation of complex business processes and functions beyond conventional data manipulation and record-keeping activities, usually using advanced technologies. It focuses on "run the business" as opposed to "count the business" types of automation efforts and often deals with event-driven, mission-critical, core processes. BPA usually supports an enterprise's knowledge workers in satisfying the needs of its many constituencies". A simpler definition suggested by McKinsey and Company et al. (2020, p. 12) says that BPA is a way of moving manual work to be done automatically by using systems and technologies that enable this transformation. This leads one to think of automation as a great tool to enable faster and more concise work. Pure definitions, however, merely describe the term but not the environment it would be applied. For many companies, BPA is still something out of reach for several reasons including the level of expertise needed, the cost factor, as well as firms not taking BPA into their strategic plan due to focusing on short-term wins. For the Tourism industry and specifically the Hotel sector there are lots of opportunities associated with an advance in technology, including BPA. One example is the case of the Henn-na Hotel in Japan which operates the entire service process with Robots (Reis et al., 2020). Hotels that are not going to make use of technology and BPA are going to lose their completive edge as time passes and others are increasingly running faster and more productive business operations (Carter, 2021).

3.1   Productivity in the Hotel Industry

The hotel industry as part of the tourism industry is a service-driven industry which shows a paradoxical relationship where the service industry spends far more on information technologies but productivity yet stays below that of other industries (Roach, 1991 as cited in David et al., 1996). To better understand productivity it should be defined, for David et al. (1996) productivity is "the ratio of output units to input

units in a system" and for McMahon (1994) productivity can be calculated by taking wealth produced and dividing it by resources consumed. The definitions vary, for David et al. (1996) there is no profitability metric included and therefore the ratio is purely focused on productivity, whereas McMahon (1994) points out that the formula used can by economists be applied as a factor to determine the "standard of living". The paradox assumption is questioned by the design and analysis of the study performed and David et al. (1996) set out to discover productivity in the hotel industry. The study by David et al. (1996) concluded that information system technology does not always improve productivity, but it can increase customer service levels, overall, the results for productivity were mixed from being productivity adding such as a front office and back-office system to productivity decreasing such as the inventory control system. Since this study is out of date a new study could be conducted thus allowing the same measures to observe the change in hotel managers' attitudes towards the productivity of technology today. The research conducted by McMahon (1994) has compared the productivity in hotels between the UK and Germany and has found that the German hotels can operate with fewer staff due to the hotel staff training that takes place in the education and hotel industry system to generate a predetermined standard. Therefore the study has concluded that organizations need to adjust their organization mission and objectives in various areas, on the second level there is a need for "performance standards, productivity measurement, and control" as well as better people management that includes training and a reward system (McMahon, 1994).

3.2   Tourism Information and Communication technologies trends

When mass tourism began in the 1960s, travel differed significantly from the way it happens today (Benckendorff et al., 2014). Tourists today use technology as an add-on that enhances or extends their range of activities for them, but it lacks a change in travelers' behavior (Benckendorff et al., 2014). When technology changes the traveler's behavior, a new stage of technological capability is reached, in this case, a structural change happens. Over the last 10 years co-creation and shared experiences

via various networks have emerged ringing in the stage where technology changed travelers' behavior (Benckendorff et al., 2014). With the basis being that travelers are becoming ever better connected to the places they plan on visiting even before they go, Benckendorff et al. (2014) have identified 10 major trends in tourism information technologies that are the driving force for change in the industry:

1. Ubiquitous artificial intelligence
2. Fragmentation of information
3. Digital elasticity
4. Storytelling
5. The empowered digital traveler
6. Big data and analytics
7. Smart machines
8. Material technologies
9. Open systems
10. Convergence

Now travelers have started to actively participate rather than simply consume information over their devices. A new traveler who tries to get more authentic experiences has emerged since technology-enabled understanding a better-educated traveler. The use of information and communication technologies (ICTs) is an essential part of traveler's daily life, but these can also be used to prime tourists' behavior according to Tussyadiah (2016). There are several ways that marketers can motivate travelers to behave in a certain way. These priming effects should impact travelers' behavior, this can be achieved by for one motivating travelers through rewards but even better by simplifying tasks also referred to as increasing ability (Tussyadiah, 2016).

What is meant by increasing ability is well described by Andersson et al. (2018) who suggest that "customization to the user, relevant and contextualized information and feedback, commitment, and appealing design are important aspects when influencing users to behavior change through smartphone applications" supporting the notion

that not rewards but the ability is a key aspect for traveler's behavior change. Another study by Hong et al. (2020) suggests that there is a relationship between math-related literacy and knowledge which influences the relationship between a traveler's behavior and ICTs. The research found that math literate travelers generally travel further and use the internet more frequently. This assumption might need to be critically evaluated since the basis was math literacy which can also imply that these people could tend to be well off financially and therefore have the purchasing power to travel further distances to their destinations. Nonetheless, this insight reveals that there are several ways that ICTs influence various trends in the tourism industry.

3.2.1 Customer Trends

For the last decade, artificial intelligence has been praised all over the place. However, the technology is not yet close to its foreseen capabilities. For the moment we humans have wrapped around technology to make it work and the accompanied productivity of this technology is hot air and merely a vision (Benckendorff et al., 2014). In the future artificial intelligence (AI) will be much more capable according to Benckendorff et al. (2014) who forecast that if the technology becomes more focused on the needs of people and their lifestyles. Research by Li et al. (2021) has pointed out that AI can be used for guest encounters, which would be especially useful during Pandemic times when social distancing is in place. Benckendorff et al. (2014) point out that tourism technologies such as apps, websites, wearable computers, and even virtual reality are becoming more mainstream, and that voice recognition and semantic search capabilities allow humans to interact more naturally with machines. For the moment AI services do not surpass the experience real people and staff can offer. Nonetheless, AI does have benefits such as the simplicity of making arrangements and continuous learning that will result in more personalized results making this technology for the moment a great supplement to a real interaction (Samala et al., 2020).

A further trend in tourism technology is wrapped around fragmentation. The internet is used more and more to find the best deals and competition is fierce. Today not only the main travel products such as hotel stays and travel modes are booked digitally but

also a new "secondary products" section has emerged that creates unique opportunities to sell dining experiences, event tickets, and more to gain market share by offering "novel combinations" (Benckendorff et al., 2014). With the ongoing fragmentation of the information available to tourists, it becomes ever more difficult for destinations to communicate effectively, this is due mainly to Online systems that take control over a large portion of the offering ranging from flights to hotels and others (Benckendorff et al., 2014). At the same time destinations are not able to exert control on what is published in the digital space outside their channels, which in return gives travelers greater objectivity by receiving peer reviews over websites such as TripAdvisor or when simply using Google and researching places (Benckendorff et al., 2014). With this ever-growing fragmentation, marketers are only left with one choice which is to adapt to the new nature of the "service (or experience) design" that makes partnerships, search engine optimization, and innovation crucial success factors (Benckendorff et al., 2014). For Hotels, it is vital to forecast demand according to research by Yang et al. (2013) whose study shows that "These empirical results demonstrate the significant value of website traffic data in predicting demand for hotel rooms at a destination, and potentially even local businesses' future revenue and performance" which means that hotels are even more reliant on destination marketing organizations and specifically their website data.

The third trend pointed out by Benckendorff et al. (2014) is about digital elasticity which means that trips are gaining a more dynamic movement where free time and work can co-exist to create a more fragmented travel experience. The digital elasticity trend surely has gained even more momentum over the COVID-19 Pandemic in which many people were forced to work from home, and which showed that remote work is possible. Even before the pandemic, the remote work statistics have increased over the years but a study by Upwork (2021) found that "Remote Work Projections are Strong: 40.7 million American professionals, nearly 28% of respondents, will be fully remote in the next five years, up from 22.9% in our last survey conducted in November 2020". With this ever-growing number of remote workers, there will also be a shift in travel patterns that will follow the digital elasticity trend. Research by Matsushita (2021) points out that the local tourism market benefits from workations as a point of

revitalization for the industry. The need for the right infrastructure meaning fast and reliable internet is much needed as part of the innovative workation approach that would be utilized by hotels potentially (Dobni, 2008). There is a lot of research currently already on the implementation of Internet of Things (IoT) devices in hotels, yet limited data is pointing out the importance of the internet provided by hotels in terms of the reliability, bandwidth, and speed which would be a topic worthwhile investigating for researchers who study IoT implementations.

The trend of storytelling is revolving all around the idea of experiencing travel and all related activities with all senses (Schmitt, 1999 as cited in Benckendorff et al., 2014). The stories get told via social media and other digital networks and therefore co-creation plays a vital role in the marketing of a tourism destination (Lund et al., 2018). The study of the destination marketing organization (DMO) VisitDenmark markets Denmark shows that user-generated content (UGC) is a big preference for their own social media posts as consumers are influenced in their decision-making process by what others have recommended (Lund et al., 2018). VisitDenmark is one example of how DMOs can make use of the emerging trends in the tourism industry. To date, there is a lot of research on the Tourism side when it comes to storytelling yet there is no further investigation of how hotels benefit from storytelling co-creation. A study by Hashim and Fadhil (2017) showed that many hotels specifically five-star hotels in Malaysia still underutilize social media as a way to engage customers specifically, the greatest challenges listed are the measuring of engagement and maintaining a level of engagement. For future research, it would be interesting to learn what exactly hotels do around the world to engage with their social media audience and in what ways it affects their business. Additionally learning if storytelling and reposting of stories similar to what VisitDenmark does with social media posts from guests would have an impact on the hotel's engagement levels and potential future business.

The customer-focused trend is the empowered digital traveler who uses IT to co-create and shape brands with a focus on electronic word of mouth (further referred to as eWOM) (Benckendorff et al., 2014). Today people lack time and therefore rely more heavily on eWOM as an opinion gathering tool (Benckendorff et al., 2014). The trust travelers put into eWOM is highly connected to the traveler's relevance as all

other advertisements and opinions that show irrelevant information are being disregarded and only organizations that "established long-term relationships" are paid attention to (Benckendorff et al., 2014). According to Hu and Kim (2018) "self-enhancement and enjoyment" are crucial factors for guests to spread a positive eWOM, the study also indicates that a happy customer is more important than one that was given financial incentives as the customer who enjoyed the stay is the one that would spread positive comments through eWOM. Guests however can also be upset about the service and this negative emotion is the factor that leads to negative online guest reviews (Hu & Kim, 2018). The digital empowered traveler is causing challenges to Tourism and Hotel managers due to the high resistance to "conventional marketing strategies", it is therefore of the utmost importance to follow content that is published about one's organization or hotel as this influence's customers' "booking intentions, trust and appreciation by tourists, and even the perception of the quality of their websites" (Ladhari & Michaud, 2015). Both Storytelling and the empowered digital traveler are closely related in many aspects and in the future, it would be interesting to see further research into these areas to fully uncover the potential for marketers to benefit from these trends and to potentially find new trends that originate from these two trends.

3.2.2   Business ICTs Trends

For the business side of the tourism sector, some trends can make business more fruitful. One example is the trend of big data and analytics that according to Benckendorff et al. (2014) has pushed intuition aside to make quality decisions based on "measurement and benchmarks". Travel organizations from all around the world are working on providing guides & tools for destination evaluation (Benckendorff et al., 2014). Tourism Canada is providing high-tech tools such as an "online library, interactive tools to access online marketing data" as well as a network that connects travel companies and travel organizations (Benckendorff et al., 2014). The systems that collect data about travelers have grown over the years to become increasingly advanced, today big data is yielding profiles from customers and guests via the hotel

Customer Relationship Management (hereafter referred to as CRM) tool (Talón-Ballestero et al., 2018). CRM systems are important for hotels as they are a "firm tool that is technology-based for developing and leveraging consumer knowledge to nurture, maintain, and strengthen profitable relationships with consumers" (Elfving & Lemoine, 2012, as cited in Talón-Ballestero et al., 2018). This kind of information can be used by hotels to work out differences between visitors in terms of the country they live in, for instance, British and German guests had similar profiles in the study by Talón-Ballestero et al. (2018) whereas the Spanish guests differed drastically from the British and German profiles based on the duration of their stay and the age bracket of the guests. According to Benckendorff et al. (2014), tourism destinations can track and analyze data posted on social media as well as search data to perform an analysis of consumer sentiments. With all the big data being more available and the analytics tools becoming more advanced I do question the current return on investment of these systems. Are these tools easy enough to be used by people working in the businesses within a tourism destination so that they can benefit directly from the tools or is the destination organization responsible for the interpretation and communication of the information?

More data and analytics will also lead to further advances in smart machines which is another trend outlined by Benckendorff et al. (2014). The trend of smart machines that essentially introduce mechanical robots into a hotel would then enable novel combinations or so-called "hybrid systems" that can perform both back office and front office tasks. Nonetheless smart machines are still lacking empathetic abilities according to Reis et al. (2020) who furthermore suggest the need for people to work with customers until the technology has come further to replicate human behavior. Due to various opinions on the technology, there thus could be research going into various aspects of the tourism and hotel sector, this could include the use case of smart machines in various hotel classifications and areas in the world. The extended research thus would also benefit from taking into account the regional differences of technological advancement alongside the guest's and staff acceptance of these smart machines to see if there is a realistic chance for this trend to continue and to get empirical evidence for which areas would benefit the most.

Besides these trends, there are also three minor trends that Benckendorff et al. (2014) mentioned, namely material technologies, open systems, and convergence. With the trend of material technologies, the field of "nanotechnology" is addressed, which focuses on new materials that can be used to build screens or many other products that through the new material such as "graphene is lightweight, flexible and durable" but these materials can enable intelligent walls which could change the tone or color according to guest's desire (Benckendorff et al., 2014). This trend works with the trend toward open systems as most systems cannot communicate with each other and therefore the intelligent devices would become interoperable through an open software approach (Benckendorff et al., 2014). Especially the tourism industry would benefit from open systems since a lot of data is collected about guests and these intensive processes could be simplified alongside the simplification of big data (Benckendorff et al., 2014). With the growth of compatible systems and technology, there is also the need for convergence of these technologies to make them the new standard to be used by everyone, embedding new technologies into travelers' devices is the key to interoperability which ensures customers can use their devices for a range of tasks (Benckendorff et al., 2014). ICTs trends have an immense potential if unlocked in the right way according to Tussyadiah (2016) who suggests that phones and other personal devices can "track and model user behavior" to give performance feedback and allow for the intervention of the user experience by "suggesting relevant decisions and actions in opportune moments". The design of these ICTs is very crucial as they have to fit the subjective experience of the tourists and therefore tourists' behavior has to be understood and the approach of designing should be focused on designing with tourists and not for tourists (Tussyadiah, 2016). The focus on customer-driven innovation and the use of extensive tools and technologies enables leaders in the tourism industry to respond successfully to issues faced right now and shortly (Benckendorff et al., 2014)

3.3 Business Process Automation (BPA)

Companies are evolving fast to realize new opportunities that change their way of working to progress to a more autonomous and productive future. The interaction of people and technology has and will continue to be a challenge that businesses will face in the upcoming years. With ever-growing investments into digital process automation, investment forecasts were set to increase by over $5 billion from 2018 to 2021 (Carter, 2021). With this in mind, companies should learn and act on this emerging trend. It is as difficult to implement BPA successfully as it is to understand, due to the expertise and resources needed (McKinsey & Company et al., 2020). To dive deeper into BPA, it is also useful to understand that automation itself has various levels. Today some levels are more common than others based on the capabilities of companies and organizations to scale and operate them successfully (McKinsey & Company et al., 2020). Hotels all around the world have different ways of operating, some of the largest chains might already be on top of their automation efforts, whilst others are keeping up the manual work as part of their business processes. There are various Barriers to adapting BPA for hotels. But the key to overcoming these challenges is to look ahead into the future and realize that BPA is the key to competitiveness, profitability, and quality (Popov et al., 2017).

3.3.1 What happens before BPA?

Besides BPA there is another term worth noting, namely Business Process Management or BPM. This term is historically speaking the backbone of today's BPA and it is important to understand how they are interconnected. According to Schwarz (2021, para. 2), BPM is a "business practice that involves a formalized, organizational methodology based on an established path for efficient and effective management of all processes". BPM in simpler terms is an ongoing activity that can include a redesign of the existing process by enhancing its usefulness and searching for ways to make a process more efficient.

To be able to carry out effective process management, something called Modelling of Business Processes is best used as it is an excellent tool to gain greater insight into a process. Modeling enhances the knowledge and investigation of a process. This enables managers to understand the process landscape and acts as a blueprint on where automation could be realized. This is exactly the point where BPM and BPA meet when BPM realizes faults or inefficiencies and the manager believes there are ways beyond classical process management to be more efficient, BPA can be applied to achieve greater efficiency (Aguilar-Savén, 2004). Research by Aguilar-Savén (2004) suggests that business modeling is part of the solution for integrating enterprises to allow cross-system interactions inside a company or business. Therefore, in several ways, BPM is needed first to start with BPA solutions.

3.3.2   The four Levels of Automation

A study conducted by McKinsey and Company et al. (2020) has arranged the Levels of automation in order from most common to least common. This list starts with the most common and moves down to the least common.

1. BPA is the most Common.
   a. This is due to the lower level of overall complexity; systems can operate in an automated way and no additional hardware is required.
2. Robotics Automation, using actual robots to perform tasks.
   a. Robots have an additional upfront cost and are highly advanced, therefore other industries than the hospitality industry make use of them.
3. Image recognition and Optical Character Recognition (OCR)
   a. This is a highly advanced technology and would not be commonly used in the Hotel industry as the use case might still need defining.
4. Machine Learning, automated process mining, discovery & documentation tools.
   a. This might be the most complex automation level with a high degree of expertise needed to implement and maintain, therefore the hotel

industry would need to shift their strategies towards a more digitally literate workforce to benefit from this automation level. Companies such as Google, Amazon, and Twitter are using machine learning (Brewster, n.d.)

The further down one goes the less common these automations are, most of the time they are more future-driven automation technologies, which are currently only used by top tech companies that have the expertise and know-how.

BPA is the most common, yet it does not mean that everyone already uses it, but it shows that it is the first step into the future of automation it stands as a steppingstone for future automation and is the solid foundation to build on.

BPA is the most beneficial type of automation for hotels. This is due to hotels offering the same base service as they have 100 years ago. Only now hotels would be replacing manual processes via BPA. This is the only scalable option for hotels at this moment in time. BPA is currently the most feasible option for hotels to boost productivity, reduce costs, and enhance the experience that the guests have alongside making staff's life easier (Hotel Tech Report, 2021).

3.3.3   Impacts of Process Automation on Productivity and Job Security

Hotel business process automation efforts have been in the spotlight due to the potential automation of current jobs as well as the perceived productivity boost. Automation often is referred to as robots taking over people's jobs, but this is not the case with BPA. By using tools that enable BPA a better balance between technology and human interaction can be achieved. Automation is seen as beneficial in various areas across all industries at different autonomy levels, leaving organizations with the possibility to limit manual tasks and level up productivity by using Business Process Automation. Support for this is found in the Research from Kim et al. (2008, p. 1) which indicates "a positive relationship between IT investment and organization productivity and performance".

Hotels that use BPA may increase employee performance and improve customer satisfaction. When BPA takes over repetitive tasks at the Front Office such as simple data entry or extraction, employees have the time to focus on the guests and to create a more meaningful stay and experience (Kapoor, 2021). At the same time, the same can be done across the board in other departments. Research not only suggests that the performance of employees increases due to the use of technology that enabled the BPA transformation, but that also customer satisfaction is positively affected (Kim et al., 2008, p. 1). Therefore, this automation opens more doors to opportunities and adds additional value to the hotel. At the same time, there are always potential threats or downsides to any possible new solution or innovation.

Hotels might reduce staff due to technology. Research by Melián-González and Bulchand-Gidumal (2020) has concluded that over time, Hotels were able to hire fewer personnel as the intensity of the human labor was decreased using automated processes mainly known as self-service technologies for example a self-check-in and other applications that took over various tasks previously performed by people. In the future, BPA and technological advancement can further streamline the hotel organization of the 21st century, but how much technology is right for a hotel? BPA generally speaking is seen as a technology-enabled productivity enhancer. People fear that they might lose their jobs, as they believe BPA will make their work redundant. Indeed, this pessimistic view is to an extent a viable concern, however, BPA will at the same time create new jobs that could balance the lost ones (Melián-González & Bulchand-Gidumal, 2020). Furthermore, depending on what kind of hotel you work for there will always be a need for human capital. In a five-star hotel, the need for employee guest contact is essential to create meaningful experiences and therefore one might only see self-service technologies in lower range hotels such as budget or business hotels. This receives support from InterContinental Hotels Group Chief Operating Officer for the Americas, Keating (2019) who states that "Ultimately, the test of a great hotel is the staff's ability to provide consistency in the fundamentals that guests expect, while personalizing the experience to amaze each individual, regardless of age". This not only supports the idea that different hotel categories will have different staff capital requirements for the future but also that specifically in the

service-driven upper scale hotel segment there will always remain a need for excellent hotel staff.

3.3.4   Strategies for a Successful BPA Adoption

Adoption requirements are linked to the acceptance of employees to use BPA and automation tools in their work lives. For some employees, it might be easier to work with these, whereas others might struggle with technology and don't understand the value of such a tool (Kim et al., 2008).

Managers need to ensure acceptance by staff to reap the benefits of automation and tool-driven solutions. If staff does not understand the value or the way of operating such tools or automation modules, BPA efforts will fail due to a lack of clarity. Kim et al. (2008) points out that the key to successful adaptation is clear language of the tool, layout simplicity, fast sharing with all departments, and quick transaction times.

Furthermore, the adoption of such systems can often be pushed upon hotels due to outside pressure from competitors that lead hotels to adopt BPA. To stay competitive, hotels need to adopt new systems, and tools and progress their BPA. The moment where other hotels have implemented such systems and tools to drive their BPA, they will see faster growth and better performance, while Hotels that have not taken BPA actions will be left behind. Besides keeping up with the competition, other outside pressure from clients, suppliers, and the government has the largest impact on BPA adoption (Ezzaouia & Bulchand-Gidumal, 2020).

Knowing what is needed for BPA adaptation is the basis of such a transformation. What is next is understanding strategies for a successful BPA launch. Understanding the underlying technologies, as well as the costs and benefits, are crucial ingredients for strategic success. If a company does not understand where their money is going and what changes will accompany this, companies might fail to reach the strategic goals they set out to accomplish with BPA. For Aguilar-Savén (2004) the pure investment into tools without an understanding and analysis of the process is sunken money. This is furthermore supported by McKinsey and Company et al. (2020) who

have found in their study that managers must be knowledgeable of the expense and the benefit of such automation efforts via various tools.

Making BPA part of the business strategy will create a new dynamic of how functions and departments work together. Switching from a hierarchical organization model to a process-driven organization can help businesses to operate more efficiently. Additionally, firms can reach strategic goals such as adopting BPA throughout various departments by focusing on the process outline, in return, this will create value for customers. This is supported by Krstic et al. (2015) who point out the significance of process-oriented work by establishing a new framework for hotels to use and operate with.

Looking ahead it seems inevitable to avoid using technology and conduct BPA, with this in mind companies could gain a strategic advantage by utilizing employees and technology to create a synthesizing workplace to generate customer satisfaction and value. In the research by McKinsey and Company et al. (2020), it was evident that the balance of human work and technology needs to be a priority in a company's strategic vision for the future because success is seen in firms that balance tech and human work and make this a strategic goal.

3.4   A Hotels Value Chain from a Process Perspective

The core of any business is the value chain, with these, companies can differentiate themselves from others and gain a competitive advantage (Dudovskiy, 2016).

Business processes are complex, the hotel industry has different wants and needs and every hotel might show variations of common business processes. In the Hotel Industry, one must understand business processes, and realize their true potential for the organization, which can be done by modeling these BP (Aguilar-Savén, 2004). Having a good understanding of the process one wants to potentially automate is crucial to identifying the need and benefit of such automation. Alongside the goal of automation, many firms, and organizations question the costs that come into play for such automation and the value they receive for such an investment. Going a level

deeper, the Hotel Tech Report (2021) differentiates between the four types of work in a hotel:

1. Routine

2. Non-routine

3. Cognitive

4. Manual

That synergy with modeling can make decision-making for or against automation easier. Looking at a model of a business process and identifying the various parts and the types of work that are required can lead to a greater understanding. This can then guide managers or decision makers inside organizations to the most suitable decision for what business process gets automated based on these available support techniques.

The various activities that makeup such a value chain can be grouped into several activities, from the core operational processes to supporting processes and the management processes (Krstic et al., 2015). Furthermore, Krstic et al. (2015) suggest that the functional model is left behind to remove the weaknesses of non-logical relatedness and difficult coordination.

3.4.1 Operating Processes

Ensuring the best performance across hotels when leading a large chain can be challenging, therefore well-defined operating processes such as the

1. Housekeeping

2. Supply

3. Guest Arrival/Departure.

4. Food and Beverage Creation.

Processes need to be in place to uphold the standard (Krstic et al., 2015).

Focusing on the value chain and adopting a process-driven organizational structure together with Hotel Front Office Systems (HFOS) and BPA solutions for the other operating processes will increase performance, and productivity as well as reduces time whilst the increasing quality of operation according to Kim et al. (2008).

In regards to the operating processes, there is also a connection to the types of work in a hotel as mentioned before. The operating processes can be various constellations of routine and non-routine work as well as cognitive vs manual work as is the nature of the hospitality industry is that tasks are on one hand very structured such as the check-in and check-out whilst at the same time having a manual side, but on the other side, the guest contact can be very inspiring and leading to creative approaches that are non-routine and very cognitive based as staff in a hotel remember a lot and solve complex problems. These operating processes are not the only processes that connect to the types of work such as non-routine and routine work, managerial and support processes are another process that deals with these also.

3.4.2   Supporting and Management Processes

The supporting processes in the value chain are:

1. Human Resources.

2. Procurement

3. Technology & Development.

4. Infrastructure

According to Dudovskiy (2016). On the other hand, Krstic et al. (2015) add Management processes as another level to the value chain and the process-driven organization, which promotes better decision-making. The management processes brought forward by Krstic et al. (2015) focus on the area of Human Resources, IT, Finance, and quality as well as brand vision and visibility. To push efficiency and make the hotel business more productive, managers need to make quick and value-creating decisions (Kim et al., 2008).

These supporting and managerial processes often connect to 3.4 with the types of work varying significantly. Some work is very routine, and others can be very creative such as the brand vision part mentioned before. Therefore, when it comes to automation in the support and managerial process area it is vital to model the process and decide what type they are to determine the need for automation of the process.

4 Methodology

4.1 Research Design

For the research design, it is essential to choose an approach for conducting the research. There are various ways of obtaining primary data. Depending on the type of data one can obtain there are options to work with qualitative, quantitative, or a mixed methods approach as well as Arts-based research and Community-based participatory research (Leavy, 2017).

Each approach has its unique benefits and drawbacks as well as ways of analyzing the results through various techniques. In this thesis, the qualitative approach will be utilized. Qualitative research focuses on a bottom-up approach to knowledge creation also known as the inductive approach (Leavy, 2017). For a quantitative approach, variables are quantified, and results are analyzed with statistical testing to answer questions such as "how much, what, where, when, how many" (Apuke, 2017). By conducting expert interviews with around 10 candidates this thesis will gain its primary data. Should a data saturation set in at an earlier stage a minimum of 5 participants for the interviews is required? This research intends to discover new information as well as here from experienced viewpoints on trends in the hotel industry, this approach is also supported by Leavy (2017) who states that this "kind of research is generally appropriate when your primary purpose is to explore, describe or explain". To explore the possibilities for BPA and its potential for productivity surplus this method seems appropriate and allows for careful study of perspectives with a focus on the Viennese hotel market. Additionally, with the semi-structured interviews, the thesis benefits from uncovering hidden trends that would otherwise not emerge when using a quantitative approach that focuses on figures and facts validation (Hair et al., 2020).

4.2 Data collection and sampling

The data for the research is collected using semi-structured interviews. The interviews were conducted between March and May 2022 and due to the COVID-19 pandemic some interviews with the experts took place digitally with MS Teams, Skype, or Zoom. Nonetheless, two out of the 5 interviews were held in person at the hotel of the expert being interviewed. The destination for the research was Austria and more specifically the Viennese Hotel market. To conduct the semi-structured interview an interview plan was prepared before the first interviews which formed the basis of the expert interviews whilst leaving space for the interviewer to achieve greater insight by asking follow-up questions to the experts (Clifford et al., 2016).

To aid the researcher's interviews the artificial intelligence tool Otter.ai was used to record the interviews and transcribe these in real-time.

The selection of the first experts took place in January and February and individuals were chosen on their degree of knowledge of the Viennese Hotel market as well as their experience in the industry. Therefore, experts typically had over 10 years of experience in the hotel industry and have known the Viennese market for 5 years or longer. To record the perspectives of hotel experts the interviewees had to either be experienced managers or hotel directors or hotel related experts who hold a position that can understand their holistic perspective of BPA on the Productivity of a hotel and who understand BPA and the opportunities and challenges a hotel might face when adopting or evolving their BPA efforts. For the second round of interviews, the snowball effect would be used to get another contact in the industry based on the already interviewed expert's recommendation.

Table 1: Expert Outline

Expert	Area of Expertise	Experience Level
1	Hotel Industry	>30years
2	Hotel Industry	>20years
3	Hotel Industry	<15years
4	Hotel Consulting	>20years
5	IT & Consulting	>20years
6 (non-recorded interview)	Hotel Industry	<10years

4.3   Interview Structure & Guiding Questions

To further explore the topic of BPA and Productivity in the hotel industry the semi-structured interviews will be led by specific guiding questions that form the core of the interview. Besides these guiding questions, there will also be room to explore certain areas by shifting towards a certain topic if the interview allows for this. To clarify the perspectives of the experts, there will also be time for follow-up questions that should deepen the level of the conversation and reveal unique perspectives.

For every interview, an interview guide will be printed and used to cross all the questions that have been answered as well as to take care of administrative questions beforehand. The confidentiality of the data is the utmost important part. As part of the interview guide, there will be a dedicated part right at the beginning where the question is asked if it is permitted to record the session and to highlight again that no name of that person and their company/hotel will be mentioned in the transcripts to protect their privacy and not reveal sensitive data in the research.

Before the Interview can take place, a prior communication channel has to be used. For various people reaching out via email or LinkedIn is feasible to ask for a meeting with these experts. Personally, reaching out to two contacts from previous Hotel experience and industry contacts will set the basis for the interviewer pool which will be extended by suggestions of the starting contacts. The initial message to the experts will include an introduction to this thesis research and why it is important to have an interview with them, followed by a request to have an in-person or online meeting to facilitate the interview. The choice for the mode of facilitation lies with the interviewee and their personal preference with the current pandemic measures in mind and also their availability. Before any interview, the experts will be asked for their agreement to voice record the entire interview followed by a brief introduction of the interviewer and the expert to set the basis for the interview.

Based on the understanding from the Literature review and the construct above the guiding questions to accompany the interview are the following:

Could you guide me through your journey in the Hotel industry?

In what ways does your hotel make use of technology?

Do you see BPA as a solution for these problems?

What does the hierarchical structure look like in your hotel?

In which ways would your hotel benefit from a productivity increase?

What security issues are you facing with technology and how are you addressing these?

Based on the interviewee's expert field and their time restrictions the above questions can be narrowed down to provide answers to the most crucial questions. In this case, the Introductory question would be left out and if the expert is not a hotelier but an IT specialist the questions are going to be targeting more technology and security. Doing the research in this way will allow for the most qualified answers to be addressed based on expertise and time.

The guiding questions not only allow the researcher to gain perspectives on Productivity and BPA efforts but also entails questions based on their background and the hotel's hierarchy to be able to find patterns that relate to a certain type of hierarch being more open or less open for instance towards innovating their hotel with BPA.

4.4   Data Analysis

The time following the interview the recording will be transcribed and answers to the questions specifically noted. A thematic content analysis (TCA) will be conducted to find patterns and trends across the various interviews. For the qualitative analysis, the TCA will set the basis for the qualitative analysis techniques (Anderson, 2007). Moreover, the Thematic Analysis approach outlined by Braun and Clarke (2006) will be utilized by following the six key elements for doing the thematic analysis. In many research methods, one can choose a very waterfall-like approach to the data analysis by following the exact steps, for the thematic analysis the six phases outlined by Braun and Clarke (2006) include:

Table 2: Braun & Clarke (2006) six-phase model

Phase	Step Description
1	Acquaintance with the data
2	Initial code assembly
3	Theme exploration
4	Reviewing the themes
5	Theme definition and naming
6	Report preparation

These phases guide the analysis and serve as a rough outline of what to do but essentially during the entire analysis one will move back and forth between the data to understand connections between data sets and to make sure all themes are highlighted. After reviewing the data in this case, the interviews, the researcher prepared an initial coding of themes into various categories that can be changed as the analysis progresses toward themes exploration. The researcher did the initial coding with the use of highlighters on printed interview transcripts. Afterward, in phase four, the review of these themes took place to ensure all themes are valid and if not that they are redefined or split into other themes if applicable. Before the formal report is written the themes were clearly defined and given a proper label. The analysis will be based on an inductive approach that allows for the generation of themes and potential theories.

5   Results & Findings

The data that has been analyzed using the inductive research approach and the interview data have been structured into conclusive themes describing the state of BPA in the Austrian hotel sector and the issues related to this. Both the coding and development of the themes took place in May 2022 and the data-driven approach resulted in five themes.

These themes are:

1.   Information and Communication Technologies (ICTs)

2.   BPA efforts via Cloud-based tools

3.   Lack of Productivity in Hotel departments

4.   Hierarchy impact on Innovation and Cooperation

5.   Challenges and benefits of Automation efforts

In the descriptions of the following findings, the themes are further explained, and the validity is showcased. Some parts will include exact data to highlight the applicability of the statements about the themes and patterns as suggested by Braun and Clarke (2006)

5.1   ICTs within the Hotel

The first team concerns the way internal communication happens in the hotels. Specifically, how internal communication can become more productive when using ICTs technologies. Three experts have mentioned that they had used the app Hotelkit as their communication tool for use within the hotel. The other two experts have furthermore mentioned the importance of valid communication. The process of cross-departmental communication was mentioned to be of utmost importance to increase productivity as well as efficiency. Expert number four has stated that "hotels have an issue often with communication between departments" and that an optimization of the process would be of use so that people "stop calling each other or filling out paperwork".

Since the research was conducted in Austria with a focus on Vienna the Austrian based company Hotelkit was mentioned by expert number five "for easier communications, which is often connected to Protel also" highlighting how versatile the application is and that there are interconnectivity possibilities between tools to make work more productive. Furthermore, Hotelkit was mentioned in two interviews, where the respondents highlighted the ease of use and the effective and transparent communication as the largest benefit the statement by the expert one "They can put it in the system with a photo and everyone can see" and expert number two has mentioned that "every employee sees clearly, clearly and transparently that things are done and completed" thus there seems to be the pattern of transparency in working with technological tools, especially for the internal communications in the hotel from department to department as well as inside one department.

It was interesting as well to see that with the pandemic the need for effective internal communication increased and therefore tools that were sometimes used only occasionally have been pushed to become the daily tool for communication within the hotel. The various tasks and operations being carried out within a hotel need a lot of alignment between the departments as mentioned by expert four and therefore additional tools are utilized.

5.2   BPA efforts via Cloud-based based tools

Cloud based tools enable BPA to work even more seamless and the experts shared their knowledge and current use of this technology and how this helps them automate day to day tasks. To push automation, the hotel experts have identified the need for cloud-based tools. Some experts mentioned that they have already implemented cloud-based tools in their hotel to a certain extent.

These cloud-based tools enable staff members to operate the tools they are using from various devices and any location as mentioned by expert number three who points out "the reason we wanted cloud-based systems, not like old school systems, where you can you know, work on your phone, on your tablet on a desktop anywhere from anywhere else" with the tool AlternativeTo the expert aims to use the cloud-based channel management tool for use of their booking engine. Another tool that expert three mentioned is Gastronovi which is a system used for their restaurant. The aim as seen in all interviews is to be less dependent on stationed devices and instead to be more flexible and device independent. Nonetheless, there are also challenges faced with cloud-based technologies and tools. One expert mentioned that they were concerned about the passwords that staff use for these tools and that after their off-boarding the access might still exist if this is not accounted for in the offboarding process. Expert number five has also mentioned that it is crucial for hotels to understand the costs of such cloud systems and whether using the cloud-based system is better than the on-site tools and associated need for servers. The expert states that there is a "need to have these discussions" especially when considering the knowledge and expertise about IT within a hotel and its staff members.

5.3 Lack of Productivity in Hotel departments

This thesis had the aim to find how BPA can support hotels to become more productive. In the expert interview, the theme of productivity was directly brought up about several different functions within a hotel. The main findings were that productivity is difficult to obtain in very human capital-intensive departments such as the Housekeeping and Food & Beverage departments. The main issues faced here according to the experts are the difficulty of finding a conform, a standard operating procedure can enhance productivity according to expert number two suggests "To define the work processes exactly" whilst also pointing out that staff often face differently set up rooms. According to this expert, one housekeeping staff can do 8 to 10 rooms a day which is mainly due to the hotels being different from each other. The expert points out that in "hotel chains where every room looks the same, then you can easily manage to clean 20 rooms" showing that there is an ultimate challenge with the type of hotel design. But the theme of productivity goes beyond a single expert. All experts have mentioned productivity in their interviews and expert three highlighted the importance of educating employees to have new joiners on board quicker and with that increasing the overall productivity of the team. Expert number four stated that "you can always increase productivity" whilst also saying that there is only so much the hotel can do to increase the workforce's productivity. For expert four the optimization of the workplace is important, not to waste any staff members' time by having to walk long distances to get the tools needed for their job. The expert also points out that optimizing productivity "would make sense in departments that tend to have a high amount of labor". Expert five specifically points out the importance of simplicity in tools which can make "the system works around you" ultimately creating a more intuitive tool would then according to the expert support productivity. The expert states: "I think their productivity can hopefully take a rise as well with that" which addresses the issues some experts have mentioned about getting staff to work with these tools and the usually slow adaptation process by teams. Generally, productivity was mentioned by the experts in connection with labor-intensive functions and departments, the technology according to some experts is on its way to enabling better work performance but staff acceptance can stand in the way of this performance increase.

5.4 Hierarchy impact on Innovation and Cooperation

Hierarchies can have a big impact on how well an organization works hand in hand meaning to work cooperative, whilst at the same time either hindering or positively facilitating innovation growth. The experts were asked about their organizations hierarchy in order for this research to understand if there are automation benefits to certain hierarchy structures.

Experts one, two, and three were asked about the hierarchical structure of the hotel or company they work for as they are currently involved in work in a hotel or a hotel organization. The resulting answers have led to a theme whereby hierarchy and innovation link. The experts have all mentioned various hierarchal structures that differ from a very classical model. Expert one highlighted the "low hierarchy" and that "everyone can come to talk about his problem his idea, and when it's a good idea we say ok just try to bring it on the way" highlighting that for this expert's hotel the hierarchy supports innovative thinking and enables staff to freely bring up ideas that they can make happen. Similarly, expert 2 has also named a non-classical hierarchy structure that evolves around the guest in a sort of solar system where various departments are represented by stars. This hierarchy focuses on the customer and is also leading to "cooperation" within this system. The system should allow the more modern career path where people from various industries might take a role and where the "classic hierarchy with I start as an apprentice and stop as director" is not applicable anymore. Expert three has pointed out a more classical model with certain modern elements such as a city-based office for certain functions such as sales, the hierarchical system in the expert's hotel has also removed many head department functions to streamline the work environment which is again fostering "cooperation" and therefore allows for innovative hierarchy with a little less enablement as in the hotel from expert one. There are differences in the hierarchies of the experts' hotels, yet the common theme of innovation and cooperation is fostered.

5.5 Challenges and benefits of Automation efforts

Automation is a difficult topic and specifically BPA can be seen as a challenge because changing business processes can be cumbersome, yet if automation efforts are pursued the benefits can strongly outweigh any challenges on the way. This theme is very crucial as it was mentioned on various levels by all experts. Finding out about automation from the experts has given various degrees of inside into the topic of business process automation. Some experts have addressed the benefits and challenges they see with digitalization and automation when working with some level of autonomy. This resulted in the theme of automation efforts being generated to dive into the topic of what is done in terms of automation, and what the experts' perspectives are towards automation. Starting with the challenges of automation is in the expert's view often connected to the level of understanding and acceptance of the staff members. Expert one states that "people are used to the work from the last couple of years" and that therefore the expert believes that automation needs to be a continuous process of teaching, the expert states "So, in the first minute they are against the idea, so you have to speak to the people, you have to show them what are the advantages how they will help them during their daily job". The automation effort benefit was specifically pointed out by one expert as the "ultimate station" of where things should be heading. The processes at the front office are repetitive and take up the vital time of the front office agents who could be better invested to interact with the guests. Moreover, the expert also sees that there is a high cost involved in becoming more automized and that the "hotel industry does not generate that much revenue" which adapts a complicated topic also considering the time it takes to implement. The various challenges pointed out by the experts relate very much to three levels:

1. Staff Understanding and Acceptance
2. Cost of adaptation
3. Time restraints

Most commonly the researchers named the front office check-in process within a hotel to be best to automate as it currently even with systems capable of full

autonomy has the staff members conduct manual paperwork which includes checking forms and other paperwork as pointed out by expert four. This expert specifically pointed out that "honestly, I believe that any process in a hotel that can be automated should be automated" which relates to expert three mentioning that "the tourism is so living in the 18th century" and pointing out that the current century supports more technology. Here it can be inferred that the expert believes in more digital and autonomous hotel industry.

6   Discussion & Conclusion

After conducting the expert interviews that set out to answer the research question of "How can business process automation prepare Hotels to increase productivity in a growing digital world?" the current results and findings reveal the themes outlined in section five and give a historic and current insight as well as a future outlook of what was, is and can be possible with digitalization and automation when it comes to productivity.

This thesis literature review suggests that the adaptation of BPA is an essential requirement for hotels to increase productivity, stay ahead of the market, and boost the performance of the organization (McKinsey & Company et al., 2020). Significant parts of the literature review support the claim of this thesis based on existing surveys, data, and research. The various results all point in the direction that without BPA an organization will in the long run have difficulty competing against organizations that have implemented BPA.

For hotels, several business processes could utilize automation efforts according to the experts. Most often the front office and back-office tasks were mentioned. For the back office better efficiency through technological and non-technological means could achieve greater productivity of the staff meaning, for example, cleaning more rooms in a day. Shorter ways of walking and more efficient communication are primary targets here. For the front office, many manual tasks are being handled by

the agents and that causes less interaction with the guests which is mentioned and implied by the experts to be of the greatest value and priority. Here the connection to 3.4 with Krstic et al. (2015) can be made as the operating processes fall under the four types of work and the experts and the literature agree that there are various types of work conducted in various functions and even within a process.

In the future, some of the other levels of automation such as Robotic Automation could be seen as vital support for hotels to lower fixed costs and the decreasing numbers of people interested in working in the hospitality industry (The Economist, 2022). It is important to discuss the implications that these transitions can have and based on what was said the value for the guest can increase greatly if the front-office staff has time to be with the guests and for back office related tasks the hotel itself benefits from a productivity increase through technology and automation. The experts have mentioned several times that time is of the essence to make the customers experience unforgettable. One expert specifically stated "can we save work time. Work time which we can use on the guest". Thus, the literature and the experts are not far from each other when it comes to seeing the benefits of making time for staff that they can then devote to the guests. Nonetheless the literature is very far ahead of the current standard that is being outlined by the experts. The advantages of technology, automation, and potential robot support are evident yet many hotels struggle to go forward with basic IT implementations as struggles were mentioned by several experts. The level of IT "savviness" and a limited budget as well as high upfront costs scare hotels but might not be the only reason for hotels not taking on such endeavors. The underlying logic of systems and technology needs to be understood and often experts are needed which are limited to find in a hotel. A suggestion, therefore, could be that hotels further develop their IT team to grow towards becoming a more digitally enabled hotels and in the long run embark on a mission to become more autonomous and therefore more productive.

For the moment the theme of internal communication is due to its frequency of mention at the forefront of every manager or director's mind. It is very strongly connected to the Information and communication trends mentioned in section 3.2 where digital empowerment is mentioned by Benckendorff et al. (2014). Since the

communication plays a large role in day-to-day hotel operations as well as in the tourism industry as a whole. The idea of productivity as mentioned in 3.1 of the literature review is according to David et al. (1996) "the ratio of output units to input units in a system" which could support the use of internal communication systems such as Hotelkit which streamlines the input amount and therefore the ratio can become more efficient. Nonetheless the literature review has highlighted the importance of identifying the right processes to automize and the strategies that should be taken. Some hotel strategies seem to be very far from BPA and more focused on digitalization as a whole through tools that exist creating an immense amount of dependencies and a jungle of programs working alongside each other and making employees deal with more technology tools than if BPA would be done with strategies that were mentioned in 3.3 such as the one by Kim et al. (2008) who points out that the key to successful adaptation is clear language of the tool, layout simplicity, fast sharing with all departments, and quick transaction times where the focus would lie on modelling first and then deciding for automation and process adaptation. Overall the experts perspectives resemble a general interest in BPA but without a clear strategy that is driven by the management of the hotel a patch work of tools will arise potentially causing less output due to the enhanced complexity.

Besides the internal communication, the cloud-based tools have also been mentioned by the experts. These tools such as AlternativeTo that was mentioned offer Channel management or other services such as CRM that can be completely handled over cloud solutions. The appeal of these technologies is very straightforward in that they are simple to access from any location and that several people can work on them. The Literature part mainly 3.2 led by the ideas of Benckendorff et al. (2014) points out some major trends for ICTs, some of which are closely related to cloud solutions such as open systems. These open systems would benefit the hotel industry as a whole. Independent and chain hotels a like could use open systems to their advantage in many ways. One way could be to have greater interconnectivity between the various tools at hand. Using only open-source cloud solutions could help especially the independent hotels to keep the cost down as it is very costly to try and connect private tools that developers make money on by being a stand-alone product. Connectivity

and integration have a price and open source could arguably favor the cost intensive hotel business by making hoteliers lives easier and more cost efficient.

Interestingly the question about the hierarchy within the expert's organization resulted in rather surprising answers. The hotel industry is notoriously well known to be having a very classical hierarchy set up that leaves not much space for interpretation of tasks or job duties. Nonetheless all hotel experts who are currently working for a hotel have stated very low hierarchies exist in their hotel, besides this some innovative schemes for replacing the classical hierarchy were mentioned, mainly the planet system revolving around the guest sounded interesting and similar to the other setup shows that the hotel industry can bring forward change. The question that remains is if the changed hierarchy also changes the culture to be more innovative and allow for technological advancement? Two experts have stated that their hierarchy enables ideas to be heard and realized whilst another expert mentioned that greater flexibility is offered through the hierarchy of the Hotel. These are opinion-based beliefs, and it is difficult to fully verify this. Nonetheless, it shows that hierarchical changes can change people's perspective toward the dynamics of the hotel and the ability to drive innovation. It cannot be said that hierarchy changes itself make for a more innovative company culture, but it can certainly play a factor by contributing to employees relationships to managers in a more collaborative and cooperative way.

Lastly, the automation efforts taken by hotels as mentioned by the experts are very tool-based. In the paragraphs before it was mentioned several times that one tool will focus on one work item, process, or area. There is no holistic approach toward the topic of automation or digitalization which could be drawn back to a missing overall strategy towards BPA. One of the experts has specifically agreed to that point those hotels have too many tools. It seems like hotels are almost losing productivity again because of the number of systems that are used and have to be learned by all the staff members. Having one meta system was mentioned by an expert to work all the tools but the difficulty is immense since the open system engineering is not all too common and therefore a lot of work is needed to build these meta systems that would work overarching. The approach that would work in favor of the hotel industry would be an

open-source network for tools that would allow easy integration and connection between tools. It seems that many of the experts themselves are currently not yet aware of how to potentially drive BPA as there is no clear strategy in mind for this area but rather a focus on digitalization at specific pain points. In comparison to the literature review where the trend towards BPA is described as a necessity and as being of strategic importance the current reality in the expert's hotels is far from that. Systems that don't talk to each other and have difficulty to increase productivity therefore the hotel directors and owners should think more about BPA to make use of the outlined benefits mentioned in the literature review. The benefits of a strategic BPA have proven to be very strong drivers for future success if the right steps are followed. An issue that is at the forefront of all future digitalization or automation effort is the cost and the time constraints that a hotel has, but more importantly even the staff's acceptance. One expert mentioned that everything that can be automized should be automized and even though it sounds drastic the reality shows that many processes can currently not be automized due to the lack of staff acceptance and understanding. The BPA literature review part 3.3 has a lot of information on levels of automation, how to achieve automation and what impacts it can have, furthermore the BPM has been discussed and Aguilar-Savén (2004) suggested how it creates greater efficiency). This chapter would be a great starting point for hotels to orientate themselves and make new plans for the future that have underlying knowledge for the changes that need to happen and the skills required.

In order to be successful in the future, the Hotels have to become more naturally innovative from within. Meaning that talent and innovative ideas need to be obtained and given space to grow, this, in the long run, could result in the ability to work towards BPA and reap the benefits of it. Currently hotels work with a patchwork of tools to work around current pain points but without a clear strategy and plan for the future the hotels that do have a BPA strategy in place today will soon be the greatest competition leaving the hotels that are focused on today's issues far behind.

7 Theoretical and managerial implications

With this research there are some theoretical and managerial implications that should be taken note of. It can be implied that the experts interviewed have a rather conservative standing towards automation and specifically BPA, they do believe in innovation and using tools to automize, but the holistic approach is missing, this same logic could very well be different in other areas outside of Austria as outlined in the literature review where results from parts from all around the world implicate a different standing towards automation and BPA.

For the hoteliers and managers who are going to follow a BPA strategy the outcomes can be very positive especially in a conservative market such as Vienna where the experts are less likely to move towards BPA on a holistic level. The hoteliers who do not push towards BPA will in the future continue with their medium priority shift towards automation which could leave them vulnerable as other hotels who do have automation are able to attract and retain talent as the work is more pleasant and the processes work around the employees.

A common problem mentioned by the experts was the internal communication that in most cases was solved by making use of the Hotelkit tool. Specific tools can become a great short-term help for hotels but in the long run as outlined during the literature review already a clear strategic focus has to be put on BPA to be able to stay on top of the market and catch up to the standards of more automized industries.

8 Limitations and future research

There are limits to any research. Regardless of what is being tested, analyzed, or studied the results and findings reach a certain limitation factor. For the exploratory research in this Bachelor Thesis, the qualitative data was obtained from the experts interviewed. The research focused on experts from the greater Vienna area in Austria and therefore the location of the experts makes it difficult to generalize the findings.

Furthermore, the research itself was targeting BPA and the impact on hotels' productivity in today's world, almost always questions regarding BPA were answered with tools as solutions to the hotel's problems. Whilst the expert's answers certainly went in the right direction and some tools mentioned offer automation of certain tasks the entire business process was not mentioned in regards to how to automate one BP in particular. With this, the question of mistakes in the methodology arise, were the experts informed enough about the topic? And were the questions focused enough? All this could be discussed, nonetheless, the research obtained and the limitations it has still pointed out that experts were not analyzing all processes and seeing what would support the hotel in each of the processes pointing out that the hotel industry around these experts, in particular, might not have considered BPA as a current idea to make use of a holistic approach towards automation.

Lastly the findings could be limited due to the inability to disclose sensitive business information, this could lead to less detailed information being shared. For future research a more in-depth analysis of various markets globally and a study on independent vs chain hotels could be of interest to see geographic differences as well as differences between entity structures.

9 Bibliography

Aguilar-Savén, R. S. (2004). Business process modelling: Review and framework. *International Journal of Production Economics*, *90*(2), 129–149. https://doi.org/10.1016/s0925-5273(03)00102-6

Anderson, R. (2007). *Thematic Content Analysis (TCA)*. https://rosemarieanderson.com/wp-content/uploads/2014/08/ThematicContentAnalysis.pdf

Andersson, A., Winslott Hiselius, L., & Adell, E. (2018). Promoting sustainable travel behaviour through the use of smartphone applications: A review and development of a conceptual model. *Travel Behaviour and Society*, *11*, 52–61. https://doi.org/10.1016/j.tbs.2017.12.008

Apuke, O. D. (2017). Quantitative Research Methods : A Synopsis Approach. *Kuwait Chapter of Arabian Journal of Business and Management Review*, *6*(11), 40–47. https://doi.org/10.12816/0040336

Benckendorff, P. J., Sheldon, P. J., & Fesenmaier, D. (2014). *Tourism Information Technology [OP] (Tourism Studies)* (2nd ed.). CABI.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Brewster, C. (n.d.). *14 Companies Using Machine Learning | Trio Developers*. Trio.Dev.

    Retrieved June 5, 2022, from https://www.trio.dev/blog/companies-using-

    machine-learning

Carter, S. (2021, September 3). *Automation in Business: Why It Matters and Why Your*

    Organisation Needs It. Medium. Retrieved December 9, 2021, from

    https://towardsdatascience.com/automation-in-business-why-it-matters-

    and-why-your-organisation-needs-it-9ca2162ee204

Clifford, N., Cope, M., Gillespie, T., & French, S. (2016). *Key Methods in Geography*.

    SAGE Publications.

David, J. S., Grabski, S., & Kasavana, M. (1996). The productivity paradox of hotel-

    industry technology. *The Cornell Hotel and Restaurant Administration*

    Quarterly, *37*(2), 64–70. https://doi.org/10.1016/0010-8804(96)83102-8

Dobni, C. B. (2008). Measuring innovation culture in organizations. *European Journal*

    of Innovation Management, *11*(4), 539–559.

    https://doi.org/10.1108/14601060810911156

Dudovskiy, J. (2016, August 25). *Hilton Value Chain Analysis*. Research-Methodology.

    https://research-methodology.net/hilton-value-chain-analysis/

Ezzaouia, I., & Bulchand-Gidumal, J. (2020). Factors influencing the adoption of

    information technology in the hotel industry. An analysis in a developing

    country. *Tourism Management Perspectives*, *34*, 100675.

    https://doi.org/10.1016/j.tmp.2020.100675

Gartner. (n.d.). *Definition of Business Process Automation (BPA) - Gartner Information Technology Glossary*. Retrieved April 19, 2022, from https://www.gartner.com/en/information-technology/glossary/bpa-business-process-automation

Hair, J. F., Ortinau, D. J., & Harrison, D. E. (2020). *ISE Essentials of Marketing Research (ISE HED IRWIN MARKETING)* (5th ed.). McGraw-Hill Education.

Hashim, K. F., & Fadhil, N. A. (2017). Engaging with Customer Using Social Media Platform: A Case Study of Malaysia Hotels. *Procedia Computer Science*, *124*, 4–11. https://doi.org/10.1016/j.procs.2017.12.123

Hong, J., Thakuriah, P. V., Mason, P., & Lido, C. (2020). The role of numeracy and financial literacy skills in the relationship between information and communication technology use and travel behaviour. *Travel Behaviour and Society*, *21*, 257–264. https://doi.org/10.1016/j.tbs.2020.07.007

Hotel Tech Report. (2021, May 28). *How to Think About Automation's Impact on Hospitality*. Retrieved December 9, 2021, from https://hoteltechreport.com/news/automation-in-hospitality

Hu, Y., & Kim, H. J. (2018). Positive and negative eWOM motivations and hotel customers' eWOM behavior: Does personality matter? *International Journal of Hospitality Management*, *75*, 27–37. https://doi.org/10.1016/j.ijhm.2018.03.004

Kapoor, R. (2021, May 20). *Top 5 Automation Use Cases for the Front Office*. Automation Anywhere. Retrieved April 20, 2022, from https://www.automationanywhere.com/company/blog/rpa-thought-leadership/top-5-automation-use-cases-for-the-front-office#:%7E:text=Front%20offices%20can%20automate%20repetitive,tasks %20best%20left%20to%20machines.

Keating, K. (2019, April 24). *The five-star experience*. Todayshotelier. Retrieved April 20, 2022, from https://www.todayshotelier.com/2019/04/24/the-five-star-experience/

Kim, T. G., Lee, J. H., & Law, R. (2008). An empirical examination of the acceptance behaviour of hotel front office systems: An extended technology acceptance model. *Tourism Management*, *29*(3), 500–513. https://doi.org/10.1016/j.tourman.2007.05.016

Krstic, B., Kahrovic, E., & Stanisic, T. (2015). Business process management in hotel industry: A proposed framework for operating processes. *Ekonomika*, *61*(4), 21–34. https://doi.org/10.5937/ekonomika1504021k

Ladhari, R., & Michaud, M. (2015). eWOM effects on hotel booking intentions, attitudes, trust, and website perceptions. *International Journal of Hospitality Management*, *46*, 36–45. https://doi.org/10.1016/j.ijhm.2015.01.010

Leavy, P. (2017). *Research Design* (illustrated ed.). Guilford Publications. https://books.google.de/books?hl=en&lr=&id=hxyDDgAAQBAJ&oi=fnd&pg= PP1&dq=research+approaches&ots=T5613Umdf3&sig=Az-

TZNitiqYnqlLrL7wF2EOztKU&redir_esc=y#v=onepage&q=research%20appro

aches&f=false

Li, M., Yin, D., Qiu, H., & Bai, B. (2021). A systematic review of AI technology-based

service encounters: Implications for hospitality and tourism operations.

International Journal of Hospitality Management, *95*.

https://doi.org/10.1016/j.ijhm.2021.102930

Lund, N. F., Cohen, S. A., & Scarles, C. (2018). The power of social media storytelling

in destination branding. *Journal of Destination Marketing & Management*, *8*,

271–280. https://doi.org/10.1016/j.jdmm.2017.05.003

Matsushita, K. (2021). Workations and Their Impact on the Local Area in Japan. In M.

Orel, O. Dvouletý, & V. Ratten (Eds.), *The Flexible Workplace* (pp. 215–229).

Springer Publishing. https://doi.org/10.1007/978-3-030-62167-4_12

McKinsey & Company, Herzberg, G., Panikkar, R., Whiteman, R., Sahu, A., &

Hanselman (Ed.), H. (2020, October 20). *The imperatives for automation

success*. McKinsey & Company. Retrieved November 3, 2021, from

https://www.mckinsey.com/business-functions/operations/our-

insights/the-imperatives-for-automation-success

McMahon, F. (1994). Productivity in the Hotel Industry. *International Journal of

Hospitality Management*, 615–625.

https://arrow.tudublin.ie/cgi/viewcontent.cgi?article=1008&context=diraaar

t

Melián-González, S., & Bulchand-Gidumal, J. (2020). Employment in tourism: The jaws of the snake in the hotel industry. *Tourism Management*, *80*, 104123. https://doi.org/10.1016/j.tourman.2020.104123

Popov, L., Blinova, E., Kosheleva, A., Valedinskaya, E., & Mikhaylets, A. (2017). Contemporary Challenges of Independent Hotels Automation on the Way to Achieving Competitiveness: Focus on the Hotel Services Market of the Black Sea Coast. *Eurasian Journal of Analytical Chemistry*, *12*(7b), 1415–1420. https://doi.org/10.12973/ejac.2017.00268a

Reis, J., Melão, N., Salvadorinho, J., Soares, B., & Rosete, A. (2020). Service robots in the hospitality industry: The case of Henn-na hotel, Japan. *Technology in Society*, *63*. https://doi.org/10.1016/j.techsoc.2020.101423

Research-Methodology. (2016, August 25). *Hilton Value Chain Analysis*. https://research-methodology.net/hilton-value-chain-analysis/

Samala, N., Katkam, B. S., Bellamkonda, R. S., & Rodriguez, R. V. (2020). Impact of AI and robotics in the tourism sector: a critical insight. *Journal of Tourism Futures*, *8*(1), 73–87. https://doi.org/10.1108/jtf-07-2019-0065

Schwarz, L. (2021, July 12). *32 Business Automation Statistics for 2021*. Oracle NetSuite. https://www.netsuite.com/portal/resource/articles/business-strategy/business-automation-statistics.shtml

Talón-Ballestero, P., González-Serrano, L., Soguero-Ruiz, C., Muñoz-Romero, S., & Rojo-Álvarez, J. L. (2018). Using big data from Customer Relationship

Management information systems to determine the client profile in the hotel sector. *Tourism Management*, *68*, 187–197. https://doi.org/10.1016/j.tourman.2018.03.017

The Economist. (2022, January 6). *Why workers are fleeing the hospitality sector*. Retrieved January 10, 2022, from https://www.economist.com/business/2022/01/08/why-workers-are-fleeing-the-hospitality-sector

Tussyadiah, I. P. (2016). Technology and Behavioral Design in Tourism. *Design Science in Tourism*, 173–191. https://doi.org/10.1007/978-3-319-42773-7_12

upwork. (2021). *Future Workforce Report 2021 | Upwork*. Retrieved April 24, 2022, from https://www.upwork.com/research/future-workforce-report

Yang, Y., Pan, B., & Song, H. (2013). Predicting Hotel Demand Using Destination Marketing Organization's Web Traffic Data. *Journal of Travel Research*, *53*(4), 433–447. https://doi.org/10.1177/0047287513500391

Appendix

9.1 Interview Transcripts

9.1.1 Interview 1

RESEARCHER: Could you guide me through your journey in the hotel industry?

EXPERT: From my day-to-day operations or from my starting point?

RESEARCHER: From your starting point where you started your career?

EXPERT: After finishing High School and later I went to the tourism college in Krems, which is in Lower Austria and afterward I went abroad. This means I started in Paris, London, and the French part of Switzerland and I studied in the United States for Hotel Management after 10 years abroad I came back and started working at the Hilton Company Vienna and my focus was always on the opening of hotels.

RESEARCHER: That's great, thank you very much for the overview. My next question is in what ways do hotels make use of technology?

EXPERT: So, we have to say that I am here at the hotel Vienna for 2.5 years and we did a lot of digitization during this time thanks to the pandemic as well, the pandemic opened a lot of doors, regarding digitization. The first thing is that I digitalized the whole accounting department, so all in the meaning of sustainability to save paper we had a lot of paper during the whole time and now we digitalized everything in the accounting department. Digitalization concerning the guest, that means they can

online check-in we don't print any bills anymore, the guest gets all the info before he arrives, so we really try to make it easy for the guest but still we want communication with our guest we don't want to do all in digitalization and the guest comes and say here's the key and the guests go up to the room, we still want to have nice communication with the guest. But we also offer, so the guest can choose to use the digitization, or he will come to the reception and gets all the information from there.

RESEARCHER: You said for the accounting you digitalized the department; did you use a specific tool or are you using just a digital platform like that of Microsoft 365 to digitize?

EXPERT: no, in the past we did not have a real accounting system in the hotel, everything was done on paper and that means we had to print every single invoice, and I was looking for a special system, where I said ok I don't have to print the invoices I get them per email and I can put them direct into the system. I think it took me 3months to find the right system, I mean SAP would be one but it is for real big companies, it is working for real big companies it is not working for smaller companies, when I say for real big companies it even when you take the Hyatt or the big hotels with 200 rooms they are even too small for SAP so yeah I found a system that is called logistix and it is really very easy to handle. So I put every single invoice into the system and the great possibility this offers me is that in the past if somebody called me 2 months later and said this invoice is not paid, I mean sometimes you had to go to the cellar to look for the invoice or anywhere else and you did not find it, and now I go into the system and I see immediately if the invoice is here if the invoice is paid, I have every day a real perfect overview of the actual situation how much money is open how much money do we have to get from people, meaning the open balances, so this is a really great tool you can work with

RESEARCHER: Do you see any current problems in the hotel, that you believe technology or automation could fix in terms of maybe processes?

EXPERT: Sometimes to get people to work with it, let's say even with the digitalization in the accounting department the people are used to the work from the last couple of years. So, in the first minute they are against the idea, so you have to speak to the people, you have to show them what are the advantages how they will help them during their daily job. This is one thing, and when you think of the guest and the digitization you don't have total the people you have to use it from now on you only can-do online check in, yeah so people have to have the possibility to choose between ok I can do it my way online or direct at the hotel. So, this is the thing you have to bring it to the people.

RESEARCHER: Ok, so enforcing sort of that both ways are possible, and that people are open to choose the way they like until they maybe adapt to your system.

EXPERT: So you have to adapt slowly to the system

RESEARCHER: If you could explain to me what the hierarchical structure in the hotel here looks like, that would be great

EXPERT: What is the hierarchical structure, we have a very low one, yeah even with of course we have the room maids, we have the people working in the service and then we have our receptionist but we try to keep everyone on the same level, of course, we do have a management team but we are listening to our team, yeah we involve our team in each strategy in each new idea to get the information because I think the receptionist know exactly who are our guests and what they want to have in our hotel. And even when we did the digitalization, we talked to them and said OK this would be

a new way, it's not that we don't do it in the end, but we would like to know every comment from our employees to involve this in the system, yeah to adapt this to the system. And not to put the system on the way and then you find out about the problems, so we try to do it the other way around. So, we do have a very low hierarchy and we don't really make like a difference, everyone can come to talk about his problem his idea, and when it's a good idea we say ok just try to bring it on the way, so they have the possibility I have an idea and I can make it real, and I can work on it.

RESEARCHER: And in which ways would the hotel benefit from a productivity increase and maybe which areas would you hope productivity increases in the hotel?

EXPERT: What do you mean with productivity increase?

RESEARCHER: Let's say that could relate to how fast things are being done, how efficient certain work processes are

EXPERT: Ok yeah mhmh, this is what we definitely did with the digitalization in the accounting department this is also the digitalization on the reception because we don't print any reservations anymore, we have everything online and when we send out the offer if a guest calls and says I would like to make a reservation could you send me an offer for 3 different room types, we go directly to the system we put everything in and send it out immediately, so each process or each new system we want to implement we think about what does it bring to the team to the work is it then an advantage and can we save work time. Work time which we can use on the guest

RESEARCHER: so, the main 2 things you haven't mentioned yet are the F&B lets say and maybe the housekeeping, are there any initiatives that you want to take in terms of maybe IT implementation towards these processes.

EXPERT: I don't know if you have heard about the tool HotelKit and you can use it for, it is like an internal communication system for the hotel for all the departments, in former time it was always very hard you always had to call the people and they were busy and now with HotelKit everyone has it on their phone and you can send immediately a message to the housekeeping to one person, you know she is in the third floor she has those rooms and you say ok the guest for a certain room is already arrived you can send immediately a message and she can answer to you, this is a project we are just working on, we do have HotelKit since 7 years but we didn't use it that much in the housekeeping and now we try to implement it, you have to get especially the room maids, they all speak German luckily we are lucky that our room maids are here between 10 and 15 years and know the hotel very good but now we have to get their understanding that it really helps them during their day. They also can put in if something is broken in the room, they don't have to call us the reception say listen in the room there is something broken please write it down. They can put it in the system with a photo and everyone can see then.

RESEARCHER: So, this would be a good way of automizing that system then for you?

EXPERT: Yes

RESEARCHER: Thank you very much, this is all my questions and I just want to state again this is all anonymous I will just transcribe the interview and you name will not

be mentioned, you will let's say be interviewee A and this is all that will be the only this that will be written down in the report. Thank you very much for the interview!

EXPERT: Thank you!

9.1.2   Interview 2

RESEARCHER: So, a little bit about your Journey I would ask. How did you get into the hotel industry and what were your different steps through the hotel industry?

EXPERT: With me actually, I came in only the coincidence, I had actually no idea as a 15-year-old what hotel business and gastronomy actually means and have made over 20 years ago an apprenticeship as a cook and was from the first moment actually enthusiastic to work with such products finally with such a variety and have me then also very strongly the next years at that time focused on it. Especially in the star gastronomy to work from one to three and four stars. I also held various positions up to head chef, where I was in a position to manage a kitchen, but then I also said to myself in my mid-30s, maybe something else is possible.

I then tried to go in the direction of food and beverage manager, attended a course, did a training program in a hotel in Salzburg, and then immediately fell in love with this profession. And this change from kitchen to service is a very big one. But because I also came from operations, the leadership and ultimately the planning were definitely the biggest difference and I felt very, very comfortable. Half a year later I aspired to the position of food and beverage manager, felt very comfortable working in the hotel, and through various projects, I finally worked my way up to the position of hotel director, a wonderful 20 years.

RESEARCHER: Right now you have arrived here. In the hotel as general, manager and director of the hotel. The next question would be how does your hotel use the latest technologies that are out there or technologies in general and how much technology is used?

EXPERT: Basically, yes, it is already the case that you have also not passed by the digitalization in the hotel industry and gastronomy without a trace. We have actually been trying since 2014 to make our digital the hotel digital. On the one hand from the work processes, but on the other hand also for the guests. We work with chatbots on the websites and ultimately also find out where what the guest needs. We have in the rooms suite pads where guests can make orders for sales orders. We have developed an app. I think that the future is in the apps, that you don't go to websites anymore, you go directly into the app as well and ultimately look that they can ultimately go through the app for these things from the rewards program ultimately to the order or also to the door opening.

And I think that in ten years there will also be no more hotel keys, but everything will be digital through the phone, among other things of course the online platforms, digital price signage, digital archiving and ultimately also the rating platforms. These are some of the tools that are so digital. We learned with Pandemic that we can work with QR codes from menus about guest registration. Of course, our reservation systems like Opera or now aleno where we can also store a lot of data. Here comes but still deposited that we might get a guest where we then know exactly what he likes for breakfast etc... all this is so important and also our personnel management software. We work with Haufe, where we conduct our employee interviews digitally. There is preparation, follow-up, and employee reviews take place twice a year. Here, too, the employee has the option of accessing his or her file digitally and, accordingly, of changing certificates, references, or ultimately information himself or herself. Internal communication is also very important, also due to the pandemic.

Internal communication is also very important, also due to the pandemic. Is our hotelkit is a tool where you can also download an app from check in to check out about, evaluation feedback, complaints, and repair orders an employee can take a photo, upload to hotelkit goes the employee accepts the task, the technician does it. So in the end every employee sees clearly, clearly and transparently that things are done and completed. And of course, our POS system is digital here as well.

RESEARCHER: Yes, great, wonderful. Next question, how would you use Business Process Automation as a solution to your problems or maybe problems that you've seen right now? Are there problems there that Business Process Automation could solve for you?

EXPERT: Yes, in principle, as I said at the beginning, it starts with the arrival and also with all this information, these processes that we have during the stay, if we manage to work with these tools, the stay is ultimately better for the preferences. Accordingly, we can also react much faster. I think it's important that even if we take the example now, take with feedback. In the past, the guest had placed an order by phone or by post or wherever. Nowadays he clicks on what he wants, probably also with the picture, you can make an additional sale, because automatically the process is already involved, because if I click that automatically we manage to get it even faster to the right departments and the order is ultimately fulfilled.

RESEARCHER: Great. And do you see any problems that exist in the hotel, where you could say, also to a certain extent due to COVID, where you say, there you could maybe do more with technology?

EXPERT: I can't think of an example right now

RESEARCHER: But I would ask for the hierarchical structure, how is the hierarchical structure in the hotel with them?

EXPERT: We have the solar system as a hierarchy. It's actually a planetary system, but if you look at the departments everything ultimately revolves around the sun and the sun is the guest at the end of the day. And the most diverse department heads virtually animate a planet. And we want to show a bit that a structure is not only purely hierarchical, but ultimately that on the one hand everything revolves around the guest, but ultimately also this cooperation. And that makes so a little bit figuratively, a little bit clearer. Yes, also for non-hoteliers or restaurateurs to apply this principle because they also know that we have many lateral entrants and no longer have this classic hierarchy with I start as an apprentice and stop as director. Instead, you have to use this planetary system, which I think we launched in 2017, a very exciting one. So the five planets that revolve around the guest, so to speak, are actually responsible. It's about eating, drinking, sleeping, that's housekeeping, kitchen, service, so to speak. Experience is the area everything that has to do with check-in check out. And also the Planet People, which is sort of taking care of the employees of the company.

RESEARCHER: Great, perfect. Then to my next question, are there certain areas in the hotel where you could benefit from say a productivity boost? Is there somewhere you could turn the screw and get more out of it? Are there things that take too long?

EXPERT: So basically housekeeping. Because, like you probably, where there is the most turnover, of course, and that is with our rooms. One cleaner does about 8 to 10 rooms a day in this house, ultimately, we are a special house because in our house all 152 rooms are different. Every room is different and if you create a hotel room, like the hotel chains where every room looks the same, then you can easily manage to

clean 20 rooms. now of course you have to imagine vases, lamps, very, very individual pieces, where of course it just takes more time to clean, that's I think the biggest lever where you could start.

RESEARCHER: What would you say could be done as an idea to bring in a little more productivity?

EXPERT: There are two topics. To define the work processes exactly. That's ultimately the biggest part, and to make sure that these processes are clearly defined. Of course, in the case of our hotel, you have a lot of staircases, moving floors, and spacious floors. And now you can imagine that instead of using a service trolley, our cleaning staff walks with a basket, that's a lot of paths, and I think you have to start everywhere. How do I manage to use the employee's time as efficiently as possible in cleaning and not in getting lost on the way, that would be an issue. On the other hand, there is the issue of employee shortages.

It is ultimately also like since 2019 where corona has become a bit more acute is the issue with the outside hired staff I think indispensable. And of course, it's also very important that we train the people perfectly.

RESEARCHER: Now a question on the subject of security. Are you aware of how important data security is and do you actively address this issue?

EXPERT: This will be a very big topic for us. Can you imagine that the name we have is of course also very, very big? Yes, and it starts with. We try to train their employees on a monthly basis, from glitches to about We did the locks for USB sticks, for example. We do training, we have sensitized employees for spam in a very classical way. Data protection We have done this ISO certification for security in the IT area. We change

the passwords once a month and also have quality checks, where we make sure that no data or, for example, someone on the laptop has the password next to it. These are issues that are very, very important to us.

RESEARCHER: Yes, thank you very much, that's all my questions for now. Thank you very much for the interview

EXPERT: With pleasure

9.1.3   Interview 3

RESEARCHER: So the first question for you would be, could you guide me through your journey in the hotel industry? Where did you start? Maybe after studying and where are you now?

EXPERT: Okay. So I started originally as a front desk agent, directly after my first university in Czech Republic when I was 21. My, my degree at university was not related to the tourism industry at all, but it was my first experience with tourism in general. And then I had an internship in Vienna actually Best Western Central Europe an American hotel chain. So I was working in the headquarters and took care a lot of the systems and supported with our partners in seven different countries. And then I started my master's degree on MTM. Yeah. And in between, of course, I was working in many different hotels on the front desk very often. As a side job to my university. And afterwards, I finished my study, which was like tourism management but focused on the destination level and focus on sustainability tourism development. I worked in Brazil also where I used to work for a Tourism Secretary. And we did different analysis for Emre tour, which is Brazilian tourism board. Okay. And after I came back to Vienna, where I worked for, actually it company called cognitive which is channel manager, which you probably know what does channel manager does? Where I used to support managers regarding the setting how to use the program. Regarding the rate structure, and also the meta budgets, etc. But also was in touch a lot, but the second level trying to implement the different features in the systems, what is required from the side of the hotel manager what we are missing, how to implement certain features in booking engine, etc. And then I switched to the Hotel _____ organization where I worked now for the last four years already. I I was resetting the structure of the channel manager which they had and at the same time worked and the reservation department at the beginning. Basically just in the middle and group reservations, but then I came. Now focus I focus solely on the systems and partly also on a sales and I'm close in cooperation with marketing, creating, supporting them to promote the different regions and the hothouse. Yeah,

RESEARCHER: perfect. Great. Thank you so much for that overview. That's really helpful. And now jumping directly into into the hotel as such, in what ways do your hotels make use of technology? And maybe also in which ways do you make use of technology in your day to day work for these hotels?

EXPERT: Yeah. So the first question was, how do we use the technology Right,

RESEARCHER: exactly. Yeah, exactly how and in what ways which kind of technology? Yeah,

EXPERT: yeah. So I think we are really trying to and pushing to be more digitalized. In the last year a lot. It was one of the main focuses of 2021 actually because we took advantage of the COVID year and we thought now when we finally have a time we can, you know, try to make everything faster, better, more ultimate automatic. And yet, so we try to implement completely the new system landscape system structure in our pilot. Yeah, and this Yeah, how do we use it? Well, basically we change the PMS system, we change the channel manager because we wanted to also improve our booking engine. And we wanted exactly to have features such as online, channel information, we wanted to implement the customer journey, so we are having still CRM program in mind. So we try to really implement the entire structure to make everything faster. Yeah, we wanted. Also find a PMS system which would enable housekeeping to react on time, meaning they can, for example, send information that the room is already available and the front office sees it and they can automatically check in we wanted to have a kiosk at the front desk also if the front office is not available because you have only restricted time schedules when the reception is there. So the guests can for example, do the self-check-in alone by themselves. Yeah. So that was basically one of our main features. Or my our goals. Yeah. And how do we

use it in daily life? Well, I don't know how to answer this question that well, like main my main work is basically to to exactly to try to make a smooth, the, all the processes smooth, and I'm the person who's always talking to the second level and telling them about the bugs, why the interface is not working. For example, now we implement it also a one program gets thrown away. So there is an interface between our PMS system and the restaurant system where you do the ordering. You can do for example, to under scanning of the QR code you can do order online, so ultimately it comes out at the bar, they can come and bring the drink then, so no, it's like many interfaces. I take care of, you know, so on a daily basis, always in a contact with different partners and deleting what's wrong and what to change.

RESEARCHER: Yeah, I understand that. That's challenging. Do you have any direct tool names or anything that you use besides that?

EXPERT: well, the systems we are using right now, the pilot project, because, you know, when you do a big system structure change, you don't do it for all hotel chains at once. It will be crazy, because of course at the beginning, you have so many issues with implementation. And the interfaces are not working correctly, even though all salespeople will tell you from the programs everything works fine. Just implemented. Everything was smoothly ran. No, it's it's not true. So we tried with one location only and there we have mews, which is a cloud-based system. This was also the reason we wanted cloud-based systems not like old school systems, where you can you know, work on your phone, on your tablet on a desktop anywhere from anywhere else. We have channel manager which is called AlternativeTo solutions. So a German company we prefer to use this one I chose this one because we like the booking engine which are they having one page booking and also we have gastronovi This is the system used for the restaurant. Yeah, in between us. There are also other systems which are connecting it to customer via and so on. Yeah, but it's the three tools we wanted also implemented payment system within the Property Management System PMS, so basically all the credit cards are transferred automatically and also based on the

cancellation conditions the money is also booked automatically. So this is payment system at the end. I don't know if you if you know it. Yeah, these are the main ones. And yeah, and of course you have another interface connected with accounting system, which is BMD in our case,

RESEARCHER: BMT. Okay, great. Then that will be my question towards the hotel and the use of technology. So if you think about problems in the hotel and your back of the mind already. So now I'm asking do you see that this BPA would be a solution for maybe some of the problems that you are facing in the hotel currently, and yeah, so that will be the question.

EXPERT: Yes, I think the ultimate station, this automatization of the processes and the BBA, you golf can, of course, simplify a lot of processes. Because I think the biggest issue is, for example, with the front desk, they're doing many repetitive tasks, and they you know, and this can be three-four hours a day, which means it does 28 hours to 30 hours a week, depending on the tasks they doing, you know, and of course this cost US property and money and then these, the front desk which should be supposed to be the first contact touchpoint of the customer is busy with other tasks and they don't give that much to the person along, you know, so of course you can save up costs, therefore, sure, and you can use it in a smarter way. Just when you say this, I think this is for me, really, this repetitive task is unnecessary nowadays to do you know, and I think it's a pity when the hotel industry is not taking advantage of it. It said that we're in the 21st century and anyways, the tourism is so living in the 18th century and century so I believe so. But it has so many obstacles, how to achieve it,

RESEARCHER: of course, what do you say would be some of these obstacles that are that the hotels are facing currently, with adopting such new technologies or maybe getting the expertise and to do these kinds of transformations?

EXPERT: Yeah, there are many, but okay, then, you know, if I think of it and the most important, of course, at the beginning are the costs you know, because the hotel industry does not generate that much revenue. It generates your earnings, but it steals you a lot of money. From the costs, you know, it's a very cost-generating industry in general. Yeah. So. So we had just to find the finances to just implement the digitalization processes is already tough for some for some hotels. Yeah. Then, in general, to find a constellation of the system is a very hard task, because each of the hotels has different expectations work differently, you know. And, yeah, and I can tell you, maybe just a search of the system. It took us maybe three months. Yeah, just to defect, a different schedule talks, discuss what we are risk requesting, what do we need from the system and so this is also like a time-consuming. Then just to find really the specific features which are required for you. And then another issue is the interfaces just the implementation process. I started with the implementation of this systems for the pilot project in June, and it's almost one year and with some things I did not get further Yeah. So even though they tell you the interfaces are working, you choose different constellation you will never be sure if it's really working. Okay. So this is also another issue yet the expectations from the programmer and expectation also of the hotelier you know, very often the systems are programmed by people who do not have a practical experience in the healthcare industry in general. Yeah. So you have to tell them, what kind of features would you need to implement and you need to persuade them about it to implement it. Yeah, this is this is another issue. This is the gap is really big. Yeah. So I think this is the biggest ones and also you cannot forget on the human factor. If you're trying to implement something new, you always have obstacles with your team. This is the biggest obstacle. Yeah, you can try to implement the self-check-in kiosk. If it's not working, they will subdue it. You know, you must have a manager who's behind it and say why it's not working. Let's try differently. You know, so there's this process of the implementation very often the people drop off because they don't believe it will work, you know, but in order to make it work, you need this being behind, you know, and also the people along they're not very often they're not that they don't like systems in general, like many of the people are afraid

of new things, and they don't want to try new things and try new systems. They afraid of technology. And it must be really super user-friendly, you must fight so they implemented so their life is easier at the end. You know, it's really funny, but it's true, and partly you fight in the hotel industry. But the issue that nowadays you have not that well educated like employees who studied some tourism schools, they are coming from different backgrounds. They don't speak well, German. And yeah, because they're not that well get a bit educated. They're not that good with the systems. Yeah, it's another obstacle for you to really make them react. You have to teach them everything. Yeah. And again, in order to make the system work, you need again, people who are very good with the systems to maintain them to keep them running, you know, which is again an obstacle because sometimes you cannot find the people who have the expertise in the field. Yeah. So I would say this is like the biggest issue I can tell you about right now from mine.

RESEARCHER: That's, that's great. Yeah, that's, I think something that is definitely worthwhile looking in. And I want to connect that now to the hierarchical structure as well. If you could point out a little bit at what does the hierarchy or is there a hierarchy in your hotel? Just a quick rundown on give a classical system and the hierarchy or is there a different hierarchy in place in your hotel or your organization as a whole?

EXPERT: Okay, so Well, I'm sitting in Vienna because we have a headquarters of we are in hotels here. Yeah. So the reservation department sales, the marketing the accounting and controlling is here. Yeah. But of course, we have in each huddle we have a photo director, the general manager who takes care of the operation. And we have also a front office, we don't have a front office. In some of those. We have a front office manager, but usually, we have just front office members. Yeah, so there is the cooperation, close cooperation between the reservation department and front office in our team. And in the reservation department in Vienna, is also taken care of the systems, which we discussed right now.

RESEARCHER: Okay, so you would say overall, your hierarchy is quite well connected even though he had so many places at once. So it's not it doesn't take that long to to move a message through the network.

EXPERT: Now, of course those we are in touch a lot and we are their phone or per teams. A lot in contact on daily basis. So you have perfect fragment communication.

RESEARCHER: That's, that's great. And now I'm heading to my last couple of questions here. So the last couple of questions is basically about productivity. A little bit and in which ways maybe the hotel or your organization could basically benefit of increased productivity and in which areas would you think that there is a need for, let's say, extra bit of productivity?

EXPERT: Can you maybe elaborate more like how do you mean it?

RESEARCHER: Exactly. So basically, do you see any areas that would need productivity increase in the hotel or within the organization as well? It does not just have to be the hotel.

EXPERT: Productivity internal, you know, I think you can be always more productive in each area. So do you think like input area for example, the digitalization processes could be implemented in order to increase the productivity?

RESEARCHER: That that could be as well but also if there are any traditional processes that you have at the moment that you just think are too slow? Let's say, if you're looking at any of the housekeeping away, you say, Oh, we take too much time there overall, and that could be solved with not even a digital way. But if not,

EXPERT: the processes need to be improved in our case right now, but I think this is the issue of all the people in the hotel industry right now, is what I have mentioned previously that we are fighting for the like of employees and well educated employees, and where the productivity needs to be improved. From our side is for sure how to make employee faster being ready, jump in it at the work. So I would say more, do faster education, educative processes. Yeah. Onboarding? Yes, partly PMS system, which is helping us with this because you have also many videos which you can give to the employees. But anyways, like, how to faster teach someone something.

RESEARCHER: Okay, perfect. So the whole training and the whole onboarding, should try to go faster. Then. I'm on my last question. And that's basically just if you're aware of any security issues, relating to technology, of course, and if yes, maybe also a budget that you set as a as an organization towards making sure that your digital security is also in very well locked up.

EXPERT: Yeah, and regarding security of the, of the data of the guests, I still have also some issues with our partners right now, for example, because, you know, the GDPR is shortly implemented, and implementation in big systems as what we have is still not done until the end, you know, because you always come up with certain cases and you realize, all them this data should not be saved for example. Or, for example, you're still fighting COVID I guess require the arrays, the erasing of the data, but you have you need to, for example, keep the data and invoices for the next seven years, you

know, and so this country and fight against the guest, so I think this is like what we are fighting digital security. Yes, of course, it's a big issue. We are trying, for example, with onboarding of each employee to be really to check all the information, all the login data, because as I told you, when you're having cloud-based systems, where you can log in from all over the world, that you need to be extra careful when you do offboarding have the employee to you know, remove everything efficiently in addition to security. And this is, you know, of course, like nowadays with the hackers, you're going to be secure of anything, but this is not on the side of the hotel, but of course on the side of the partners who take care of the systems.

RESEARCHER: Okay, perfect. So you basically have a budget that is allocated towards security because you just mentioned that you have partners, so therefore you spend money and you have a budget?

EXPERT: Exactly, we have a budget that we spent on the outside support who also handle the security. What we only Think of what we can influence is how do we store our own data? And how do we, for example, do the onboarding of the employees etc., in order to work with it efficiently, but for example, all the credit cards are nowadays tokenized in all the systems so, and this is again in another partner system, which we actually pay for as a service. So, this should be secure.

RESEARCHER: That's, that's great. Perfect. Well, that was my last question and the including, of course, the follow up questions. So I want to thank you, first of all, very much for taking the time to talk to me and again, the data will be handled as well confidentially. So your name will not be shown on my research and also not the hotel names will appear it will just say hotel and then blank basically on Friday, so all these

EXPERT: things get structured, you know, I just tried to pull some information for my experience.

RESEARCHER: No, it was very good. It was very good, because I was able to actually ask a lot more follow up questions. Since you branched out so far. It goes into a lot of good follow up questions that can really help with research as well. So thank you very much for that. And then I wish you a great evening. Thank you for your time.

EXPERT: Thank you. Good luck. With your thesis.

RESEARCHER: Thank you so much. Have a good one. Bye

9.1.4 Interview 4

RESEARCHER: Software. OK, good. Now we can switch to English for the interview.

Absolutely perfect. That's working. So, as I mentioned already, we're talking about business process automation. And business process automation is supposed to support the productivity in a hotel that that's at least my assumption. And now I have a couple of questions for you relating to various things that could be related to business process automation, but don't have to necessarily as well. So my first question will be to you, what tools and systems have you encountered to your years in the hotel industry?

EXPERT: Well, is, is full of tools and systems. First of all, every hotel I've worked in obviously has a PMS property management system. Then, you know, I'm just thinking which way to put it maybe if we take the customer journey in in terms of E-marketing, there are a number of tools there are a number of newsletter tools being used, obviously, channel managers, central reservation systems being used, then you've got, again, the PMs when the guest checks in then you've got obviously your point of sale systems in the different outlets. What else? Some hotels have concierge tools that they use, then let me think what else the Spa has its own system. At checkout we're back at BMS talent management systems so a backup of house or more administrative departments HR sometimes has its own system for recruiting talent, then you've got, you know, an e-learning platform, maybe you've got internal communication systems intranet, you've got a ton of tools. Now that I think of it What else some hotels have archiving systems online for the accounting department, and accounting tools Yeah, I hope I've listed them all

RESEARCHER: so that's a good start. So with that now, my question would be, as a bit of a follow up to that, how well do you think these systems talk to each other, in the sense like, are they interconnected in some way, or is there something else that has to be done to connect these systems?

EXPERT: You've hit the nail in the head Absolutely. Great question. This is the biggest issue. Most of the systems are separate from each other. Obviously, you've got interfaces between some of the systems, POS, and PMS, for example, or your central reservation system, channel manager, your reservation system, and all of that. But in terms of marketing, it's really difficult because the guest data usually sits in the PMS. Then some of it sits in your spa program, some of it sits in the POS program, then sales and marketing, you know, have their own tools where they have their clients, and those systems don't talk to each other. So I've actually worked at a hotel where they were trying to create an additional system, but Well, firstly trying to make the systems talk to each other and they realized it's not possible. Some of these companies are just too big and don't want to cooperate with each other to actually make their systems talk to each other. So they actually tried to create a meta-system, I'll call it where all the data from the various systems would feed into that one system. So that finally you would have all data concerning one guest in one system, but also that was quite a challenge and until I left the hotel, it wasn't quite implemented yet. The system was called Cendyn, and I've seen that it was not bought by Pegasus, actually. Yeah, so definitely a huge issue for hotels is that all of these systems don't talk to each other.

RESEARCHER: Maybe looking now at some specifics, in terms of the tools itself. Do you have some names of tools that you've worked with maybe some that you prefer to work with in terms of maybe the PMs systems or talent management systems or others? Do you have some names for those or also internal communications and whatnot?

EXPERT: Okay, let me think so I've definitely worked with opera in most of the hotels that I worked in as a PMS before that it was it was Fidelio, but then most hotels upgraded to opera. A lot of hotels that I worked at used micros as a POS system in terms of internal communication in Austria. Hotel kit is definitely one of the tools I see

in most of the hotels that I deal with in my current position and that I've worked at in the past.

What else I'm sorry, could you repeat your question one more time so names of systems for internal communication and

RESEARCHER: talent management as well. Then you already mentioned that POS and the payment systems are those Yeah if there are any more names that are generally out there.

EXPERT: Okay, let me think back of the names. In terms of talent management, the last hotel I've worked at which you've worked at as well, we implemented Haufe or how filamentous has a talent management system. But I remember having had a look at a number of different ones. A quite well-known one. The name escapes me, let me try and think what is name? Well, one was based on SAP actually and then we decided that it was way too complex and too big for a rather small hotel company. The bigger one, the other one that we looked at was called

RESEARCHER: we can circle back to it otherwise it's also not like, come back to me. Exactly. If you haven't, then we'll come back to it later. But maybe we just move on to the next question. And maybe it even comes into your mind then. Because my next question.

EXPERT: Oh, there we go on. Was

it still? Cornerstone? Cornerstone? Okay, Cornerstone is perfect.

RESEARCHER: Yeah. Perfect. We got it. Great. So when my next question will be then do you believe that for example, general automation for such a business process automation could be helpful for hotels in the general sense.

EXPERT: Definitely, absolutely. I mean, what do you exactly mean by business process automation?

RESEARCHER: Exactly. So there you could see, okay, let's take the different maybe the different departments that check-in, for example, right? Automating the check ins so that you don't have to, I mean, many systems are already available at this point to do things for the check-in, but there's still things that have to be done in on a manual way. And that could be optimized. And so there will be for example, business process automation could include that you automate these certain steps that previously had been done manually. So, there's, there's that for one, I think that it might already explain it.

EXPERT: Well, honestly, I believe that any process in a hotel that can be automated should be automated. Not to replace the staff but really to give the staff the time to interact with the guests and not to be busy with systems. That's my belief, that if there's a system that you know, can replace manual paperwork, it should definitely be implemented. But obviously, it shouldn't create more work and be more cumbersome for the employees than manually. But yeah, we shouldn't replace employees with robots, but we should definitely give employees the opportunity of really interacting with the customers rather than just, you know, spending their time going through paperwork and checking forms and processes that could be automated.

RESEARCHER: Perfect, yes. You already quickly mentioned some of the, I guess, obstacles a little bit that might stand in the way or difficulties in general maybe there's a few more obstacles and barriers maybe to processing you know, or to actually achieving automation in in a hotel. What other ways do you think it will be difficult to work with automation for a hotel for example?

EXPERT: Well, obviously cost is often an issue in you know, in terms of buying the software and paying the license cost, some of them can be quite expensive. So big hotel chains you mentioned automating the checking process Marriott and other hotel chains have done it already. But some smaller ones may not have the financial means to do so. In our times, I think data security is a big issue as well. You often hear of you know, cyber-attacks and data needs to be protected. And that could be another hurdle or difficulty that a hotel might have to deal with. Whether you know systems are being offered as service as a cloud or whether in the actual server sits in the hotel, you need to have these discussions. Another hurdle in my opinion is obviously the acceptance on the side of the employees to have to learn you know, to use yet another system and sometimes their level of it savviness is an obstacle as well. Especially in more traditional hotels where you might have staff who are not so used to dealing with various computer systems. So I mentioned the cost. I mentioned the cybersecurity I mentioned the employees. Are there barriers let me think. well, quite frankly. Another barrier might be the simple lack of resources. Within hotels. IT departments traditionally in hotels are not large, you usually have one person, no matter how big the hotel is, maybe two, and, you know, managing those systems and making sure they're all up and running and secure and you've got your backups and you know you're adhering to GDPR and all of these things. Takes a lot of resources, a lot of manpower. And I think we still don't think of a hotel as a highly optimized business. And it's often underestimated and that that could be another barrier. I've seen rollouts taking way too long of IT projects is because the resources are not there.

RESEARCHER: Okay, that's interesting. Yeah. I was also wondering in general now, where can maybe a hotel benefit maybe from a productivity increased to be able to target then automation towards these areas potentially. So what would you say in which areas of the hotel would productivity increase? Be of, let's say, extra use? Where would the productivity be? needed more, maybe some certain areas that would benefit from a productivity increase? just in just in general without the whole automation in the back of the mind just in terms of productivity purely? Are there certain processes or certain areas where productivity is constantly lacking? Or where there could be an increase in the productivity in general as well?

EXPERT: I mean, I really think if you don't have processes in place, whether they are optimized or not, you can always increase productivity. There's a certain limit, I would say that you can reach because you know the room attended can only clean so many rooms you can optimize as much as you want in the background. Obviously, you know if you have no system at all, and it has to do with the hardware of the hotel as well where the housekeeping offices is located. If the room attendant has to go up and down 10 floors to get his or her stuff, you know, you can optimize all you wanted on to help productivity. But in general, I guess where it would make sense is is departments that tend to have a high amount of labor. Because obviously labor is expensive, especially if we're talking about Europe or the Western world. And optimizing processes there and freeing up the employees would definitely make sense and I'm thinking of housekeeping and food and beverage, but in the back of my mind. For example, I know of hotels who don't have good processes in place in their purchasing procedures for example, and there you could certainly increase save money and increase efficiency if you have you know, an optimized purchasing and and receiving and storing process for example in place. That's not necessarily one department but it usually affects many different departments. If they have to fill out purchase orders and have 10 people sign them and you know lose a lot of time. What else the sales edge is immense. Yeah. Honestly, I think if there are processes, especially implemented in very labor intensive departments, or maybe you know, optimizing processes that involve a large number of people and departments I think,

in general, hotels have an issue often with communication between departments and generally, departments within a hotel need to work very closely with each other and coordinate and talking reservations, front office housekeeping, food and beverage room service and so on. And you could definitely become more efficient and more productive if you optimize this communication process and people have to stop calling each other or filling out paperwork or doing things like that. Perfect.

RESEARCHER: Great, so that would be my last question for the interview.

EXPERT: I'm sorry, I just remembered you know, there are hotels that still do repair orders by paper.

Okay, prepare audits by paper, that's also a good one.

Optimize that and put it in a system and prioritize it in the background and always be able to have an overview of what's done and what's opened and so on.

RESEARCHER: That's very helpful. It's so basically also the third parties that are involved outside of the hotel, a few sub-suppliers, for example, communication to suppliers and okay, that's, that's interesting. Perfect, then this will be the end of the interview. Thank you so much.

EXPERT: Thank you take care

9.1.5 Interview 5

RESEARCHER: So, as you're a hotel and IT expert, I have a couple of questions that are really tailored to your expertise. And yeah, I'm very thankful that you have the time today to talk to me about your expertise level and specifically about the hotel and the IT world within the hotel. My first question to you would be, how far are hotels in the digital transformation process at the moment?

EXPERT: so there's really a lot of online bookings. There's a high digitalization. There's lots of systems such as you know, there can be two systems, there's a PMS systems, but they're all changing slowly. But there's a sort of a move towards cloud systems for the guest management so also the CRM management is very important. And there are different other systems such as like yield systems and revenue management systems that are quite important. More important than the past because they have become more and more sophisticated, and they offer way better functionality than in the past. Therefore, many hundreds have adopted these various tools and systems in order to benefit from them. Yeah, another thing that that is a lot happening at the moment is cloud-based PMS systems, for example, travelclick that can work with PMS, that can basically replace sorry, they can replace PMS systems and at the moment the challenge here is a total interface at the moment cannot really communicate well with the cloud.

RESEARCHER: Thank you for that. I'm wondering, are there any other tools that you can name more processes that you can point out a little bit that would have to do with business process automation as well?

EXPERT: It's also very well-known everyone I think knows Protel in the hospitality industry, and now Protel AIR exists, which is a cloud-based version, but it's not that

well-built yet for bigger clients. So we are also looking into that for some hotels for clients, but it depends on the size of the hotels, which is not feasible for the moment.

RESEARCHER: Yeah, thank you. I want to add on to this was a question how can a hotel process be automated mice for example, maybe what what is needed?

You know, you talked a lot about the systems now that are in place. The yield management revenue, PMS systems, f&b, and revenue are all things. What is needed to make these processes maybe it gets them optimized?

EXPERT: Yes, there's various things that have to be considered when looking at these things. housekeeping apps replace, you know, such as Protel. We know that it was used, but also housekeeping apps replace a lot of these things. Now use hotelkit for easier communications, which is often connected to Protel. And so, there are definitely things that you can do to optimize. It's always depending on the hotel tools that you're using, in which way you can maybe optimize them. Because the promise I think the connection between various tools is relatively difficult. And I think in terms of optimizing in general, you always need to know very well what is the process about first of all, if it's in a manual way at the level, right, you need to know where is it currently where should process go in the future, not just to optimize some manual process but also to maybe look into how can we make this process better before putting this into an optimized way, that that will be, I think, the main characteristics for that it's quite hard to say what is all needed. Because it depends very much on the specifics and need of the hotel.

RESEARCHER: That's, yeah, that's some good information already there. Now, I'm wondering as well, since you're an IT expert, which kind of security issues do you see with ongoing digitalization and also maybe with automation is happening throughout the hotel, and specific maybe the business process automation cases as well?

EXPERT: Yes. So with that, I would say that there are a few issues that hotels tend to have, and that is very common in other businesses as well. But there are many open source, open sources for potential people to log into your hotel or to get access basically. Some of the things are, for example, the typical technical instruments you have, like the temperature and the climate controls, are basically open gateways. That can be used by the guest but could also be used by potential hackers or people that want to get access to your network. So, it's very important to be able to, to really safeguard what customers are supposed to use specifically the logins from the customer from the guest site. It's specifically well protected. Because that's an Open gateway for everybody. And that sense doesn't matter if it's a guest or if it's someone that wants to do fraud, or fraudulent activity. And one thing that exists for us as well sometimes is doing over-the-air checkups off systems. And the problem with that, for example, as well that hotels sometimes won't want this to be happening, since they might not have it or that big of an IT department and house. But base they are sometimes based on most of the time based on Linux systems, and therefore it's also much of a danger because the system is complicated and are very much prone to problematic to problems basically. And with that, as well. This is a general tendency in the hospitality industry. It's specific in the hotels now. That IT management is not understood by the directors of a hotel by the general management and so the weak understanding of the IT department basically and what it is supposed to do makes it very difficult for the hotel to have a really good setup and therefore that also creates a potential entry for fraudulent activity if you're not, if not everyone is very well aware of how important it is. And with that as well, if the management is not very, let's say involved and understanding of the IT, issues that could potentially cause you to know, data leaks and whatnot. There's also a budget for it in many big companies, but hotels often don't have this. Therefore, it's a bit of a gamble sometimes how much is actually spent on it and something for example, that our company also offers that we are offering that the service, we offer service services for service basically, where they can run everything, not through their own hotel service. But through an outside service that we then protect as well. I do the main things for hotels; I think is there's always

the running cost and the cost of buying certain things. So sometimes it is good for hotels to just think about making a budget available to be able to purchase or basically have these systems on hand but at the same time, it's also important if you're not maybe the biggest hotel and you don't have enough maybe staff to take care of with that you outsource it to a company that has the expertise as well. So yeah, in the future.

RESEARCHER: Now what would you say would be the productivity increase right in hotels? Where would hotels be able to increase productivity?

EXPERT: I mean, it's hard to say for some of those, the hospitality industry and specifically the hotel industry working them IT expert in work helping out the industry, but I'm not directly involved with the day-to-day operations. So, it's hard to say where productivity could be increased but I am always a big, big fan. I would say of trying to do to use tools whenever possible, to make life easier for guests but also make life easier for the staff and employees. It should help everyone and not distract everyone from work. So, it's important that tools are simple, and, in the future, they might become a bit more optimized. And hopefully, with that, a bit more of an authentic experience arises so that it's not a hassle to use it and that the system works around you and you don't have to work all the system so that is all I think in the coming in the future. So yeah, I think their productivity can hopefully take a rise as well with that.

RESEARCHER: This was my last question. Well, thank you so much for the answers to my questions. It means a lot and thank you for your time and I am I'm very much looking forward to taking all this information and using it.

EXPERT: no problem. You're very welcome, have a good day.

EXPERT: Thank you. You too. Bye bye.