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Observing the Significance of Digital Transformations in Post-Pandemic Hospitality

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Submitted to Dr. Daniel Dan

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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.

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Abstract

Digital transformations have had a continuous impact on various sectors, as the world becomes more accustomed to the benefits of automation, artificial intelligence, augmented reality, and other enabling technologies. Moreover, the SARS-CoV-2 pandemic has acted as an immense digital catalyst, as many sectors were forced to move operations online. Existing literature suggests that digitally transforming traditional business models is crucial to remain competitive in a post-pandemic environment. Moreover, observing the volatility and advancing consumer demands within the hospitality sector indicates the importance of digital transformations in a post-pandemic setting.

The aim of this research is to identify the significance of digital transformation processes in the hospitality industry, which will be measured based on; organizational structures, competitive advantage, and the impact of the SARS-CoV-2 pandemic. A qualitative thematic approach will be conducted to obtain primary information from various digital transformation experts.

The analysis yielded compelling evidence that digital transformations will significantly impact the post-pandemic success of establishments in the hospitality sector. However, a core organizational shift is required to create an appropriate environment for digital transformation projects to thrive and provide optimal benefit. Furthermore, it may be argued that the novelty of digital transformations in the sector combined with a lacking definition could provide complications in the future. Thus, it is advised that post-pandemic digital transformations are measured to provide a further understanding of the topic.

Table of Contents

Keywords: Digital Transformation, Digitalization, Digital Innovation, Hospitality, SARS-CoV-2

List of Tables

List of Figures

Abbreviations

AI	Artificial Intelligence
B2B	Business-to-Business
B2C	Business-to-Consumer
CAGR	Compound Annual Growth Rate
DT	Digital Transformation
GDP	Gross Domestic Product
IoT	Internet of Things
KPI	Key Performance Indicator
ML	Machine Learning
OCC	Occupancy
OTA	Online Travel Agency
RevPAR	Revenue per Available Room
R&D	Research and Development
SaaS	Software as a Service
SME	Small- and Medium-sized Enterprises
WHO	World Health Organization

1 Introduction

1.1 Background

Technological evolution has been a fundamental driver toward ever-advancing humanity. Even prior to the rise of homo sapiens, our distant ancestors discovered stone tools over three million years ago. However, a fundamental shift occurred around 18,000 to 13,000 BCE during the neolithic revolution. This is known as the period where modern human beings grouped to benefit from collective advancement. Indeed, this migration proved to be a fundamental introduction to collective innovation (Gregersen, 2022). Fast-forward to the 18th century, and one would observe the notorious industrial revolution, which acted as a substantial technological catalyst. Noble et al. (2022) define the industrial revolution as an economic shift from primitive merchants working by hand to mass-producing machinery. Since the industrial revolution, humanity has experienced four further technological revolutions.

The Second Industrial Revolution, also referred to as “Industry 2.0”, saw the introduction and worldwide adoption of electricity. Although it may appear dramatic to reduce a fundamental shift to a singular innovation, electricity enabled accelerated globalization. It achieved this by providing a foundation for improved transportation and communication methods. This led to the introduction and rapid advancement of computer technology during the 20th century, also known as “Industry 3.0”. Since 2011, Industry 4.0 has propelled us further into the future by effectively connecting technological devices through datafication methods (Har et al., 2022). At the time of writing, we are currently positioned in a transitional phase between Industry 4.0 and Industry 5.0. The Fifth Industrial Revolution aims to create efficient synergies between humanity and technology by expanding on innovations introduced during Industry 4.0, such as artificial intelligence and machine learning (Noble et al., 2022). One observable pattern from our technological evolution thus far is that innovation is constantly growing at an exponential rate. Thus, these macro transformations are essential for humanity to establish new foundations, enabling us to discover extraordinary inventions that drive us into the future.

We are amidst a novel digital revolution that has recently accelerated due to the ongoing SARS-CoV-2 pandemic. The SARS-CoV-2 (also called COVID-19) virus is an exceptionally infectious strain of the well-known Coronaviridae family, with the first confirmed infections appearing in December 2019. Since the virus was observed in viral pneumonia patients in

Wuhan, China, it has spread rapidly (Sofi, Hamid & Bhat, 2020). As of March 11, 2020, the World Health Organization (WHO) officially declared the accelerated spread of the virus a global pandemic (Cucinotta & Vanelli, 2020). Aside from the obvious detrimental impacts on our society, the pandemic acted as a colossal disruptor of national and international economies. Although numerous sectors were affected, the hospitality and tourism industry was among the hardest hit. Given the sudden announcement issued by the WHO, countries swiftly enforced strict lockdown regulations and imposed near-complete travel restrictions, which made person-to-person contact obsolete. These directly inhibited operations associated with the hospitality and tourism sector. Services such as available hotel rooms and commercial airline seats could no longer be offered to clients. This also issued great concern to the broader global economy, as the mentioned sector contributed a staggering $8.9 trillion or 10.3% towards the global gross domestic product (GDP) in 2019, whilst providing over 330 million jobs worldwide (Aksoy et al., 2022). Despite these challenges, the pandemic offered an opportunity for struggling sectors to innovate. LaBerge et al. (2020) argue that the pandemic triggered rapid digital implementations, which have accelerated the digitalization of internal corporate operations by as much as four years. Furthermore, the predominant positive effect of the pandemic is that an apparent shift in executive mindset has evolved in regard to digital transformation projects. As the industry migrates into a post-pandemic environment, one must question if digital transformations are crucial for hospitality enterprises to remain competitive.

1.2 Research Questions and Core Objectives

This research aims to identify if digital transformations are a crucial element for the hospitality sector to thrive in a post-pandemic setting, and if so, how they could best be applied. In order to structure this study, the researcher has developed three core research questions:

RQ1: How could organizational structures within the hospitality industry affect the integration of digital transformations?

RQ2: Does the inclusion of digital transformations support a company's competitive advantage in the hospitality industry?

RQ3: To what extent has the SARS-CoV-2 pandemic impacted the implementation of digital transformations in the hospitality industry?

2 Literature Review

2.1 Digital Transformation

Digital transformation (hereafter “DT” or “DTs” when referred to in a plural sense) can be defined as a digital-first approach to optimizing current business practices. Current DT projects leverage data through means of artificial intelligence (AI), machine learning (ML), automation, cloud computing, and other internal technological advancements (Ghosh et al., 2022). The motivation to pursue progressive digital implementations is due to various reasons. Firstly, cloud computing has granted corporations access to a higher degree of automation and accessibility, which reduces the operating costs of managing complex digital infrastructures. Moreover, the consensus is that AI could collectively contribute up to 14% of global gross domestic product (GDP) by 2030 (George & Schillebeeckx, 2022). ElMassah & Mohieldin (2020) even state that compelling data is as sought after as oil, which is driving the progression toward a novel digital economy.

Mergel, Edelmann & Haug (2019) argue that “digital transformation” is a commonly used buzzword that lacks a clear academic definition. It appears to have become a primary objective of most establishments, despite the absence of a distinct and universally accepted interpretation. DTs may be implemented to uphold positive shareholder relations or entertain executive management without providing any concrete benefits to the corporation’s existing business model.

Wu, Fu & Kong (2022) examined the contribution of DTs to mitigating risks of historical stock price crashes, considering ceteris paribus. The study concluded that DTs increase the transparency of establishments towards external investors, which elevates their comprehension and trust in the corporation’s objectives. As a result, excessive sell-offs are partially mitigated during economic recessions. On the other hand, establishments that do not realize internal digital advancements may experience greater sell-offs during the same period. Thus, it may be argued that decisions to implement DTs have a strong influence from external shareholders, which could incentify corporations for the wrong reasons. The ambition to kick-start DT processes may be fueled by external demands rather than observing feasible requirements to optimize a corporation’s current business model. As aforementioned, however, there are numerous motivating factors for corporations to consider carrying out DT projects.

Zhai, Yang & Chan (2022) identified two variations of typical DT implementations, which were observed by analyzing all a-share firms in Shanghai and Shenzhen between 2009 and 2019. One approach involves a systematic implementation of DTs, where digital projects are slowly introduced and absorbed into an existing business model. The other method focuses on a direct and time-efficient implementation strategy, where corporations activate multiple DTs simultaneously. The main noticeable difference between both methods is longevity. The systematic approach leads to a longer "ramp up" phase, which enables the establishment to experience long-term benefits due to various DT implementations. Contrarily, a direct strategy grants corporations swift returns, however, they may be short-lived.

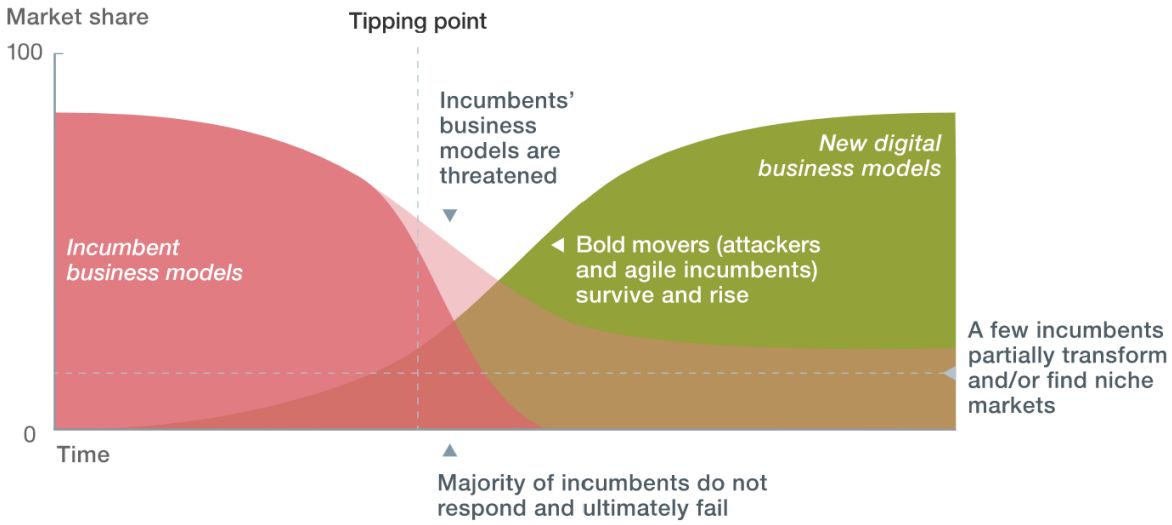
2.1.1 Risk and Complexity

Tabrizi et al. (2019) state that DT projects were the biggest concern of executive management in 2019. This is unsurprising, given that a mere 30% of large-scale implementations achieve their initial goals. The remaining DT projects fail to create the promised change. An estimated $1.3 trillion was spent on DT projects in 2018, of which $900 billion provided limited or no long-term value (Zobell, 2018). Corporations fail to achieve these goals for numerous reasons. Bughin et al. (2018) outline five common risk factors that have been observed from DT projects initiated by over 2,000 firms worldwide:

The first risk is how corporations define the term "digital transformation" and how they ultimately apply it to their existing business model. As aforementioned, the term is widely used despite lacking a clear definition. Various literature confirms this inaccuracy as a core risk to integrating novel digital progression, as the interest of executives varies depending on the company, industry, and strategy. Gong & Ribiere (2021) analyzed 134 different definitions for DT and attempted to propound a definitive consensus. One core reason the term is ill-defined is due to its recent surge in corporate interest, which transformed the technical term into a widely used buzzword.

Secondly, enterprises may fail to acknowledge the concept of emerging digital economics, which may lead to a clash between traditional and novel economic views. Many senior executives who started their careers before the digital era struggle to grasp this economic progression.

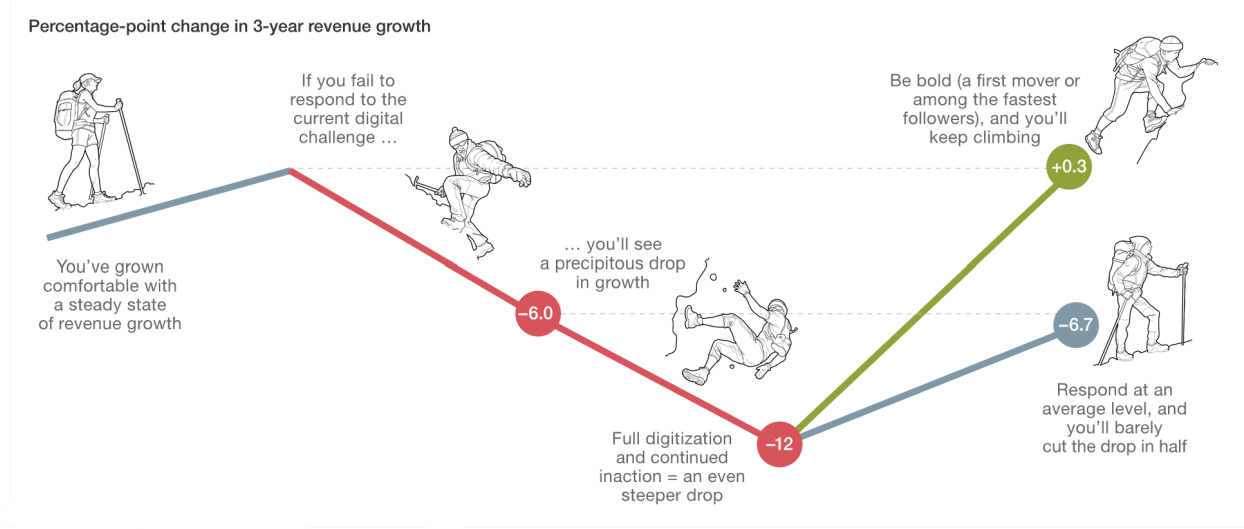
Figure 1: Digital Disruption Timeline



(Bughin et al., 2018)

As pictured above, figure 1 (Bughin et al., 2018) demonstrates the co-existence of traditional and digital business models with regard to their total market share. Models that obeyed a generic economic structure slowly lost market share with the integration of new digital business models within the same segment. Bughin et al. (2018) indicate a "tipping point" where both structures clash, leading to a steady decline of available market share for traditional business models. As certain traditional methods appeal to specific target groups, one can see that the decrease in market share plateaus in the long run. However, even corporations in niche markets fail to remain competitive with the rise of novel digital options. It appears that bold movers can overcome this turbulent digital disruption, whereas companies that fail to act swiftly lose their market share and ultimately cease to exist. One could argue that this digital economic evolution demonstrates aspects of Darwinian Law, where longevity boils down to the "survival of the fittest" (Cunningham, 2022).

Figure 2: Percentage-Point Change in Revenue Growth



(Bughin et al., 2018)

Darwin's "survival of the fittest" analogy is amplified in figure 2 (Bughin, et al., 2018), where revenue growth is demonstrated over the course of three years, assuming various possible outcomes. If a corporation completely neglects digital progression within its market, it can expect an average decrease in revenue growth of 12%. Even if an enterprise acknowledges digital changes and alters its business model according to the market standard, it can still expect to lose 6.7% of revenue growth over three years. Alternatively, if a corporation acts as a digital pioneer, it can expect a steady increase of 0.3% in revenue growth compared to the pre-digital era. Many enterprises become ensnared in a regressive state by following traditional competitive measures. Historically, companies facing times of novel and uncertain progression within their sector would monitor innovative competitors and replicate successful alterations. This strategic approach burdened pioneers to dealing with excessive research and development (R&D) costs, leaving later followers to benefit in the aftermath with limited investment. Despite this fact, the migration toward a digital economy has proven the opposite to be true.

Furthermore, DTs may cause a disruption of economic rent obtained by modest corporations. Hayes & Potters (2021) define economic rent as a scenario within an inefficient marketplace where a surplus of income is achieved without the requirement of increasing production costs. For example, if an individual is willing to sell their property for $100,000 and a prospective buyer offers $110,000, the economic rent on the sale would be $10,000. This phenomenon can be

applied to digital projects in conglomerate organizations, as software can be scaled with limited financial strain. Hence, dominant companies have the upper hand by eventually reaching zero marginal costs and, as such, have the ability to lower prices. As a result, this suppresses lower and mid-scale companies from remaining competitive. Moreover, vast digitalization ultimately leads to increased price transparency for the end-user, which diminishes most opportunities for companies to obtain additional revenue from their clients.

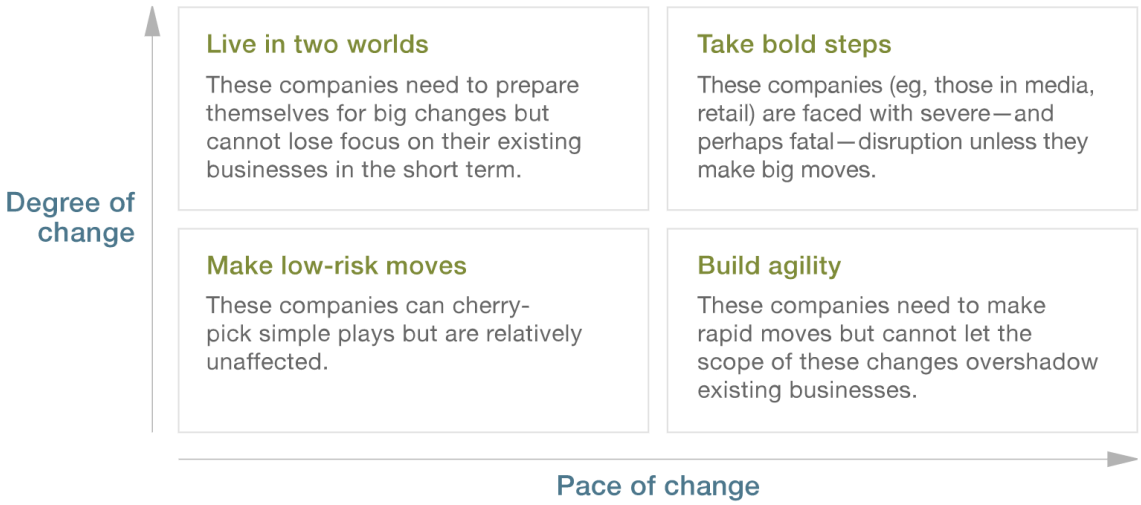
The third risk identified by Bughin et al. (2018) is regarding the immense scalability of software-as-a-service (SaaS) products from conglomerates, which may institute cross-industrial monopolies. Digitalizing internal processes and tracking competitors may not be sufficient for small-to-medium-sized enterprises (SMEs) to remain competitive. The rise in scalable SaaS products launched another novel economic shift. Large and agile conglomerates that offer SaaS products can offer their services in other industries with little additional effort and costs. This phenomenon merges different industries into distinct digital ecosystems, which a few big players usually control. This is a considerable risk for SMEs, as the competition has the opportunity to obtain a near-limitless market share. As discussed in the previous point regarding digital economics, the extended market share will allow digital monopolies to lower their prices across various sectors and "buy out" SMEs' existing market share.

As aforementioned, while observing the advancing global economy, digital pioneers experience positive returns while others fall behind. However, corporations may become too narrow-focused as they only identify core digital market disruptors. Whilst this is an effective strategy to identify one's most prominent threats, one must not overlook smaller players in the market, which are also digitalizing their business model. Traditionally, digitalization and DTs are associated with business-to-consumer (B2C) markets rather than business-to-business (B2B) segments. Bughin et al. (2018) conducted a study between 2015 and 2018 which showed that digital transformations were, in fact, of higher importance in B2B business models rather than in B2C markets. Keeping mainstream projects in view is imperative, yet failing to recognize emerging digitizing segments may cripple a company's competitive advantage.

The fifth and final risk identified by Bughin et al. (2018) is regarding a corporation's approach to facing digital disruptions. Market disruptions of any kind may cause turbulence within traditional business models, as their future success is challenged overnight. This causes internal stress and may trigger the business' "fight or flight" response. A typical response is to counteract the

disruption by creating a novel business model. Unfortunately, this approach may not be feasible in each business case, as the company may have an existing client base for the previous model.

Figure 3: Adaptability Matrix



(Bughin et al., 2018)

Bughin et al. (2018) demonstrate their take on how establishments should react to digital disruptions in figure 3. Depending on the degree and pace of change, the business should adapt its response. If a severe disruption is experienced, the company should take bold steps to mitigate any risk of falling behind its competition and possibly causing business-critical blunders. On the other hand, if the disruption is noticeable but not severe, it is recommended that businesses look into low-risk moves to remain competitive. If the degree of change is advanced, but the disruptive pace is limited, companies have more time to react and develop appropriate measures to establish long-term strategies. If the latter occurs, swift measures need to be taken, nonetheless, the projects should not prioritize over current crucial business matters.

2.1.2 Entrepreneurial Collaboration and Disruptive Innovation

Establishing a long-term digital strategy is not possible without effective innovation. Sedera, Tan & Xu (2022) acknowledge this point by suggesting that recent digital disruptions such as AI, cloud computing, the internet of things (IoT), and more have established a core foundation for innovation to flourish. Hence, it may be determined that DTs are an imperative driver for corporations to digitally innovate and ultimately accelerate the growth of their business model. Even outside the corporate context, independent entrepreneurs have identified the value of digital and data-driven technologies and leveraged them by providing novel solutions and improvements to the market (Kitsios & Kamariotou, 2022). Corporations have increasingly welcomed external support given the extensive pool of experts specialized in digital projects. Friedman (2005) observed extended collaboration between individuals, companies, and universities directly resulting from a digitally advancing society. Although collaborative activities appear beneficial, additional risks may arise as a result.

As mentioned in chapter 2.1.1, DTs carry immense risk, which Chou & Chou (2011) argue can be mitigated or intensified through innovation collaboration. Corporations may benefit from external collaboration, given the uncertainty associated with adopting novel digital concepts. One core advantage of cooperating with external partners is to disperse the risk of implementation and source key providers for necessary resources. Although, if the project is confined within an organization, the risk of the obtained digital competencies transmitting to competitors is significantly reduced. Furthermore, if the development remains in-house, it will grant the company complete control over the technology's future evolution (Chou & Chou, 2011). The consensus is that DT processes carry various possible risks, which could impede or even cripple digital migrations. Thus, corporations should implement appropriate risk management processes to analyze individual digital projects and establish a solid mitigative action plan. The mentioned risks depend on the business model and its core objectives. A corporation providing digital solutions would potentially place greater value on retaining information and having complete control. Non-tech corporate entities may be inclined to follow a risk-averse approach by outsourcing expertise. Prominent examples of the latter are businesses in the hospitality industry.

Although predominantly operating on personal interaction with clients, the hospitality industry has continuously adopted progressive digital measures over the last few decades. Buhalis &

O'Connor (2005) suggest that technology has significantly optimized the sector's customer service and business performance metrics. However, Cohen & Olsen (2013) argue that limited research has been conducted to identify how digitalization could contribute to the competitiveness of establishments in the industry. Indeed, existent empirical research appears to be limited to western nations, which may create broader misconceptions for the global hospitality community. It may be crucial for a property in London to continuously adapt its digital infrastructure, whereas one in Taipei may not extract the same value from constant digital adaptations.

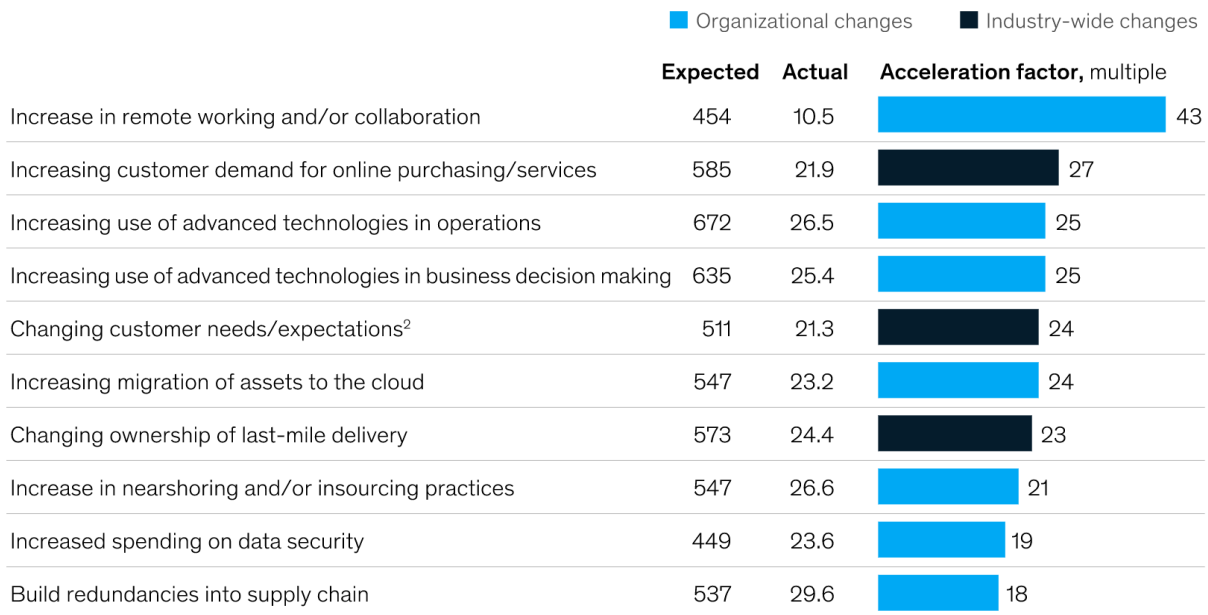
Despite the observed difference in the perceived value of digitalization across the global sector, various entrepreneurs have identified an opportunity. As aforementioned, Kitsios & Kamariotou (2022) express the strong influence of tech entrepreneurs on driving digital progression in the industry. One noteworthy example is the South Korean and Japanese-based startup, H2O Hospitality. The modest establishment's mission is to support the implementation and enhancement of DT projects in the hospitality industry. H2O Hospitality has made a monumental impact in the sector by offering clients digital solutions, such as an automated reservation management system and smart check-in and check-out processes. So far, it has obtained a staggering $30 million in funding. According to its co-founder and CEO, John Lee, the company is currently in talks with global hotel chains to scale its business model internationally. Although the company was initially established in 2015, it is argued that the SARS-CoV-2 pandemic drastically accelerated its growth and future potential (Park, 2021).

2.1.4 Impact of SARS-CoV-2

The SARS-CoV-2 pandemic has caused unprecedented turmoil, challenging the survival of numerous global sectors. The hospitality and tourism industry was particularly affected by heightened travel restrictions and lockdown regulations. At the pandemic's peak, 93% of the global population was directly affected by imposed travel restrictions (Connor, 2020). As a result, commercial aviation and the accommodations sector rapidly deteriorated. Pereira et al. (2022) state that 2020 initiated two significant events which disrupted our global society. One was the international pandemic, and the other was recognizing and implementing novel digital innovations. Despite the obvious negative impacts, the pandemic undoubtedly accelerated the establishment and advancement of DTs across international sectors.

LaBerge et al. (2020) conducted a worldwide survey with leading executives to identify a possible correlation between the SARS-CoV-2 pandemic and increased absorption of DTs. The study unveiled compelling evidence to support the claim that the pandemic positively impacted digital advancements in the corporate sector.

Figure 4: Forecasted versus Actual Implementation Time (Days)



	Expected	Actual	Acceleration factor, multiple
Increase in remote working and/or collaboration	454	10.5	43
Increasing customer demand for online purchasing/services	585	21.9	27
Increasing use of advanced technologies in operations	672	26.5	25
Increasing use of advanced technologies in business decision making	635	25.4	25
Changing customer needs/expectations[2]	511	21.3	24
Increasing migration of assets to the cloud	547	23.2	24
Changing ownership of last-mile delivery	573	24.4	23
Increase in nearshoring and/or insourcing practices	547	26.6	21
Increased spending on data security	449	23.6	19
Build redundancies into supply chain	537	29.6	18

(LaBerge et al., 2020)

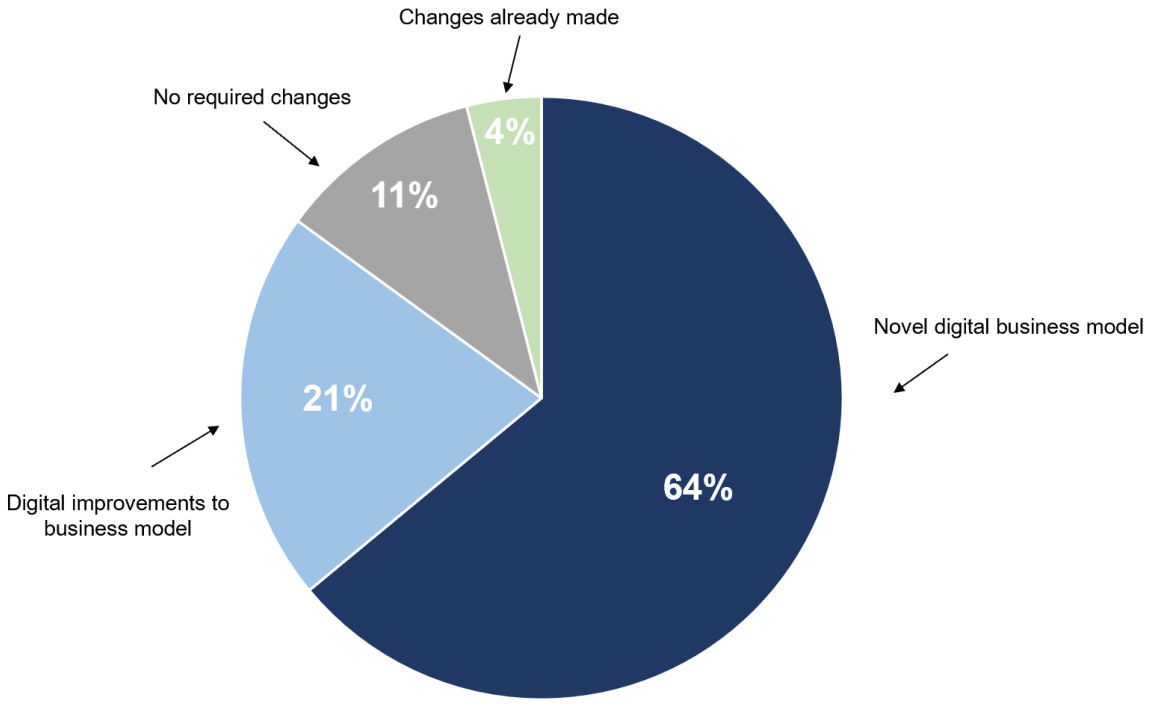
As seen above in figure 4 (LaBerge et al., 2020), corporate entities overestimated the time required to absorb digital changes. Once the Covid-19 restrictions were imposed, most establishments were swiftly required to move operations online. The core transformation, which enabled the continuation of business-critical activities, was the shift from in-person operations to remote alternatives. Prior to the pandemic, it was believed that such a migration would require up to two years to implement, whereas the actual conversion barely took two weeks. Furthermore, the ongoing migration of corporate assets to the cloud accelerated throughout the pandemic, despite such activities being standard practices for over a decade. The enabled increase of migratory cloud activities took corporations approximately five business weeks to implement during the pandemic; the same activity was initially projected to take over two years (LaBerge et at., 2020). It may be argued that initial hesitation towards DTs was due to their perceived longevity. Thus, key stakeholders may not have received much interest from

proposed implementations, given the associated risk and large budget requirements. However, the observed variance between the forecasted and actual implementation time has arguably shifted traditional views, which may positively affect digitalization processes in the future.

LaBerge et al. (2020) asked the participants why implementations were not considered before the pandemic, and more than 50% responded that it was not a priority. Despite the perceived change in managerial acceptance, one may argue that digitally upgrading one's business model was imperative to survive the detrimental effects of the pandemic. Thus, existing and novel digital projects received immense funding to remain operational and competitive during the crisis. As these alterations were an obvious priority, one could assume that the development of additional digital projects grew exponentially. Furthermore, the observed acceleration factor may indicate future interest in digital innovation, however, it could be argued that this will be short-lived. Once the crisis stabilizes, corporations with slim margins may find it difficult to justify additional costs associated with advancing digital transformations. As mentioned in chapter 2.1.1, Tabrizi et al. (2019) amplify the immense financial risk of DTs. Given that a mere 30% of initial investments extract long-term value, DTs may only be considered if the corporation is in a position to advance its business model or if they are in a critical state (such as another crisis). Hence, this inhibiting factor may decelerate or plateau digitalization processes in a post-pandemic environment.

Although the mentioned risks have fabricated a pessimistic view, the pandemic has demonstrated that a continued risk-averse approach is ill-advised. One may argue that the crisis acted as a "digital reset button", forcing traditional business models to adapt accordingly. Further research from Galvin, LaBerge & Williams (2021) provides a comprehensive breakdown of how corporations aim to leverage DTs to become economically viable by 2023:

Figure 5: Planned Business Model Changes before 2023



(Galvin, LaBerge & Williams, 2021)

As seen above in figure 5 (Galvin, LaBerge & Williams 2021), 64% of respondents believe that establishing a novel digital business model prior to 2023 is imperative to ensure longevity. A further 21% plan to keep their current business model with the inclusion of digital improvements. Thus, 85% regard digital adaptations as a crucial act to remain economically viable in the future. The remaining 15% either believe that their current business model has undergone sufficient transformation or that changes are not necessary to remain competitive. As mentioned in chapter 2.1.1, figure 1 (Bughin et al., 2018) demonstrates the observed correlation between various business models and their respective market share. The consensus is that adaptable business models will obtain greater market share than traditional structures. Although specific business models can potentially remain viable without DTs, corporations must observe market developments and realize that most competitors are eager to transform. Sufficient literature suggests that sustainable business models cannot exist without the absorption of relevant DTs.

2.2 The Hospitality Industry

Extending as far back as 15,000 BCE, where the Lascaux caves in modern-day France were utilized to shelter foreign tribes, the hospitality industry has become an integral part of our society (Hollander, 2019). As previously stated, the sector contributed 10.3% or $8.9 trillion to the global GDP in 2019 (Aksoy et al., 2022). However, the observed contribution only considers direct sources and not extrinsic factors. Local economies thrive off the industry, enabling an influx of potential international customers for regional businesses. Furthermore, the sector has acted as a core driver which has facilitated continuous globalization (Langvinienė & Daunoravičiūtė, 2015). Thus, the total economic contribution of the sector is unfathomable.

Despite its prominent economic and social role, the sector is highly volatile, given that most associated products and services are considered luxury goods. In other terms, the sector is not necessarily required to meet basic human needs. Therefore, the industry typically suffers immensely during recessions or other international crises. The SARS-CoV-2 pandemic severely disrupted the industry, leading to a drop of more than 90% in specific markets. This, unfortunately, resulted in numerous related firms filing for bankruptcy or being forced to place employees on furlough (Aksoy et al., 2022). Furthermore, the sector is notoriously known for its elevated payroll costs and slim profit margins, which only increase its financial instability during uncertain periods (Süer & Demirtaş, 2021). Efficient and scalable solutions are required to mitigate these limitations and ensure the sector thrives in the future. However, the extended volatility of the sector may downsize executive interest to incorporate digital transformations, as the risks may outweigh the potential benefits.

2.2.1 Digital Transformations in Hospitality

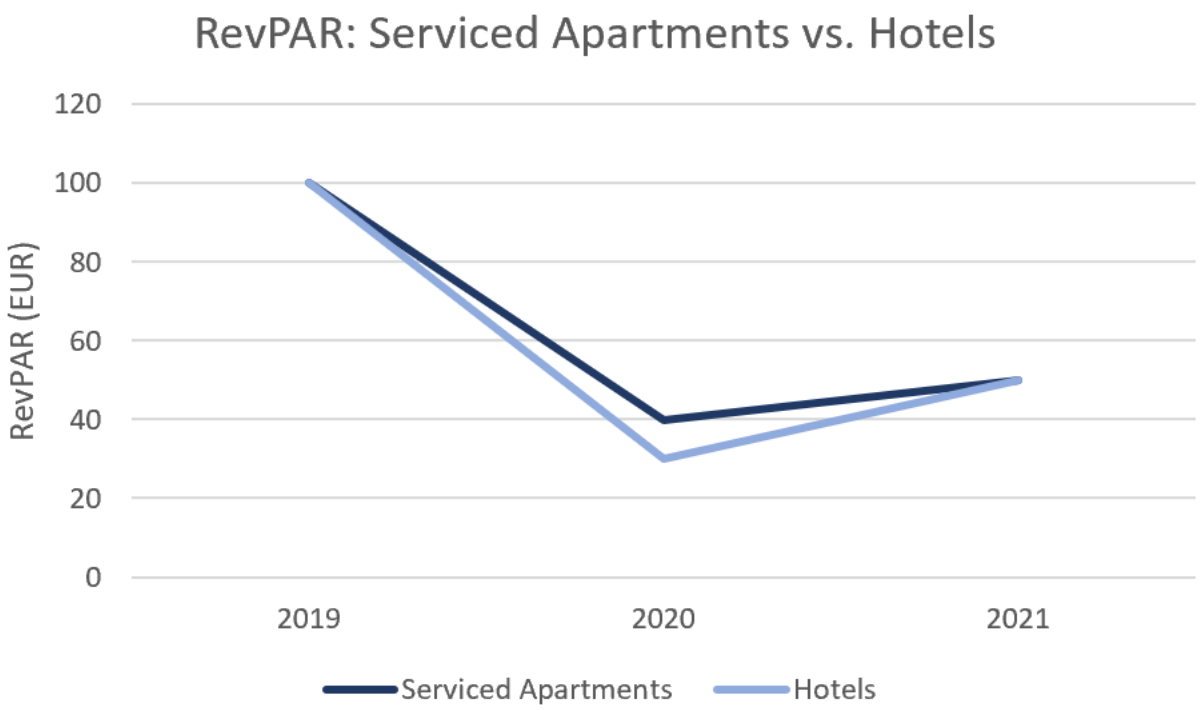
The hospitality sector has experienced a period of immense digitalization which has transformed traditional processes. Core digital advancements have added tremendous value to the sector by enabling establishments to "reach customers directly, enhance their competitiveness, and improve their organizational performance" (Ezzaouia & Bulchand-Gidumal, 2020). Although rapidly advancing over the last two decades, technological innovations were always of interest to the sector.

In 1859, the Fifth Avenue Hotel in New York incorporated the world's first "vertical railway", now better known as an elevator or lift. This additional facility was seen as an ultra-luxurious addition, as guests no longer needed to burden themselves with walking up or down stairs (Prisco, 2019). Nearly a century later, the Roosevelt Hilton, also located in New York, became the first hotel to offer television sets in guest rooms ("Stories From Hilton", 2019). Technological progression accelerated dramatically during the 1990s as the sector identified lucrative opportunities by leveraging the internet.

Online travel agencies (OTAs) started to appear rapidly, which significantly disrupted the industry. OTAs enabled hotels to market their services to a nearly limitless customer base, adding immense value to the segment. The pre-crisis trajectory expected global online booking providers to reach a collective valuation of over $1 trillion by 2022 and experience a compounded annual growth rate (CAGR) of 11.34% (Talwar et al., 2020). Despite having a positive economic impact, individual hotels struggle to remain in control over their customer channels. Lam & Law (2019) state that over 70% of the entire Asian-Pacific hotel market is distributed through OTAs, which operate on commission-based business models. Thus, individual hotels can expect to lose out on revenue, which ultimately lowers their profit margins. Despite the potential backlash, digital affinity is growing in the sector, as customer expectations are constantly developing. Once a client is conditioned to novel technology that enhances their customer journey, they expect the same convenience in other industries of interest. Lam & Law (2019) argue that it is imperative for the hospitality sector to adapt accordingly and adhere to ever-growing consumer demands to remain competitive. This has been particularly prominent in the serviced and co-living segment.

Hoff & Coll (2022) regard co-living as a residential concept that provides accommodation for three or more unrelated individuals with similar interests. Essentially, serviced and co-living options differ from traditional hospitality by offering apartments rather than rooms. This setup enables clients to benefit from personal kitchenettes and other facilities, which a typical hotel room does not offer. Thus, the accommodation space is 15-30% larger than traditional rooms (Harris, McCrow & Vos, 2020). During the pandemic, serviced apartments outperformed other hotel types in regard to the revenue-per-available-room (RevPAR) metric:

Figure 6: RevPAR Performance Serviced Apartments vs. Hotels (EUR)

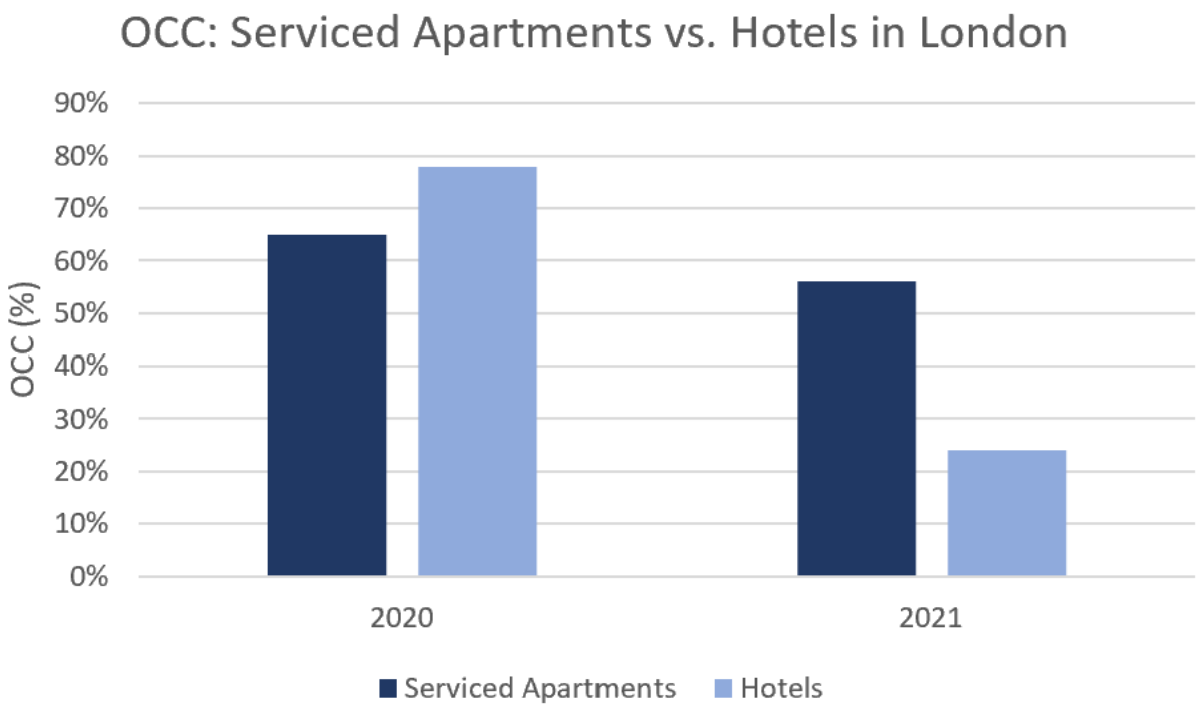


(Hoff & Coll, 2022)

RevPAR is a commonly used metric to measure a hotel's performance compared to its competitive set. Essentially, the metric is a calculation of the hotel's total room revenue (in this case, per annum) divided by the number of available rooms in the same period (Chen, Boyle & Velasquez, 2021). For example, a hotel could obtain EUR 1,000,000 per year from rooms it sold and have a maximum annual capacity of 36,500 rooms (100 per day). This would result in a RevPAR of EUR 27.40, which may be compared to competitors' rates to see if one is obtaining sufficient revenue in a particular market from selling rooms.

As demonstrated above in figure 6 (Hoff & Coll, 2022), one can observe the decline in RevPAR between serviced apartments and hotels. Although both accommodation types yielded approximately 100 EUR of RevPAR in 2019, traditional hotels saw a steeper drop in 2020. Hotels received around 30 EUR of RevPAR in 2020, compared to 40 EUR for serviced apartments. Addressing a further key performance indicator (KPI) from the industry; occupancy (OCC), will provide further analysis:

Figure 7: OCC Performance Serviced Apartments vs. Hotels in London (%)



(Cohen, 2021)

According to Cohen (2021), the OCC of serviced apartments based in London was 65% in February 2020 and 56% in February 2021. In comparison, London's hotels averaged 78% and 24% respectively during the same period. One may argue that serviced apartments did not experience such an intense drop in KPIs because guests could access all necessities from their accommodation. Especially during the pandemic, serviced apartments were able to accommodate guests and adhere to restrictive measures. Moreover, serviced apartments have a core focus on convenience, which enables the opportunity for digitizing processes. Hoff & Coll (2022) amplify the importance of digital efforts within this segment and suggest that it is an imperative measure to create a convenient experience.

One prominent example would be Numa, which has managed to digitalize 80% of its internal processes. Through this approach, Numa has significantly reduced payroll expenses that burden traditional hospitality establishments. Thus, their profit margins are extremely competitive for the sector, making them attractive to investors. Furthermore, given that they

have set up a functional digital infrastructure, Numa's business model is enormously scalable ("Our Story", 2022). It may be argued that this approach is flexible and less volatile compared to other segments in the sector. Serviced apartments are flexible, as they can offer a variety of lease periods to various guest segments. Furthermore, as furnished apartments are offered, the risk of dipping occupancy rates is mitigated during times of uncertainty (as seen above in figure 7).

3 Methodology

3.1 Research Approach

In order to appropriately measure initial assumptions, three distinct methods should be considered; quantitative, qualitative, and mixed methods (Creswell, 2014). Quantitative research attempts to measure pre-defined hypotheses by evaluating the relationship between various variables. The researcher would identify a sample population of the broader topic and proceed to retrieve relevant numeric data, which would subsequently undergo statistical analyses. Secondly, qualitative research attempts to comprehend complex phenomena through recognizing themes or patterns in a natural setting. Unlike quantitative data, qualitative data are usually unstructured and presented in words rather than numbers. A mixed-methods approach essentially combines qualitative and quantitative research to extend the study's validity (Creswell, 2014).

Before identifying the appropriate approach for this study, the researcher must become aware of existing theorems that pose significant limitations and guidelines in academic writing. Quantitative approaches adopt a positivist view, arguing that observable life patterns can be measured. However, particular academics indicate that quantitative research adheres to postpositivism by nature. Postpositivism is the inevitable incorporation of the researcher's biases into developed theories, which may contaminate the validity of the proposed results (Shilliam & McGlinchey, 2022). Qualitative research tends to follow a subjectivism path, where it is accepted that the researcher is typically guided by subjective reasoning. Thus, it is argued that the researcher should initially reflect on their personal opinions and values to mitigate possible negative impacts on the study's validity (Ratner, 2002).

3.1.1 Semi-Structured Interview Development

Choosing an appropriate method to conduct compelling interviews varies on the research mode. The researcher should follow a structured approach if a quantitative method is selected. Bryman (2016) describes structured interviews as conversations involving identical questions for each interviewee. Typically, the format follows a similar path to conducting surveys or questionnaires, where the obtained data is analyzed using statistical methods. Given the nature and objectives of qualitative research, qualitative interviews can be administrated using a semi-structured or

unstructured approach. Semi-structured interviews, similar to structured interviews, follow a pre-defined interview guideline. However, the main difference is that the researcher has the freedom to ask clarifying questions or even divert the conversation from the initial guideline. As stated in the name, unstructured interviews allow the interviewer and interviewee to discuss a topic without the constraints of a structured guideline (Bryman, 2016).

This research will follow a semi-structured qualitative approach, which requires the researcher to become accustomed to the appropriate process. Creswell (2014) identifies nine characteristics of qualitative research, which will act as a guide for conducting this study:

1. **Natural setting** - Qualitative research focuses on obtaining data through observation in a natural setting rather than in hyper-controlled environments. The core purpose of this method is to recognize how subjects respond or react to topics in a face-to-face environment. In contrast, other mentioned methods lack a personal connection with the data source.

2. **Researcher as a key instrument** - The researcher does not depend on data gathered by other academics. Instead, they collect all relevant data through their own initiatives, such as "examining documents, observing behaviors, or interviewing participants" (Creswell, 2014).

3. **Multiple sources of data** - Qualitative data is typically obtained through various sources. Creswell (2014) mentions that qualitative researchers collect data through "interviews, observations, and documents".

4. **Inductive and deductive data analysis** - Typically, qualitative research allows for two various thematic approaches. Creswell (2014) describes inductive data analysis as a bottom-up approach, where the obtained data constructs the themes. However, deductive analysis involves premeditated perceptions of possible themes based on prior research (Caulfield, 2022). A core limitation of qualitative research is that it follows a subjectivism path, which may induce further bias if the researcher decides on a deductive approach.

5. **Participant's meaning** - To reduce bias, data should be collected solemnly based on the participant's view and without the researcher's influence. Again, subjectivism could interfere, which may compromise the study's validity.

6. **Emergent design** - Qualitative research is a fluid approach, meaning that most aspects can be altered as the study evolves. If the researcher chooses to conduct interviews, they may change the questions, alter the process of collecting data or even address a new pool of possible interviewees. Creswell (2014) reiterates that the primary purpose of qualitative research is to receive core insights into a topic from participants, which is why the mentioned flexibility is applied to obtain all necessary information.

7. **Theoretical lens** - A crucial part of qualitative research is identifying literature or theoretical concepts that support practical observations. Creswell (2014) suggests that subjects such as culture, ethnography, gender, race, or class differences could be considered the "backbone" of qualitative research.

8. **Interpretive** - Qualitative research is based on how individuals perceive the results of a given study. The researcher would initially conclude based on their findings, however, others who analyze the same data may reach an alternative conclusion.

9. **Holistic account** - As previously mentioned, qualitative researchers may analyze various sources of data and information to aid their research. However, Creswell (2014) argues that a holistic approach is required throughout the study to remain focused on the core research objective.

Once the above characteristics of qualitative research have been reviewed and acknowledged, the mode of semi-structured interviews should be addressed. Interviews typically follow a synchronous or asynchronous approach. Selecting synchronous methods allows the researcher to conduct interviews in real-time, such as through face-to-face or virtual meetings. In contrast, interviewees of asynchronous methods obtain interview questions via email or alike, which allows them to respond in their own time (Opdenakker, 2006). Depending on the nature of the research, the interviewer may opt for either option to receive valid data. The advantage of the asynchronous approach is that extrinsic factors, such as body language, can be considered. Furthermore, as this approach is conducted in real-time, the interviewer will receive

spontaneous responses, which may reveal true feelings or perceptions towards a particular topic. On the other hand, asynchronous methods that cannot observe external factors may provide more detailed insights. This is because participants would have the option to critically assess the questions prior to responding (Opdenakker, 2006). However, one may argue that asynchronous structures defeat the purpose of qualitative research. As aforementioned, one core characteristic of qualitative research, outlined by Creswell (2014), is observing phenomena in a natural setting. For the purposes of this study, the researcher will adhere to a synchronous semi-structured interview guideline:

Expert	**Current Position**	**Industry**	**Relevant Expertise (years)**
1	Director of a Master's Program	Hospitality	36
2	Board Member (Revenue Management)	Hospitality	20
3	Head of Digital Transformation	Real estate	6
4	Global Head of IT	Hospitality	20
5	Junior Expert Digital Transformation	Information technology	3
6	Expert Digital Transformation	Oil and gas	9
7	Digital Strategist	Information technology	3

Table 1: Synchronous Semi-Structured Interview Outline

3.2 Thematic Approach

Braun & Clark (2008) describe thematic analysis as a "method for identifying, analyzing, and reporting patterns in data". Similar to the term "digital transformation", Braun & Clark (2008) suggest that thematic analysis lacks a conventional definition, despite being a common and foundational practice of qualitative research. In attempts to structure an appropriate consensus within the academic community, Braun & Clark (2008) define six phases of thematic analysis:

1. **Familiarizing yourself with your data** - Prior to focusing on retrieving codes and themes, the researcher must critically review and re-read the obtained dataset. Braun & Clark (2008) emphasize active reviews to maximize the researcher's knowledge of the given data. Moreover, if the researcher obtains the data, it may be argued that a heightened understanding already exists prior to the review. On the other hand, if the data was collected through secondary means, it may require the researcher to utilize adequate time to become immersed in the data.

2. **Generating initial codes** - Once the researcher has sufficiently understood the data, they may start to identify initial codes. Braun & Clark (2008) define "codes" as fundamental elements within raw data, which essentially group together subjects of interest for the researcher. Effective coding can be achieved by manually reviewing the data and highlighting specific excerpts, or software can be used to support this process. It is important to note that contradictions appear as a result of discovering initial codes, however, the core purpose of the exercise is to extract underlying themes for the analysis.

3. **Searching for themes** - The consolidation of the coded data should yield appropriate themes from the observed dataset. Braun & Clarke (2008) define this phase as a "re-focus" of the analysis on a broader scope. This step involves reviewing the extracted codes and grouping them to form prominent themes. The researcher may also characterize the themes based on their value to the broader topic (i.e. main themes and sub-themes). Moreover, it is common for specific codes not to fit into any theme, which enables the creation of a "miscellaneous" theme to remain organized.

4. **Reviewing themes** - Once the researcher has identified initial themes, a thorough examination and organization are required. During this phase, it may become apparent that specific nominated themes are not themes at all. Braun & Clarke (2008) suggest two possible outcomes in this scenario: merging or breaking down themes. Depending on the theme's diversity and accuracy, either option may apply. Throughout this phase, the researcher must take two core steps or "levels" into account. The first step involves the last point regarding critically reviewing and adjusting existing themes. Step two involves a broader approach by assessing if all themes correspond to the available dataset.

5. **Defining and naming the themes** - If the first four steps are appropriately followed, the researcher should have a fitting "thematic map" to continue the analysis. Before producing a report and demonstrating one's findings, a final in-depth review and definition of all themes must ensure an accurate analysis. Braun & Clarke (2008) amplify the importance of this phase by suggesting that the researcher should define a detailed definition for each theme. Furthermore, the themes must not correlate to the extent of overlapping definitions. If this is the case, the researcher should return to step four and review the themes again**.**

6. **Producing the report** - Once a polished thematic map and appropriate definitions have been established, the researcher may consolidate their findings based on the completed thematic analysis. Braun & Clarke (2008) stress the importance of "telling a story" to the reader throughout their paper. Thus, a captivating and comprehensible chapter should be devised to disclose the findings. Furthermore, the report should demonstrate sufficient evidence from the data to impose validity. The researcher may incorporate appropriate data exhibits to back up or clarify their points with concrete examples.

3.3 Data Collection

A total of seven synchronous semi-structured interviews were conducted between 23.03.2022 and 13.05.2022, resulting in approximately 180 minutes of raw auditory data. The interviews ranged from 13:02 to 38:04 minutes, with a mean duration of 25:43 minutes. As mentioned, a synchronous approach was adhered to, leading to the following interview modes:

Mode	Count
Microsoft Teams	4
Zoom	1
Face-to-Face	1
Video Call (telephone)	1

Table 2: Interview Modes

Given the extensive amount of data, the researcher used AI software called Otter.ai to create foundational transcripts for future thematic analysis. It is important to note that the raw transcripts obtained from the software required an extensive review and appropriate alterations to match what the interviewee said. Braun & Clarke (2008) amplify the importance of reviewing recorded transcripts, as different notations have different meanings. For example, the AI software picked up, "Transforming is much more radical. Usually want to change can be pretty easy sometimes, right?". In contrast, the interviewee said, "Transforming is much more radical, where a change can be pretty easy sometimes, right?". Failing to correct these misalignments may lead to confusion and a lack of clarity in the overall study. Utilizing technology is essential, but depending on it may become problematic.

The researcher may use convenience or purposive sampling techniques to identify appropriate participants. Convenience sampling essentially allows the researcher to collect data from an immediate and easily accessible source. However, purposive sampling identifies appropriate candidates for the chosen research topic and collects data accordingly (Andrade, 2021). The following example depicts the two sampling methods: a researcher is conducting a study on general relativity and considers two approaches to conduct interviews from a physics department at a university:

1. The researcher conducts interviews with the first five academics that they meet in the department.

2. The researcher identifies individuals in the physics department specializing in cosmology and only interviews them.

In the above example, the first method would be convenience sampling, whereas the latter would be purposive sampling.

For this study, the researcher will follow a purposive sampling technique to increase the diversity and overall validity of the research. Following the collection and amendments to the data, the researcher initiated the aforementioned thematic approach. To further support Braun & Clarke's six phases of thematic analysis, an application called Taguette was utilized for initial coding purposes. Taguette allows users to upload texts, where tags can be added and grouped efficiently. Furthermore, this approach allows the researcher to refrain from printing vast amounts of paper for coding.

3.3.1 Research Ethics

Fundamental research ethics were applied and adhered to throughout the data collection process. Five core principles, outlined by Lund Research (2012), were followed for this study:

1. Minimizing the risk of harm
2. Obtaining informed consent
3. Protecting anonymity and confidentiality
4. Avoiding deceptive practices
5. Providing the right to withdraw

4 Findings and Discussion

This chapter presents the thematic analysis results based on the researcher's assessment. As aforementioned in chapter 3.2, a core characteristic of qualitative research is that the utilized data may generate various interpretations. Hence, the reported findings of this study may be refused or challenged by external academics who visualize the data differently. However, the alternative views on the topic should spark novel research to provide a comprehensive understanding of the broader topic. Prior to expanding on the extracted patterns, a word cloud is presented to visualize key terms from the dataset:

Figure 8: Word Cloud

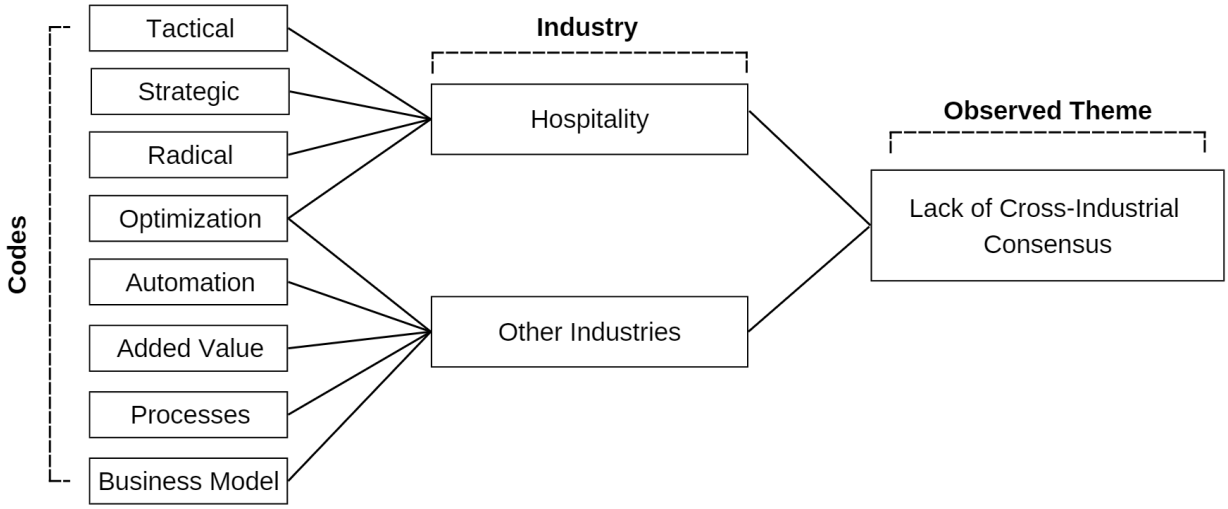
The aforementioned six phases of thematic analysis, outlined by Braun & Clarke (2008), were followed using a deductive approach to extract themes from the dataset with preconceptions from prior literature. The section will continue by providing an in-depth overview of each identified theme, including its corresponding thematic framework and concrete examples to justify the results. Three core themes were extracted from the dataset:

- Lack of Cross-Industrial Consensus
- Organizational Influence
- SARS-CoV-2 as a Digital Catalyst

4.1 Lack of Cross-Industrial Consensus

All seven participants were initially asked to define the term “digital transformation” resulting in various answers. As previous literature suggests, a clear definition is lacking and generally depends on numerous factors, such as industry and strategy. Figure 7 below demonstrates the distribution of the term throughout the obtained dataset:

Figure 9: Thematic Framework 1



Although the definitions matched each other to a certain degree, one underlying theme was observed. As mentioned, the data were obtained from seven participants that have DT expertise

in the hospitality, real estate, oil and gas, and information technology sectors. This distribution caused definitions to vary depending on the participant's professional background. The researcher observed a common parameter for DT experts in the hospitality sector, who typically defined the term from a progressive and avant-garde point of view. *Expert 1* states that DT processes are tactical and strategic approaches to "try and figure out what can be done better". *Expert 2* believes that DTs are "radical" for the hospitality sector, which raises the question regarding the sector's acceptability of novel digital adaptations. Moreover, *Expert 4* suggests that they have "seen a lot of definitions over the years", which confirms prior literature regarding the broad dispersion of the term. A few excerpts of the definitions can be found below in table 3:

Excerpt from the Dataset	**Participant**
"I interpret it as much more tactical and strategic, I think it's a strategic term for something that catches a whole lot of very tactical stuff. Companies that do effective digital transformation start at the very front line and try to figure out what can be done better, they don't start at the C suite, entertaining vendors."	*Expert 1*
"I see digital transformation as a pretty radical change. In an industry or in a company, or even a person, where technology usually plays a big role. I think it's pretty straightforward. Transforming is much more radical, where a change can be pretty easy sometimes, right?."	*Expert 2*
"Yeah, I've seen a lot of definitions over the years. I got involved in it long before it was termed as "digital transformation"."	*Expert 4*

Table 3: Dataset Excerpts 1

Experts outside of the hospitality industry generally define the term in more detail and relate it to internal processes within their industry. *Expert 3* amplifies the importance of integrating DT processes into the business model and places value on retrieving revenue from novel digital processes. Furthermore, *Expert 5* and *Expert 6* mention specific guidelines to achieve effective DTs. Excerpts from the dataset are demonstrated below in table 4:

Excerpt from the Dataset	Participant
"For me it's more than the usual making everything digital, making processes digital etc. For me digital transformation really is in the business model. It's about "how can I make money out of these digital processes that affect my day to day business?"	*Expert 3*
"Yeah, well, we interpret that in three different stages. Like digitalization, digitalization and then digital transformation."	*Expert 5*
"I think we have to consider three things for digital transformations. The first thing, I think, is a pyramid of digital transformation. We would start with modernization as the first and digitization as the second layer, but digital transformation will be on top."	*Expert 6*

Table 4: Dataset Excerpts 2

Based on these findings, one may argue that DT processes are comparably advanced in external industries, whereas the hospitality sector is adapting at a slower pace. Both *Expert 1* and *Expert 2* confirm this statement by acknowledging the limited pace of digital change within the industry:

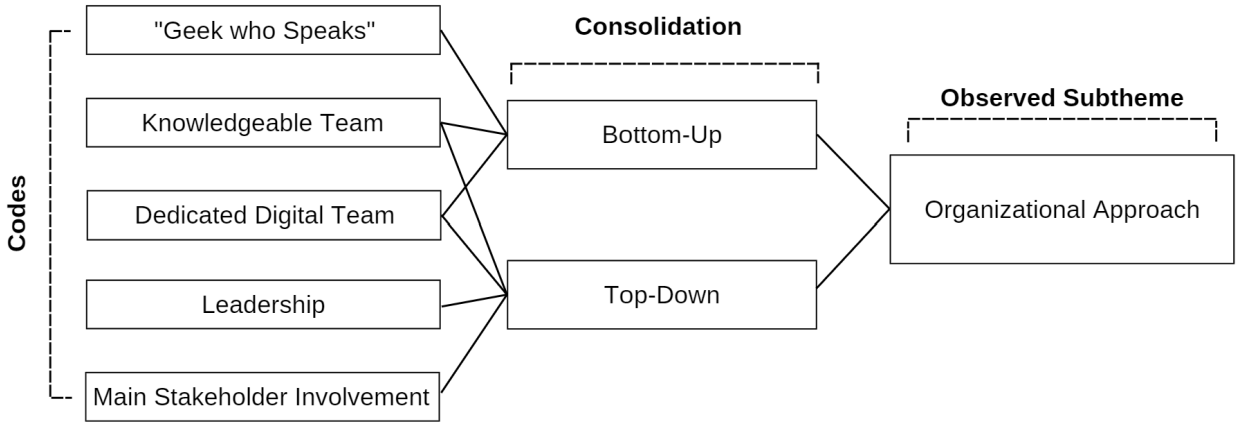
Excerpt from the Dataset	Participant
"Otherwise, we (as in the hospitality sector) are super slow with change. The margin is so small, and if we make a couple of mistakes, that could be catastrophic."	*Expert 1*
"Well, you know, we said it before, but hospitality is very slow. I think it's an extremely exciting industry where technology should enter on a deeper level"	*Expert 2*

Table 5: Dataset Excerpts 3

4.2 Organizational Influence

Given the effort and resources required to implement DTs, one may argue that a corporation's organizational structure has an integral role in determining success. Prior literature suggests that various organizational drivers exist to promote effective DTs (Galvin, LaBerge & Williams, 2021). The consolidation of related codes within the dataset has constructed two core subthemes; Organizational Approach and Organizational Resistance. Figures 8 and 9 demonstrate the frameworks for both identified subthemes, which collectively establish the broader theme:

Figure 10: Thematic Framework 2.1



When asked about organizational factors, participants were divided between bottom-up and top-down drivers to establish effective DTs. *Expert 1* believes that a bottom-up approach is integral by suggesting that a "geek who speaks" is required to lead a corporation's digital progression. However, *Experts 3* and *4* regard both bottom-up and top-down approaches to be crucial elements to facilitate DTs. *Expert 3* emphasizes the importance of retaining knowledge through effective talent management processes, which requires support from management to enable the required infrastructure. Moreover, *Expert 4* suggests that a "dedicated digital team" that is not simply "doing a side project" is necessary to ensure that there is a prominent focus on DTs. This would require an effective top-down approach within the organization to establish or "green light" an additional department. *Expert 5* concurs with *Expert 4*, by stating that "management has to also take responsibility of making sure their team does not overload their workload". Indeed, as suggested in previous literature, the corporation may be rushed to

incorporate DTs based on increasing external stakeholder demands (Wu, Fu & Kong, 2022). *Expert 2* confirms the literature by suggesting that management may require employees to digitally transform "because the others are doing the same". This extrinsic pressure may lead to the ineffective delegation of tasks, which could overload current employees and hinder effective implementations. Thus, it may be argued that an organization is required to address effective top-down and bottom-up approaches to enable successful DT integrations. Table 6 outlines the participants' views on the impact of organizational structures:

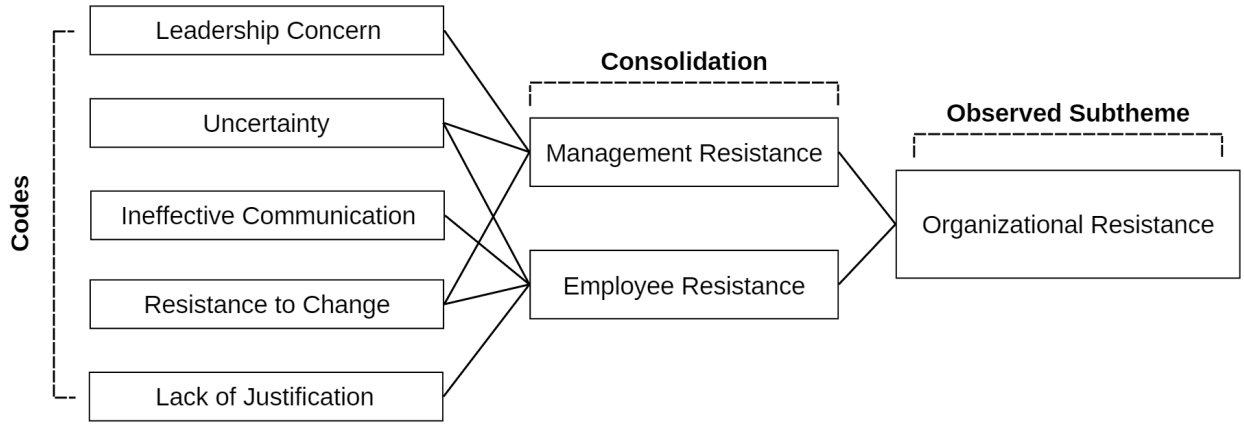
Excerpt from the Dataset	**Participant**
"I think it's a geek who speaks. Sales used to be the predominant role. I am of the opinion, that it requires someone who has an understanding of analytics and is a good communicator. Eventually, both of those skills have to enter the meeting room as an "extroverted analyst". Like I said, it's a geek who speaks that is going to be the new leader."	*Expert 1*
"If you don't have the" buy-in" from the main stakeholders, meaning the people at the top, don't start. What happens very often is the top is willing to change or to transform. They say you have to do it because the others are doing the same."	*Expert 2*
"You need a knowledgeable person who collects the knowledge of what other employees know. Because, before we get a consultant from the outside, we say "hey, we already have this knowledge". So it needs to be independent, but also one position which pulls all the strings together."	*Expert 3*
"There has been a dedicated digital team, not just IT or marketing doing it as a side project. The digital team can either live in the IT or marketing department, but it shouldn't just be expected to be an additional part of their day job, as they have other things to focus on. A dedicated digital team focusing on the digital transformation really makes the difference."	*Expert 4*

“One thing I did experience, however, was that people are mainly overloaded with work. I understand that myself, sometimes you are so overloaded that you cannot take on another project. Management has to also take responsibility of making sure their team does not overload their workload, as they are liable for overtime and so on.”	*Expert 5*
“So, leadership instead of management, where accountability is important. So they’ll embrace accountability to define a strategy and not always go for an immediate solution, but rather have a step-by-step implementation. Furthermore, proper change management is important to communicate and offer trainings to enable collaborations. The organizational structure is not as important as the overall mindset.”	*Expert 6*

Table 6: Data Excerpts 4

The second identified subtheme is regarding organizational resistance towards novel digital adaptations. Given that DTs are “transformations” by definition, one could expect resistance by most stakeholders that are sensitive to change. An analysis of the dataset has observed resistance from both management and employees:

Figure 11: Thematic Framework 2.2



Expert 1 believes that a corporation's "biggest resistance is going to be from the leadership. They like the way they used to do business". Although this is a singular opinion, a common response was that management and employees alike are sensitive to change. *Expert 2* mentions that "human nature is against change", which in regards to DTs may be due to various factors. Indeed, *Expert 3* suggests that "the major concern is they (employees) think they are not capable of working in this new environment the way they did before. So they are uncertain, they are scared of all these new things coming up.". This may derive from the integration of novel software, which could appear alarming during its introduction to a corporation. *Expert 3* continues by stating the typical thought process during a transformation; " "Am I able to cope with it?", "is my cognitive capability as far as I can manage all these digital tools?"." Change is inevitable, given the rapid advancement of implementing DTs. However, the data suggest that issues could be mitigated through appropriate measures. *Experts 3, 4, 6,* and *7* all believe that the largest resistance stems from a lack of justification. In other terms, employees tend to become resistant to DTs if they are accustomed to current processes and feel that there is no need to change.

Excerpt from the Dataset	**Participant**
"I think so, first of all your biggest resistance is going to be from the leadership. They like the way they used to do business."	*Expert 1*
"People don't like change, full stop. Now imagine transformations. Radical changes are difficult, and I'm not just talking about changes in professional lives, but also personal. So during transformations, some people are keen to change and others resist. Human nature is against change."	*Expert 2*
"The major concern is they think they are not capable of working in this new environment the way they did before. So they are uncertain, they are scared of all these new things coming up. "Am I able to cope with it?", "is my cognitive capability as far as I can manage all these digital tools?". So the first thing people say is "it always worked the way we are doing it, why are we doing it another way?"	*Expert 3*

"If it's done badly, it feels like it's been pushed without good reasoning. In some airlines where I've worked, there was quite some push back from the call center team. The call centers at the airlines tend to convert 30% to 40% of potential customers to purchase, which is enormous. You know, 1 in 3 calls convert to a sale. In regards to a website, you're lucky to get 1% to 2%. So there was a lot of pushback from some of the call centers, because the initial thought was "why would you ever push somebody to a website if they call us?"."	*Expert 4*
"Digital transformations are always a change and you will always receive some resistance with change. It's not always resistance, it can also be skepticism. People would say "we always did it this way, why should we change?". If you consider the phases of change, it generally starts with struggle and denial, but there is always the chance to convince people by experimenting. Usually, in the end, they integrate into the new environment. I would highly recommend that companies view digital transformations as a mid-to-long term journey, and not as a short term exercise."	*Expert 6*
"So some of the, the resistance that we've encountered is mostly the older generation who is extremely proficient with the old interface, whether it's the console console interface, typing in the numbers line of line, or the old windows nine five interface where they're very, very effective with those, because they have spent their hours struggling with that interface, understanding how it works, understanding all the potential shortcuts for it. And now for them to learn a completely new interface there and see if necessary"	*Expert 7*

Table 6: Data Excerpts 4

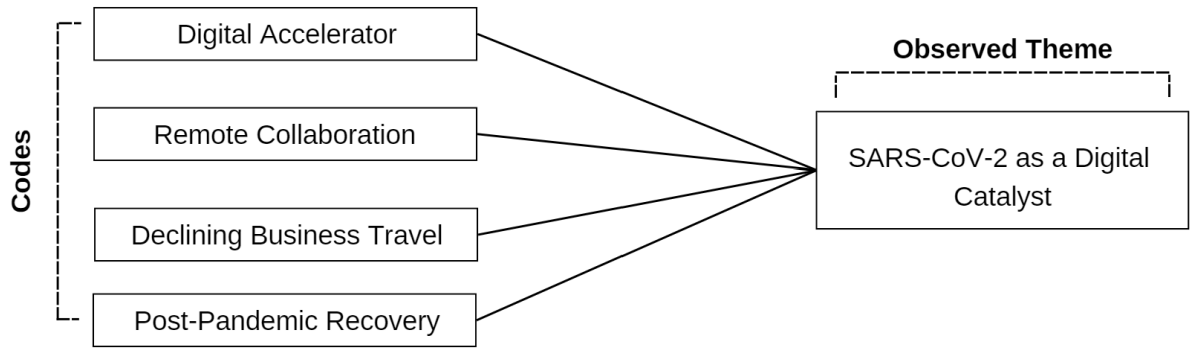
The combination of the above-mentioned subthemes creates the broader theme; Organizational Influence. As the data suggest, both top-down and bottom-up processes are required to function in harmony to create an organizational environment that is suitable for DTs to flourish. Furthermore, mitigative plans should be addressed to ensure that managerial and employee

resistance is limited. As aforementioned, the inclusion of DTs has to provide value to the corporation. Both prior literature and the obtained dataset acknowledge the issue that many DT projects are fueled by inefficient drivers, which may cause extended resistance from internal stakeholders to transform.

4.3 SARS-CoV-2 as a Digital Catalyst

The SARS-CoV-2 pandemic has issued immense turmoil across various sectors. However, prior research has determined a positive consequence of the pandemic, which is regarding digital innovation and adaptation. Thus, one may argue that the SARS-CoV-2 pandemic acted as an immense digital catalyst.

Figure 12: Thematic Framework 3



Indeed, *Experts 1, 2, 3, 4 ,6,* and *7* argue that the pandemic has been a tremendous digital accelerator. *Expert 2*, whose expertise is within the hospitality sector, states that “The pandemic absolutely pushed the fact that you can’t live without technology going forward”. *Expert 1* also amplifies that “COVID hit the gas on it massively” within the hospitality sector. Although *Expert 5* did not have such a strong impression of the pandemic’s impact on digital adaptations, they mention a significant reduction in business travel. This deems to be a prominent point for the hospitality industry, given that business travel is an integral revenue stream. *Experts 3, 6,* and *7* express the compelling shift from traditional business practices to remote alternatives, which may remain for the foreseeable future. The following excerpts demonstrate the experts’ opinion of the SARS-CoV-2 pandemic in regards to its impact on enabling DTs:

Excerpt from the Dataset	**Participant**
"COVID hit the gas on it massively and it was already getting faster."	*Expert 1*
"The pandemic absolutely pushed the fact that you can't live without technology going forward, which is not that technology will replace people again. It's that technology will help companies to perform better if you indeed adapt the analogy and you have a strategy in place that will take you from a present."	*Expert 2*
"So they need this push from the pandemic to digitalise. And they had no way out, so their guys had to stay at home because of legal restrictions. So we needed this kind of external pressure, otherwise it would have taken years to change. Now they are thinking "oh, I only need half of my office space, I can pay less rent, which is better for me as a company". So you have much more flexibility. You can hire talents on a global scale and they aren't required to move to your offices, kind of like a freelance position."	*Expert 3*
"It sped things up enormously. Especially in some of the health care communities. In my areas of expertise, which are airlines and hospitality, the QR code suddenly came back again. It was pushed some years ago as a marketing frill and never got much traction and suddenly during COVID it was the go-to way of avoiding paper menus. And we've all gone more online and less face-to-face."	*Expert 4*
"I think it improved some things, like making a digital workplace totally normal… Also the pandemic allowed businesses to avoid business travel"	*Expert 5*
"Without any doubts it was a massive booster. Working and collaborating remotely became the new normal within a very short period of time. I think it was in March 2020 where we had to adapt overnight. Digital collaboration tools like Microsoft Teams, Zoom, or any other video conference applications became an integral part of	*Expert 6*

everyday professional life. So, it was a massive boost, because the implication of the use of these tools also reduced the amount of business trips required. You can now immediately create a meeting on short notice with international teams. I think it will affect the way we work in the future."	
"I think it has highly accelerated, highly accelerated the adoption of these these transformations, especially with offline meetings onto online meetings now. If we're talking about the VA tours industry, they're also a breaking there, there has trying to think about a way to get the industry alive again. As well as the E commerce business so that because of the pandemic and because people couldn't go out and they still want to spend their money."	*Expert 7*

Table 7: Data Excerpts 5

5 Conclusion and Recommendations

The core objective of this research was to identify the significance of DTs within post-pandemic hospitality. Primary information was gathered from seven DT experts in the hospitality, real estate, oil and gas, and information technology sectors. This concluding chapter will consolidate the results from the above thematic analysis and identify the managerial implications. Moreover, the limitations and future research suggestions for this topic will be addressed towards the end of this section. To reiterate, the extracted themes from this research were:

- Lack of Cross-Industrial Consensus
- Organizational Influence
- SARS-CoV-2 as a Digital Catalyst

A prominent draw-back of DTs is the lack of a solid cross-industrial definition, which negatively affects the progression of these processes within the hospitality sector. Prior literature and the analysis of the dataset confirm that the industry is not advancing as rapidly as other sectors. Gong & Ribiere (2021) identified 134 various definitions for the term, which adds general confusion and limits the understanding of this vital topic for a sector that requires digital adaptations. Furthermore, the obtained data suggest a significant difference between the perception of DTs in hospitality compared to other sectors. Further evidence from the dataset demonstrates that DTs are vital components of the sector's post-pandemic recovery. Thus, one could argue that an industry-specific definition is required for the hospitality sector to implement effective DTs and yield benefits within a post-pandemic environment. Moreover, the mentioned advancing consumer demands will arguably push establishments to implement novel DTs to remain competitive in the future.

The organizational approach of an establishment has a tremendous impact on implementing effective DTs. Results from the thematic analysis demonstrate that the organizational structure of a corporation can either establish progressive or counterproductive environments for DT projects. Furthermore, an identified organizational issue is regarding managerial and employee resistance toward digital implementations. This may become a continuous hurdle for hospitality establishments in a post-pandemic environment as recovering businesses may not place priority on digital implementations despite the increase in consumer demands.

Undoubtedly, the SARS-CoV-2 pandemic has acted as an immense digital catalyst, which has altered the attitude and mindset toward DTs. However, despite its integral influence on the market, there appears to be uncertainty regarding the future of the hospitality sector and how it will "bounce back". Indeed, the general consensus is that DTs will benefit the industry's post-pandemic recovery. However, the novelty of DTs in the sector may cause unseen complications. Therefore, it would be advised to track post-pandemic adaptations and record the results accordingly to receive an accurate interpretation.

5.1 Managerial Implications

Based on the conducted research and findings from the thematic analysis, one may suggest a few actions for managerial implications. DTs should be implemented within post-pandemic hospitality, however, the type of establishment may influence the requirement of digital innovation. The aforementioned literature suggests that convenience-based hospitality, such as serviced apartment options, have an increased demand for DTs. Alternatively, one may argue that the requirement for DTs within the luxury segment is limited in comparison. Thus, although DTs are an imperative post-pandemic requirement in theory, the practical application may depend on the property, customer segment, location, and much more.

5.2 Limitations

As with any academic research, this study had errors and limitations. Firstly, specialized experts are scarce, given the novelty of DTs in the hospitality and tourism sector. Of the seven interviewees, three have direct links to hospitality, one has a moderate connection, and the remaining three derive from external industries. One may argue that the perspectives on DTs are industry-specific. Thus, it may be considered that the obtained data are not 100% applicable to the focused sector. On the other hand, one could also argue that diversity and cross-industrial analysis are imperative to establish a broader overview of the topic. The core objective of this research was to engage in a foundational investigation into the subject, which will hopefully spark future research in the area.

5.3 Future Research

The scope of this research acts to complement introductory studies on the topic of DTs in hospitality. Thus, it would be suggested that further investigations are made into specific aspects, such as automation, artificial intelligence, and augmented reality, to name a few.

Furthermore, as DTs are progressive implementations, it would be advised that research is updated regularly to keep up with current market activities.

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7 Appendices

7.1 Appendix 1: Interview Guideline

Section	Question	Adapted from
1. Digital transformation insights		
1.1	To begin, how do you interpret the term “digital transformation”?	(Hinterhuber, 2021)
1.2	In your opinion, how do digital transformations affect business processes? Please elaborate.	(Almusawi, Durugbo & Bugawa, 2021)
1.3	Have you observed any digital transformation trends? If so, please elaborate.	
1.4	Given your experience, what has been the most important factor or condition for digital transformations to succeed?	Almusawi, Durugbo & Bugawa, 2021)
2. Organizational concerns/ adaptations		
2.1	Let us now turn to organizational aspects of digital transformation. In your opinion, what type of organizational structure is required to implement digital transformations?	(Hinterhuber, 2021)
2.2	What kind of resistance (if any) have you encountered on the part of employees when introducing digital transformations?	(Christ-Brendemühl, 2022)
2.3	In your opinion, do employees question their job	

	security during the implementation of digital transformations?	
3. Competitive advantage		
3.1	In your opinion, does the implementation of digital transformation projects affect a company's competitive advantage?	
4. Impact of SARS-CoV-2		
4.1	In your opinion, how has the SARS-CoV-2 pandemic affected the implementation of digital transformation projects?	(Almusawi, Durugbo & Bugawa, 2021)
4.2	In your opinion, how may digital transformation projects affect a company's post-pandemic recovery?	
5. Opportunity for comment		
5.1	We have covered several items in this interview, is there anything else you would like to add?	(Pastor et al., 2018)
6. Background information		
6.1	Please state your ● Current position ● Industry ● Years of experience	(Pastor et al., 2018)

Table 8: Interview Guideline

7.2 Appendix 2: Interview Transcripts

Interview 1 background:

Setting: Microsoft Teams
Date of interview: 23.03.2022
Duration: 38:04

Expert 1 background:

Current position: Master's Program Director
Years of relevant experience: 36 years
Industry: Hospitality

1.1 To begin, how do you interpret the term "digital transformation"?

I interpret it as much more tactical and strategic, I think it's a strategic term for something that catches a whole lot of very tactical stuff. Companies that do effective digital transformation start at the very front line and try to figure out what can be done better, they don't start at the C suite, entertaining vendors. That's where most companies make a mistake, because that's where the contact is, and most companies drive top-down. So it's, I think, very granular.

1.2 In your opinion, how do digital transformations affect business processes?

I think it's very specific to your situation. And I really think it's just about looking at automation and the capabilities and continually picking off your lowest hanging fruit and little by little improving your processes wherever, wherever that might be.

1.3 Have you observed any digital transformation trends?

Yes, if you look at data from STR (Smith Travel Research), the drop is 12 to 18 months, and the tail last time was a decade. And the decline wasn't as big as this (referring to the SARS-CoV-2 pandemic) one. So that's when innovation happens. That's when hotels have more money than last year, so they try stuff. Otherwise, we (as in the hospitality sector) are super slow with change. The margin is so small, and if we make a couple of mistakes, that could be catastrophic. Everybody has bought some piece of software, that after the initial training and you had some turnover, no one's really utilizing it anymore. We're back to Post-It notes, or we're using Delphi only for the Rolodex CRM capability, not for any of the other capabilities. If you

think about robotics, think about Roomba. And now we're talking about robots more. But that's been around for 20 years or something like that. The robotic vacuum cleaner. Yeah, I personally am of the opinion that you could vacuum an entire 300-room full hotel every day with one vacuum attendant. And think of them you say five minutes per housekeeper, per room, per day. 12 rooms, that's an hour. Yeah. Ever seen a Roomba in a hotel? That cleans under the bed, it doesn't care. Have you ever seen one in the hall? No, right? So any digital transformation has to start with the user. Look at the tech companies. They used to send tech people into our environment and tell us what we should do. And we threw them out immediately because if you don't smell like a hotel, no one's gonna listen to you in a hotel.

1.4 Given your experience, what has been the most important factor or condition for digital transformations to succeed?

By far and away, it's understanding and starting with the problem, not with the technology or the solution. Quite often, I see companies that have even invested quite a bit of money. But that's because they focused on the solution and building as opposed to the problem they're trying to solve. Sometimes there's a flaw that then you have to go back and either reinvest quite a bit of time that was unnecessary, sometimes quite a bit of financial resources in fixing it. Whereas if they had gotten much more in touch with the business in the first place, I think they would have been able to anticipate that issue and had that functionality in their solution from the start.

2.1 In your opinion, what type of organizational structure is required to implement digital transformations?

I think it's a more esoteric answer than that. I think it's a geek who speaks. Sales used to be the predominant role. I am of the opinion, that it requires someone who has an understanding of analytics and is a good communicator. Eventually, both of those skills have to enter the meeting room as an "extroverted analyst". As I said, it's a geek who speaks that is going to be the new leader.

2.2 What kind of resistance (if any) have you encountered on the part of employees when introducing digital transformations?

I think so, first of all, your biggest resistance is going to be from the leadership. They like the way they used to do business. I was talking to someone the other day, about a very interesting idea regarding a scheduling tool, but there are a lot of those out there already. But I think, what would matter, is employee sentiment. Imagine if you started to have a large database on

sentiment, you could start to see changes in people's sentiment and predict what will happen next. Like, "Hey, you guys have two weeks until this kid quits". Guaranteed, they are already looking for jobs elsewhere. So I think that leadership support, more than anything else, is the key. But older generations are apprehensive about trying new things. Your generation, however, will try things, just because it's new.

2.3 In your opinion, do employees question their job security during the implementation of digital transformations?

I think it's possible that employees might question their job security, but it would be a long-term thing, I think you wouldn't necessarily see it in the short term, you know, that some machine is coming to replace you in their inboxes on the loading dock. And then I think what people are going to see over time is there not so many employees, and so this technology is going to be utilized to improve people's lives and to effectively fill positions that are chronically vacant otherwise. And so I think with some practice, that's actually not going to be a threat at all to people. And I think that people will see that it's actually, you know, very much of a just like a dishwasher is a theoretically unnecessary piece of technology if you have an infinite amount of labor, but certainly, from a dishwasher a dishwashing person's perspective, an automated dishwasher is great, you know, technological transformation, if not digital.

3.1 In your opinion, does the implementation of digital transformation projects affect a company's competitive advantage?

I think it absolutely does. But it goes back to my answer to number one, I think it does because in some cases, technology is the only or the most efficient way to solve a problem, not just technology for technology's sake. And all you have to think about is all of the hotels that jumped on board, and put those really cool radios with the integrated iPhone charging stations in their rooms, that were really super amazing for about a year, year and a half, but our 10-year capital cycle, many hotels still have them. And they are only able to charge an iPhone that is like five generations ago. So the technology for technology's sake, no, solving the problems that technology lets you solve that couldn't be solved before or cost a lot more money to solve. Yes, that'll be a huge, huge advantage.

4.1 In your opinion, how has the SARS-CoV-2 pandemic affected the implementation of digital transformation projects?

COVID hit the gas on it massively and it was already getting faster. The cloud influenced that a lot. It used to be if you wanted, to offer software to the hotel industry, you had enterprise software, Opera, Delphi, right? Like these big massive things. I worked with a company, The Hotels Network, a super cool company. They're booking engine agnostic, and they use AI to personalize the booking experience. So in other words, their software intervenes with whatever booking engine you already use, you don't have to get rid of that one and get a new one. And so if you think of it, like that, I often think of that tech stack, kind of visual and have you ever seen, like, the blueprint of a hamburger poster? You know, the bun, the pickle the mustard, like it all kind of shows you the stacks. What's happening now as people are figuring out that sometimes a fried egg belongs on a hamburger. And that was impossible before. If you contacted Opera and said I want this thing. Unless 50% of their community wanted it, you weren't going to get it. And now, with the way the cloud works, people can do it.

4.2 In your opinion, how may digital transformation projects affect a company's post-pandemic recovery?

I think it's just it's really more an issue than anything else, it's been accelerated. And I also all of that, so there's more technology available at a more rapid pace. So there's more considered more to consider and more decisions and things like that. I think the other thing that happens with a trend a recovery is recovery is not democratic. In other words, it doesn't rise like water, some hotels will be some companies will be super successful, while other companies are still in the midst of their, you know, pre recovery stage, mainly because as more customers become available, they don't distribute themselves equally, they go to the best operators and the best marketers. So I would say that, you know, transition projects that are specifically geared towards finding new market segments that weren't existing before the pandemic, for example, or fighting, taking advantage of business as the level of business returns into the marketplace. You know, those are going to have a gigantic impact. But again, technology for technology's sake. In some cases, it's just gonna gobble up money and help make things less successful.

5.1 We have covered several items in this interview, is there anything else you would like to add?

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Interview 2 background:

Setting: Microsoft Teams
Date of interview: 30.03.2022
Duration (in minutes): 32:26

Expert 2 background:

Current position: Board Member (Revenue management corporation)
Years of relevant experience: 20 years
Industry: Hospitality

1.1 To begin, how do you interpret the term “digital transformation”?

I see digital transformation as a pretty radical change. In an industry or in a company, or even a person, where technology usually plays a big role. I think it's pretty straightforward. Transforming is much more radical, where a change can be pretty easy sometimes, right? So the transformation to me is pretty radical. It's a radical change in our way of working, which is linked to technology. So that means that there is some technology that enters the space of humans and what really counts here is to find synergy between humans and technology.

1.2 In your opinion, how do digital transformations affect business processes?

It depends on what a company wants to do. I think that usually, the impact is very, very deep. This is definitely something that people underestimate. So the impact that a digital transformation has, is fundamental. It's not, as I said in the beginning, a simple change. And this is where we see companies struggling very often because they underestimate it. In this case of the transformation, it impacts your business a lot. It's a new way of working, but above all, it's a new way of thinking. And it's not only a simple new way of operating, kind of a project management, you know? There's a big difference between project management and change management. Project management is very simple, you implement you know, whatever it is, something new, right? So you just try to accelerate your processes, you're trying to, you know, optimize some of the processes and so forth. So you have a kind of a project where you just start implementing. You have some checkboxes, right? So that all gets done, training gets done. It works because that's how it is received, you know, check, check, check, check, but that is not transformation. So I think that the impact is very deep and 80% of the cases I think that I've seen in my short experience or 20 years of experience, is basically the fact that (companies) under-estimate the impact of such a transformation.

1.3 Have you observed any digital transformation trends?

Well, you know, we said it before, but hospitality is very slow. I think it's an extremely exciting industry where technology should enter on a deeper level. I worked at software companies for around eight years. I'd be working at a corporate level, big brands and smaller hotels, and it's all the same to be honest, it doesn't really matter. You can talk about a hotel with 42 rooms or one with 900 rooms in the middle of London, or you can talk about resorts, it doesn't really matter, the concept is the same. I see digital transformation as more than a trend, it might have been a trend before, but now it's a necessity. So if it is a trend, it means that you are just innovating, right? You've got the first adopter and then you've got the rest, you know marketing processes and other stuff, so I think that the trend was probably pre-pandemic. People were innovating, trying to see the future, and everybody was telling them why they didn't learn anything prior to the crisis, because it's not the first time we go through a crisis, right? This is a major one and the magnitude of this crisis is huge. And we hope, I hope, at least not to experience another crisis in my next 15 years. So the game is, you're understanding and learning from the past, and are living in the present, because you cannot really live in the past. You learn from the past and even the present that you're trying to protect yourself and play in the future. The trend was when we have been hit by a crisis in the past, 2008, 2011. But still, people don't move quick enough or fast enough. Now, I think, COVID-19 really accelerated the process. So I think it's not a trend anymore, it's more a necessity. When we see big brands moving very fast with technology, or even smaller ones, I think they really realize if they don't do it now they're really gonna miss the train somehow. So they're going to say, "how do I gain ground against competitors?". Now that situation is what it is because the pandemic has been, is still is still pretty impactful.

1.4 Given your experience, what has been the most important factor or condition for digital transformations to succeed?

The best condition or factor for digital transformation to be successful is people, because you can buy any machinery, you know, if you have the money, big brands like Hilton or intercontinental or even smaller hotels, independent hotels, boutique hotels. It's not like they don't have the money, right? It's more a question of people and that's the biggest obstacle. So if you just ask me, what is the main factor? The main factor to succeed is people in the end. And when I say people, I don't mean the revenue manager, I'm just talking about the director. I'm just talking about the general manager. I'm talking about the owner, I'm talking about these people that are c-level.

2.1 In your opinion, what type of organizational structure is required to implement digital transformations?

Well, listen, I think that the first step, probably the very first step, is to have a strategy, and I think that's the starting point. So you just need to collect the right people. What do you want to achieve? What is your dream? You need to have an objective, you need to have a scope, right? Say "okay, this is my strategy. This is what I want to achieve in five or ten years", depending on the magnitude of the change and the transformation. So this is where it really starts, then I think you just need to fully commit, you know? If you don't have the" buy-in" from the main stakeholders, meaning the people at the top, don't start. What happens very often is the top is willing to change or to transform. They say you have to do it because the others are doing the same. Then management picks leaders and tells them to transform something in five years and lays out their expectations. Management should actually be involved from the beginning, because the responsibility and accountability of transformation comes from the top. These are the first two steps if you think about a clear, integrated strategy. You then need to pick the ones that are very open to change and to transform, that can align with the expectations of C-level or the owners. If it's a big company, just start communicating properly. I think communication in this case is the key. So you need to really communicate it in a way that they understand the why, the what, and the how. If you don't get these people on board with clear communication, I think you're gonna lose straightaway.

2.2 What kind of resistance (if any) have you encountered on the part of employees when introducing digital transformations?

People don't like change, full stop. Now imagine transformations. Radical changes are difficult, and I'm not just talking about changes in professional lives, but also personal. So during transformations, some people are keen to change and others resist. Human nature is against change. It is true that depending on the leader and other leadership, you know, you might actually have people buy into the change or transformation quickly, because they understand that that's the way it is. I'll give you an example; revenue management has seen technological developments, but everybody was resistant because they were thinking that the revenue manager position will disappear. If they don't understand the change, the resistance is full, because they believe it's a threat. They believe that they're going to be left out of a job. We explain very often, and I'm a firm believer in this, that synergy counts. Of course, if you don't

change yourself, you will be replaced by a machine, 100%. So there's no question, but it's not just in hospitality. I think it's everywhere, right?

2.3 In your opinion, do employees question their job security during the implementation of digital transformations?

Now the resistance I always see is the fact that they're always scared. They're always afraid of losing their job. If the transformation is not communicated properly, if it's not built on a case that shows that they need to move on, then you will have resistance everywhere. However, I have to say that on some occasions, if employees don't change, they might actually be better off at another job. At a certain point, you cannot hang on to negativity or on people that don't want to change, right? Resistance of transformations is experienced often, because employees believe that they're going to lose their job and be replaced by a machine.

3.1 In your opinion, does the implementation of digital transformation projects affect a company's competitive advantage?

Absolutely and we see this with our own eyes. There's no discussion on this, right? It doesn't mean that you need to have the latest digital transformation possible in your hotel, but you need to transform from what you have been doing for the last 30 years to something more dynamic. When we look at competitive advantage, I'm talking from a revenue management perspective, not from an operational perspective. Don't forget that digital transformations within hotels is not simply referring to revenue management, it can also be food and beverage, other operations, or it can also be to improve room cleaning. Transformations enable rooms to be cleaned much quicker and faster than before, so you need less housekeeping. So when you build a new hotel, you build it in a way that you can actually clean it easier, right? But I'm just sticking to what I know best, which is revenue management. You can see straight away with dynamic pricing that you can actually optimize the combination between request base rates, how far in advance the booking has been made, how long the booking is, how many people, which rooms, which dates, which day of the week, right? This allows the machine to do the work, so you don't spend time calculating and reviewing the data. If you still believe you can extract everything from the PMs and just look at it in Excel, you are losing hours just to understand the macro, to understand the data. I mean leave it up to the machine and see the difference, because the ones that have, notice that they have more time to work on other things.

4.1 In your opinion, how has the SARS-CoV-2 pandemic affected the implementation of digital transformation projects?

The pandemic absolutely pushed the fact that you can't live without technology going forward, which is not that technology will replace people again. It's that technology will help companies to perform better if you indeed adapt the analogy and you have a strategy in place that will take you from a present. So this is this is what I see.

4.2 In your opinion, how may digital transformation projects affect a company's post-pandemic recovery?

Yes, even though I hear both sides, right? So honestly, I see people that doubt digitalization, despite the pandemic. They're going backwards rather than forwards, right? As an example, they say that historical data has no more relevance when talking about revenue management. So you implemented a fantastic system, you know, calculate new pricing in real time and so forth. But it's always based on historical data, which builds up trends and patterns. But a lot of people say that we can not rely on historical data from the last two year, because they were exceptional scenarios. I think that is a big mistake, because you are collecting data for the future. So, I would definitely consider digital transformations or at least, you know, implementing some technology to carry on. The pandemic absolutely pushed the fact that you can't live without technology moving forward.

5.1 We have covered several items in this interview, is there anything else you would like to add?

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Interview 3 background:

Setting: Face-to-face
Date of interview(s): 04.04.2022
Duration (in minutes): 26:00

Expert 3 background:

Current position: Head of Digital Transformation
Years of relevant experience: 6 years
Industry: Real estate

1.1 To begin, how do you interpret the term “digital transformation”?

For me it's more than the usual making everything digital, making processes digital etc. For me digital transformation really is in the business model. It's about “how can I make money out of these digital processes that affect my day to day business?” And especially, how can I make processes that are made beforehand with manual labor work? How do I make them digital? Not only switching from manual labor to digital work, but what's the monetary value? How can I make customers benefit out of that? And that's like the whole digital transformation process. So not just making something digital, but also creating business value out of it. And customer value in the end.

1.2 In your opinion, how do digital transformations affect business processes?

I mean, people have to rethink the way they work. And that's the major factor we see with every change, in every industry, at any time. However, with digital transformations it is like the thinking that counted years beforehand, may change completely. So the way they used to work, the way they think that something works, and which worked beforehand will not work anymore. They probably have to completely rethink what they are doing and they have to cope with it. So maybe their capabilities are not as good in the new environment as they were beforehand. And therefore there is a change of habits. There is a change of thinking, there is a change of as I said before, the business model. With this come the following questions; “how do I approach the customer?”, “What does the customer value in the new system?” It may be different to the previous systems, so the unique selling propositions, the core capabilities, the thing that made the business successful in the past may switch completely. I have to be able as an inventor or as a founder to adapt. It's always hard to say okay, that was working in the past, but not anymore. That's the hardest part in this whole transition.

1.3 Have you observed any digital transformation trends?

A lot of them. I've always switched them into internal efficiency processes. So the process management and the external one with the business model. For internal times, it's all about "how are we working?", "how is the process to get to point x which we want to achieve?" Especially now, it comes down to data, "how can I process data?", "how do I get my data?", "how do I make the interfaces between various systems to make one independent data platform?" Business intelligence is also one of our backgrounds. All these tools to evaluate data. I know beforehand, you made a presentation for the CEO or something like that. That's one week of work and he has to flip through 10 slides but nothing is automated. So if you got the market value for Indonesia, for example, you have to look into three different templates, make some numbers up and then you got your number. The big idea and the big benefit we got now is we make the interface one time between these three stock forces. We connect it to one BI tool, and the CEO doesn't need his presentation anymore. He got it visualized and he has the filter option for himself. So if he wants the 2028 forecasts for Indonesia, he can select it all by himself. We don't need the resources internally, we no longer need 10 guys who can make a slide deck. You set it up one time and the data is flowing. So that's the internal part. For the external part, software as a service, so this licensing part, plays a large role. It's not that you buy a one off and you get the product. Think about Microsoft, beforehand it was that you buy the Office package once and now you pay monthly or annually. It's this licensing fee, so many customers, or many companies out there, especially also in our industry, are going into the software as a service business. Because this recurring cash flows are interesting to build up in the business model.

1.4 Given your experience, what has been the most important factor or condition for digital transformations to succeed?

Invest in knowledge. That's it for me. In my future vision every company has got at least some tech guys. It depends on the transformation, but some "tech-ers" who are not just first level support and give you your laptop and mobile phone when you're entering the company. But guys that know how to program. These guys know how to set up interfaces. These guys know how to create a data platform, because that's what you need. And if you're buying it off the market, it's pretty expensive. And the process to reach the transformation you want, is huge. And there you could easily pay two or three people in house and you contain the knowledge in house and this wisdom they got is worth a ton. And we say data is the goal of the future. And

therefore you have to invest to know a lot about this goal of the future and don't obtain it externally. I guess it will be a success factor for most companies to get this new knowledge inside the company.

2.1 In your opinion, what type of organizational structure is required to implement digital transformations?

We are a holding company with various different companies, where each and every one of them has to digitally transform. How do you manage it on a large scale? Each company will hire a consultant. So you got 10 consultants in house, but in reality we need to collect the information once and spread it throughout our organization. That's also my part in the holding structure. You need a knowledgeable person who collects the knowledge of what other employees know. Because, before we get a consultant from the outside, we say "hey, we already have this knowledge". So it needs to be independent, but also one position which pulls all the strings together.

2.2 What kind of resistance (if any) have you encountered on the part of employees when introducing digital transformations?

The major concern is they think they are not capable of working in this new environment the way they did before. So they are uncertain, they are scared of all these new things coming up. "Am I able to cope with it?", "is my cognitive capability as far as I can manage all these digital tools?". So the first thing people say is "it always worked the way we are doing it, why are we doing it another way?" So I guess the thing about what worked for us is, to have a clear vision on where you want to go and take them with you. So let them participate right from the start. You can't put every input of your employees in the project, but at least hear them, let them have a voice and tell them openly and very transparently why something is just not possible. And why are you deciding to make this new transition. So if you let them be part of the journey, and let them somehow also participate in it and shape it a little bit, you can place them as a valuable part of the new way of working. I guess that's the best.

2.3 In your opinion, do employees question their job security during the implementation of digital transformations?

Definitely, because we visited a company during my time as a student in Milan. It's a huge provider of telecommunication and they say they have a chatbot now. The first question was "you have a chatbot, but what will happen with the call center guys? You have hundreds of guys

in the call center". The owner responded that he re-trained them, but in reality, if you have a chatbot, you don't need a call center. And you can't retrain everybody, that's the sad truth here. But I think if the employee is open to change, and open to learn, there's always a way to get them involved in a transition, even if they do not have the skills or the university background. I guess if they are willing to transition, or make a new educational step in their life, then it will be a way to get them to survive the transition. But yeah, for sure, if you have always worked in this little bubble, and you don't change, for sure there will be uncertainty about your job.

3.1 In your opinion, does the implementation of digital transformation projects affect a company's competitive advantage?

Definitely, because there are so many different aspects you can look at to become more efficient and faster. You have so many more possibilities if you're doing a digital transformation or if you're automating items. I'm very much against anything that is inefficient and that is not automated. If I have to do the same process three times a week, I ask why do I have to do it three times a week if it can be automated? I have a guy that works in sales. He has to fill in the data when he gets into contact with a customer etc. He simply made a script for himself that fills in all the blank fields, so it just gets it done. Everything that is not really highly sophisticated and is a task that is recurring, can be automated. And only with that you have an improvement in efficiency, which is just the internal part. The external part can make so much more value for your customer if you digitalize your product. You can make a customer experience that is for the customer way more valuable. And as a digital transformation head, you should not lose the personal connection. So you cannot digitalise everything, but the parts that are recurring, that have to be automated should be. Think about a hotel. Maybe you as a customer want the contact, you want the personal interaction, because that's the feeling you want on holiday. So there's always the question, what should you digitalize and what should you not?

4.1 In your opinion, how has the SARS-CoV-2 pandemic affected the implementation of digital transformation projects?

I guess we saw it in each industry, especially regarding home offices, the way of working changed tremendously. So we weren't able for two years now, or on the way to more than three years actually, to come to the office to work there. They had to be quick to adopt applications such as Microsoft Teams. Before the pandemic, if employees were working from home, you would think that they're not doing anything and that it's a "holiday". But now they are seeing that

the numbers are the same, we're getting the same revenues, business is flowing, and they say "hey, 70% of my guys are actually at home". So they need this push from the pandemic to digitalise. And they had no way out, so their guys had to stay at home because of legal restrictions. So we needed this kind of external pressure, otherwise it would have taken years to change. Now they are thinking "oh, I only need half of my office space, I can pay less rent, which is better for me as a company". So you have much more flexibility. You can hire talents on a global scale and they aren't required to move to your offices, kind of like a freelance position.

4.2 In your opinion, how may digital transformation projects affect a company's post-pandemic recovery?

It depends on how you managed to transition in the first place. If it worked with the transition to a home office environment, I wouldn't call it a "recovery", because business moved on. Now how do you get people back to the office? How do you implement this day-to-day interaction between employees? Like elevator talks, getting coffee, or something like that. But how do you get people to come back to the office? It's very convenient to sit at home in jogging pants and use MS Teams. So I guess it depends on how you motivate your guys to not just use the digital, virtual world, but also give them some value to return back to the office. But I guess it depends on the person, right? Some people just want to interact with other people at the office and are bored at home. I guess you need a balance, and that's where the future is heading.

5.1 We have covered several items in this interview, is there anything else you would like to add?

A hard topic especially is innovation and it always goes in the direction of digitalization or digital transformation at the moment. And I guess a hard part in the future is how do you fund innovation and digital transformation topics? For me personally, it's always to explore and exploit to speak in university terms. Larger, but also smaller companies, should invest into research and development. This is especially required for digital transformations, if you stop investing now as the pandemic is almost over, that would be a disaster. Some companies identify "digital transformation" as a one time implementation. A transformation is a continuous process to explore and exploit, not a one time change. It's a constant work in progress, which most businesses don't understand. A mindset shift is required in the upcoming years, otherwise it will be doomed.

Interview 4 background:

Setting: Zoom
Date of interview(s): 07.04.2022
Duration (in minutes): 13:02

Expert 4 background:

Current position: Global Head of IT
Years of relevant experience: 20 years
Industry: Hospitality

1.1 To begin, how do you interpret the term “digital transformation”?

Yeah, I've seen a lot of definitions over the years. I got involved in it long before it was termed as “digital transformation”. Back in 2000, when British Airways joined the online hub. So for me digital transformation is a data led rethinking of how our organization uses technology, people and processes. And those are the key things; tech, people, and processes, with the objective of driving new business models and new revenue streams. So that's the abbreviated version. So for me, it's doing things differently, using online and digital technology. It's all about data, data first, data led.

1.2 In your opinion, how do digital transformations affect business processes?

Our best implementations have actually been either sales, driving sales online to reach a larger audience, or improving customer service, which could be chatbots, live chat, or even email responses. So the big ones that have worked really well were sales, driving different revenue streams, and secondary customer service. The sectors that really haven't really picked up digital transformation so far that I've seen, tend to be finance and legal. They tend to be very much Excel driven, email driven, or face to face chat driven. So still some opportunities there, but yeah, the two main sectors that I have seen affected by digital transformations are sales and customer service.

1.3 Have you observed any digital transformation trends?

Yes. Back in where was it? That was around the time the first iPhones were coming out. Then the app store, Apple got lucky. They went to the app store almost by accident. And I think then, people there had a big, big interest in moving into apps and every brand suddenly had an app.

It's actually no longer a must have to have a mobile app anymore. And those apps that are out there are the other big ones right like Facebook and Twitter, they've gone full full steam, Netflix, etc. More recently, I've seen people going back to PWAs or progressive web apps if you've heard of those before? Basically, PWAs are not native to iOS or Android, but more websites that are designed for small screens. Websites are becoming more dominant. So there was an initial interest in mobile apps and now I think it's very much a website first, mobile apps second environment. However, certain apps out there are very powerful. SoHo House has got a very significant app and it's used for pretty much everything from member check in, check out, food and beverage, paying a check, watching events, meeting people. It's like a mini LinkedIn. So that's a good example of an app that actually makes sense. But a lot of hospitality has dropped apps and are just pushing their mobile websites as a prime digital channel.

1.4 Given your experience, what has been the most important factor or condition for digital transformations to succeed?

It has to be top down, C-suite driven. That was the case when I worked for British Airways and Virgin Atlantic. It's certainly the case where I am now. But yeah, C-suite buy-in with an appropriate budget and a proper focus on the transformation is key.

2.1 In your opinion, what type of organizational structure is required to implement digital transformations?

There are examples where digital transformations worked well. There has been a dedicated digital team, not just IT or marketing doing it as a side project. The digital team can either live in the IT or marketing department, but it shouldn't just be expected to be an additional part of their day job, as they have other things to focus on. A dedicated digital team focusing on the digital transformation really makes the difference.

2.2 What kind of resistance (if any) have you encountered on the part of employees when introducing digital transformations?

If it's done badly, it feels like it's been pushed without good reasoning. In some airlines where I've worked, there was quite some push back from the call center team. The call centers at the airlines tend to convert 30% to 40% of potential customers to purchase, which is enormous. You know, 1 in 3 calls convert to a sale. In regards to a website, you're lucky to get 1% to 2%. So there was a lot of pushback from some of the call centers, because the initial thought was "why would you ever push somebody to a website if they call us?". The issue with the call centers

was that you require hundreds of team members 24/ 7, which is an unreasonable cost to the airline. The answer, in my opinion, is a good hybrid mix. Complicated issues should be handled by human beings, easy processes should work through websites or apps. In the case of British Airways, all short haul flights moved online, however, most long haul enquiries remained in person due to the complicity of it. If you're going from airport A to B to C to D and then back at different rates, that's a complicated journey. That's the kind of thing human beings are currently better at. So yeah, a good balance of online and offline processes are required for the best results.

2.3 In your opinion, do employees question their job security during the implementation of digital transformations?

Yeah, I've seen a lot of change in retail supermarkets. The typical checkout person has been replaced by checkout kiosks, which is good and bad. Retailers pushed to checkout desks, which definitely took jobs away. Call centers have added live chats, multimodal bookings, multimodal customer service, which I think has improved the lives of the people there, as they're going to have a mix of transactional and conversational interactions. A lot of IVR (Interactive Voice Response) bots, some implemented very badly, some very well. So, I think all of those potentially risk people to lose their jobs, but it could potentially improve the role of those who remain in the company.

3.1 In your opinion, does the implementation of digital transformation projects affect a company's competitive advantage?

Yes, lower costs and higher customer engagement. If we take Blockbuster as an example, we can see that Netflix and alike destroyed their business model by innovating in a digital manner. Yeah, so those who don't get it are destined to be dinosaurs.

4.1 In your opinion, how has the SARS-CoV-2 pandemic affected the implementation of digital transformation projects?

It sped things up enormously. Especially in some of the health care communities. In my areas of expertise, which are airlines and hospitality, the QR code suddenly came back again. It was pushed some years ago as a marketing frill and never got much traction and sudddely during COVID it was the go-to way of avoiding paper menus. And we've all gone more online and less face-to-face. The world is slowly opening up again and in my world of airlines and hospitality, kiosks are everywhere. They tend to be single purpose kiosks, such as check-in kiosks or an

ATM type thing. It usually does one or two things very well. It not a full PC, but kiosks are incredibly important for check-in processes in three star hotels. Less so in four and five star hotels, where guests expect a face-to-face service.

4.2 In your opinion, how may digital transformation projects affect a company's post-pandemic recovery?

Yeah, I think those who have invested in digital transformation projects are now seeing lower costs and higher customer engagement. Those who haven't, have wasted an opportunity. So yes, same answer as with the previous question.

5.1 We have covered several items in this interview, is there anything else you would like to add?

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Interview 5 background:

Setting: Microsoft Teams
Date of interview(s): 19.04.2022
Duration (in minutes): 32:16

Expert 5 background:

Current position: Junior Expert Digital Transformation
Years of relevant experience: 3 years
Industry: Information Technology

1.1 To begin, how do you interpret the term “digital transformation”?

Yeah, well, we interpret that in three different stages. Like digitalization, digitalization and then digital transformation. So that's like for us like, you know, you cannot reach digital transformation, which is also a cultural thing. Let's say it's not only about the technology and that you have the data digitally available and so on, but, but the digital transformation can only happen when when all all three things are there, the data must be there. The let's say hardware must be connected. Somehow and then the cultural topic is much bigger. A lot of people forget that. The people need to be okay with with this process happening and also need to support it as a whole. You will won't get any let's say, profit off that transformation. So digital transformation is like, of course about technology, but also a lot about culture.

1.2 In your opinion, how do digital transformations affect business processes?

I mean, digital transformation is a transformation process like it says and every process needs resources. That's a typical thing, if you want to change something, you first need to put a little bit more energy into it. To get into the stage of changing, like when you speed up your car, first you need to put more power into it to reach a certain speed and then when you have reached the speed and just to hold to speed, you need less power. It's the same for digital transformations, it's a change process. So of course to kick it off, you need some power and you also need power from the employees and from the different departments. If you do not have enough space, if colleagues do not have time to think about innovation, if they have no time to participate in things that are not in their job description, then you run into problems. Because you might have a digital transformation team, but you might not get the power in the certain departments or areas.

1.3 Have you observed any digital transformation trends?

I mean, there are many trends. At my company we talk a lot about "enabling technologies". So technologies that make things possible, that would not have been possible in the 2000s. So there are a lot of trends, but just because it's a trend, does not necessarily mean it's the right thing for your company. You have to be very calm and think about the stuff, like take blockchain as an example. Blockchain is of course, a trend technology. It does not automatically make sense for your model and give you a good business case. We have a lot of projects, where we thought about using blockchain technology and in the end we found that it made no sense, because when you are working on internal processes, you're only working with trusted partners. So why would we need blockchain technology? You would just spend a lot of money on a secure process, which you do not necessarily need. IoT (Internet of things) is also a technological trend. It's often the case that you need a certain amount of assets connected to obtain valuable data. If you only connect a few items, you may not receive sufficient data to implement AI add-ons or whatever. That's when you run into problems. But you do need to, let's say, go all-in sometimes to get the right results and to collect a good return on investment.

1.4 Given your experience, what has been the most important factor or condition for digital transformations to succeed?

On one side you need top down management support, that can provide resources to do POCs (proof of concept) and so on. But much more important, I think, is that you need a good culture. That you have a bottom-up culture, where people are allowed to say that something has failed, because that is part of digital transformations. You will fail and you will notice that something doesn't work for you as it did for others. A lot of projects that we see in the media are pilot projects, like BMW fully integrating artificial intelligence or whatever. It's usually the case for one department or one plant, scaling the transformation is a completely different topic. I'm not saying that every digital project fails, but failing is part of learning. Failing should be normal, and you need a company culture to accept this. You need to trust employees to try things out and if it fails, it fails. You will lose some money of course, but that is why we do proof of concepts first.

2.1 In your opinion, what type of organizational structure is required to implement digital transformations?

I mean, you can't change the corporate structure because of a digital transformation process. You might have the people that work on that process in a different area. If you're a smaller

business, you might just have one person in charge of digital transformation projects and they may purchase different software and hardware from companies that support smaller businesses with digital transformations. If you are a larger company, then you might have double structures, like a digitalization office. You may have a digital transformation expert at management level, but I don't think you should alter your organizational diagram based on digital transformations. Because in the end, most companies aren't living off digital transformation projects. The companies are living off their core products and services, let's say a car or machine. Something that they sell to customers. But of course, it's important to have the right people in the right positions at the right time. So far I have not seen a perfect organizational chart.

2.2 What kind of resistance (if any) have you encountered on the part of employees when introducing digital transformations?

We are mainly engineers at my company. Engineers themselves have an inner need to develop new stuff and to try out new things. I had a lot of luck so far, that all colleagues, even older ones, were very open to changes. One thing I did experience, however, was that people are mainly overloaded with work. I understand that myself, sometimes you are so overloaded that you cannot take on another project. Management has to also take responsibility of making sure their team does not overload their workload, as they are liable for overtime and so on. You need the right people at the right time and of course, if they don't have the necessary resources, they won't take on additional projects. At my company, we say that support comes top down, such as money, expertise, and so on. But the ideas must come bottom up. I am considered a digital transformation expert, but you should trust employees to know themselves what is best. For example a worker that screws the same type of screw 50 times per week will notice if 10 out of 50 screws have the wrong chalk on them. They will come to me and let me know that they require a digital chalk measuring instrument, or something like that. So that's why I think that top down management for digital transformations may not always work, you need to listen to your employees. If you let the ideas come from bottom-up, then you know which problem to solve digitally.

2.3 In your opinion, do employees question their job security during the implementation of digital transformations?

I mean, I can only speak for my industry. My industry is very traditional, but we have, especially in the last five years, we have more requests or orders than we can produce in a certain amount of time. Everyone working for my company should consider themselves in a safe position. The

question is how much can we deliver in a short period of time? Whoever can deliver the product in the least amount of time, gets the client. So in our case, it's a question of increasing our capacity, not to reduce our workforce. We would like to increase our speed of delivery and we're looking for the right colleagues, however, specilized experts are typically high in demand. They can choose between all the big players. We have a lot of people going into retirement in the next 10 to 20 years, so we will have even less people as there aren't that many experts on the market to work these positions. So most people aren't afraid to lose their jobs, because our industry needs specialists. What we are afraid of, however, is employees moving to another company, because of the improved benefits or whatever. So this is something we need to manage effectively, to retain talent.

3.1 In your opinion, does the implementation of digital transformation projects affect a company's competitive advantage?

I'm doing internal transformation, so I'm not responsible for new products or whatever. That of course is also an advantage if you can offer more modern and smarter products, since my company is focused on the B2B (business-to-business) market. But internal transformations, like what we support with, try to shorten production times. A customer may come to us as their products have reached the end of their lifetime, so they need to order new items. As mentioned before, whoever can deliver the fastest will receive the client and the order. It's not so much about what kind of products, they are all very similar. Of course if you constantly digitize your internal processes, if you are able to perform better quality checks with digital tools, you can plan the delivery better. Then of course you will have the competitive advantage in the end as you are able to deliver the products quicker than your competitors.

4.1 In your opinion, how has the SARS-CoV-2 pandemic affected the implementation of digital transformation projects?

I think it improved some things, like making a digital workplace totally normal. However, in my company it has been like that for a while, we could also do home office before. Maybe not 100% like it is today, but we don't really know how good that is. For myself, I also like to see the product and go into the office some days. Not everyday, but sometimes I find it necessary. Also the pandemic allowed businesses to avoid business travel, but I don't know if it will continue in the future. I'm not sure if a customer would accept complete digital handovers of products. The pandemic did definitely change the mindset of people, to be more accepting of digital processes. COVID also affected relationships with certain vendors, as some were no longer

able to provide the same guaranteed services as before. That of course was a huge problem and we need to find solutions to this. But in the end, it really depends on how badly COVID affected your business. If you are in trouble, then of course you will have to think fast and see how you can digitalize processes and so on. It was the same during the financial crisis. Whenever your business is in trouble, you will risk more and be open to change. If you're doing well and making enough money, why would you change? So COVID did force some companies to find new ways of finding higher production capabilities with less people and so on. Whenever we have a challenge, we as humans will solve it. It's in our nature.

4.2 In your opinion, how may digital transformation projects affect a company's post-pandemic recovery?

I mean, what does recovery mean? The main cost of the pandemic was that people had to work from home. Employees won't show up at work due to digital transformations. Perhaps you could say that digital transformations impacted us all positively during the pandemic if you look at the COVID apps and so on, so it may also support us in the event of another pandemic. I would expect that digital transformations are in use to prepare us as much as possible for the next crisis. Companies have also found ways during the pandemic to develop strategies which allow them to continue with less employees, which are not all physically at the office. So they pushed digital transformations and as a result, may have reduced operational costs and so on. Of course, digital transformations supported the fight against the pandemic, but I don't think it was the biggest thing.

5.1 We have covered several items in this interview, is there anything else you would like to add?

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Interview 6 background:

Setting: Microsoft Teams
Date of interview(s): 21.04.2022
Duration (in minutes): 16:06

Expert 6 background:

Current position: Digital Transformation Expert
Years of relevant experience: 9 years
Industry: Oil and gas

1.1 To begin, how do you interpret the term “digital transformation”?

I think we have to consider three things for digital transformations. The first thing, I think, is a pyramid of digital transformation. We would start with modernization as the first and digitization as the second layer, but digital transformation will be on top. Modernization is about implementing more powerful equipment to execute tasks more efficiently. For example, this could be a new server with a few more functionalities. Digitalization, however, is the migration from drawing to 3D modeling, or using PDF’s rather than paper, or a database instead of shelves with stacks of documents, or a digital membership card instead of a plastic one. This is digitalization. On top of that lies digital transformation, which to me has a direct effect on the business model. It could be a software solution or software as a service. In our past we bought a CD player from an electronic shop and now we have everything online and we typically pay for a service instead. We moved from CDs, to MP3 players, to streaming music. So it has to be an effect on the business model. Uber and AirBnB are also great examples that show how digital transformation processes can enable success.

1.2 In your opinion, how do digital transformations affect business processes?

I think in the meanwhile digitalization has become an integral part of business. So it’s no longer about infrastructure or providing the correct hardware. It was recognized, I think around 10 years ago, where we had to provide the appropriate hardware and Microsoft Office tools. But today, lots of business processes in my perspective and from my experience are not long unbroken without a digital setup in the digital environment. It is about optimizing ordering processes, payment processes, operational processes, and production. So from my perspective, the collaboration and alignment between IT and business is far more important than it was 10 years ago.

1.3 Have you observed any digital transformation trends?

I think it highly depends on the industry. If you would ask me about cross industry digital transformation trends, I would say big data, definitely. We are constantly creating more and more data. The amount of data we have available is exponentially increasing and the analysis of this data and to get valuable insights out of this data is definitely part and became more important for a lot of businesses. Artificial intelligence, but also RPA (robotic process optimization), where repetitive tasks can be automated are common trends. Also IoT (internet of things) topics are heavily increasing. Specific digital transformation trends relating to my industry, which is the oil and gas industry, but also in other industries are drones and robots, as well as, augmented and virtual reality use cases.

1.4 Given your experience, what has been the most important factor or condition for digital transformations to succeed?

First of all, digital transformation has to bring value. We should avoid digitalization for the sake of digitalization. So, it has to solve a problem, it has to open a new revenue stream. It has to make the company more effective and efficient. If you find use cases where digital transformations can help you gain value, I believe there are four ingredients necessary which are key to succeed. These are, technology, business knowhow, methodology, and culture. If you lack the appropriate technology, you're running up a slide, you're not doing things very effectively. If you have a use case and you're trying to drive a digital transformation without understanding your business, you will digitalize processes without providing value, which does not make any sense for your company. If you do not apply the right methodology and you do not have the correct culture, then things rarely get done.

2.1 In your opinion, what type of organizational structure is required to implement digital transformations?

I would say the classical ones with flat hierarchies that enable quick decision making. But what I experienced, is that it's not about the organizational structure of the company which leads to the success of a digital transformation. It's about the mindset. So, leadership instead of management, where accountability is important. So they'll embrace accountability to define a strategy and not always go for an immediate solution, but rather have a step-by-step implementation. Furthermore, proper change management is important to communicate and

offer trainings to enable collaborations. The organizational structure is not as important as the overall mindset.

2.2 What kind of resistance (if any) have you encountered on the part of employees when introducing digital transformations?

Digital transformations are always a change and you will always receive some resistance with change. It's not always resistance, it can also be skepticism. People would say "we always did it this way, why should we change?". If you consider the phases of change, it generally starts with struggle and denial, but there is always the chance to convince people by experimenting. Usually, in the end, they integrate into the new environment. I would highly recommend that companies view digital transformations as a mid-to-long term journey, and not as a short term exercise.

2.3 In your opinion, do employees question their job security during the implementation of digital transformations?

This can happen, yeah. This is what I meant with the fear that is experienced with any change, such as a digital transformation, but the aim is never to reduce jobs. However, some of today's jobs will no longer be in demand in the future. For example, jobs with a high amount of repetitive tasks or first level support may not exist in the future. This also gives the opportunity for new jobs to be created, which are related to data. So again, to give employees the confidence that digital transformations will not endanger their jobs, a change in internal communication is required. People must also be willing to learn something new.

3.1 In your opinion, does the implementation of digital transformation projects affect a company's competitive advantage?

Yes, of course. Honestly, I would even put it more dramatically in some areas. Successful digitalization will be crucial in order to survive, because digital transformations enable flexibility to react quickly. It can help you get customer insights and therefore, you can establish a greater customer experience, which will lead to better customer retention. It also enables companies to make data driven decisions to improve operational excellence. So, I definitely believe that digital transformations positively affect the competitive advantage of a company, but I don't think the difference in success will be determined if your company is digitalizing or not. Because if you're

not digitalizing your business model, you will not survive in the market. I think the difference between companies will not be digitalization, but innovation.

4.1 In your opinion, how has the SARS-CoV-2 pandemic affected the implementation of digital transformation projects?

Without any doubts it was a massive booster. Working and collaborating remotely became the new normal within a very short period of time. I think it was in March 2020 where we had to adapt overnight. Digital collaboration tools like Microsoft Teams, Zoom, or any other video conference applications became an integral part of everyday professional life. So, it was a massive boost, because the implication of the use of these tools also reduced the amount of business trips required. You can now immediately create a meeting on short notice with international teams. I think it will affect the way we work in the future.

4.2 In your opinion, how may digital transformation projects affect a company's post-pandemic recovery?

As already mentioned, digital transformations are enablers. They can enable companies to adapt or to enhance their business model to gain new customers. Consider restaurants as an example. By implementing an online ordering system during the pandemic supported their survival rates. They could react quickly and remain flexible without significant damage. The corona crisis was just one example of a crisis, companies constantly need to adapt and remain flexible. We are already in a different crisis, considering the Ukrainian war, which has a massive imact on prices of consumer goods. I think digital transformations enable companies to survive such crises and also remain competitive with new rising competitors in the market.

5.1 We have covered several items in this interview, is there anything else you would like to add?

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Interview 7 background:

Setting: Video call (telephone)
Date of interview(s): 13.05.2022
Duration: 22:06

Expert 7 background:

Current position: Digital Strategist
Years of relevant experience: 3 years
Industry: Information Technology

1.1 To begin, how do you interpret the term “digital transformation”?

For me, it's the process of transforming business processes into digital form. So turning on the paper processes that used to used to be the norm for businesses into a digital format, whether that's using computer, the web, cloud, etc.

1.2 In your opinion, how do digital transformations affect business processes?

I think in some cases, in majority of the cases, I think some of the basic things is that it accelerates the business processes. But in some other cases, it actually cuts down the amount of steps that are required in the business process flow itself. So in some cases, we don't need to have a back and forth between people inside the organization in order for them to communicate information, some of these information can be directly sent through the computer through the internet, to the other user, on the other side, if the organization is run on a larger geographical space, I think we can see this in in maybe, let's say the communication between clients that arrive at the airport that needs to be picked up and the estimated time of arrival for them to reach the hotel. So when when do the receptionist need to be ready. And if there is any conditions that these clients are, are are experiencing, on their way to the hotel, from the flights, is there any special care that they need to be aware of, and so on. So some of these processes change, some of the process has become bigger. So we establish new processes that that has never been established before. In so it allows for extra value to be created through the the general business process. It slimmed down the old ones that was very tedious. And it generally just accelerates the usual step to step processes in between.

1.3 Have you observed any digital transformation trends?

Yes, so the some of the major steps that I've observed is the movement over to a computer, a centralized database, where all the information can be centralized and checked at one single sense of truth. So that really helps with the spread of information between between employees inside an organization. Then comes the mobile technology and the geolocation technology where this information can help with a lot of investment in innovation in the process as well. And now, even with the marketing on social media platforms, it's also accelerating the process quite a bit.

1.4 Given your experience, what has been the most important factor or condition for digital transformations to succeed?

I think one of these factors is to understand the development process of these technologies. And, and also just the the willingness to adapt to change. Because change management can be a very, very big thing, as things has always worked the way it has and things are running smoothly. So why do we need to change that these are the typical mindsets that people would have, which hinders the process of digital transformation. And, and they change generally slow down the process, even people who have a willingness for digital transformation might still be quite stuck to the old pattern on old ways of doing things where there might be a couple of verification steps that are required, because things were done manually through paper. Fortunately, was worth computers that can do these verification steps for us.
Be they're not really required anymore. And so these verification steps can be removed and can be done automatically by the computers, which might be a big question mark for for some of the older generations that have experience in the field. Which now totally doesn't make sense for them, why we wouldn't have these verification steps, because that would create a sense of fear that they don't have these validation steps, even though the technology itself can handle this for them. And in some cases, because of the new technology that is available, there is a change in the business process that will be more suitable for the business, which doesn't feel right. And sometimes the idea itself cannot be fully explained by the people who have this vision for the digital technologies to to properly elaborate and convince the the older audience or the experienced audience in the field, to see how the change is actually better for the business. So yes, I think definitely change management has been a big factor to succeed. Nevertheless, I think the development of the technology is very important, especially the ability to test the

products, the products, before they are fully launched, or alongside parallel to the operation of the business to make sure everything's running smoothly.

2.1 In your opinion, what type of organizational structure is required to implement digital transformations?

I think any organization structure is suitable to implement a digital transformation. It's just now whether it would make how much value will provide organization with research like this, if we see a lot of chaos that is happening within the organization itself, where there is a mismatch between information or there is a long waiting time between each step of the process, then definitely digital transformation would be required. If we are talking about benefits, however, I see every organization benefits in from digital transformation, whether you're a small business to a large business, you will benefit from digital transformation.

2.2 What kind of resistance (if any) have you encountered on the part of employees when introducing digital transformations?

So some of the, the resistance that we've encountered is mostly the older generation who is extremely proficient with the old interface, whether it's the console console interface, typing in the numbers line of line, or the old windows nine five interface where they're very, very effective with those, because they have spent their hours struggling with that interface, understanding how it works, understanding all the potential shortcuts for it. And now for them to learn a completely new interface there and see if necessary, so one of one of our clients when we interviewed them, the users of our clients, and when we interviewed them and asked them, Okay, so how do you add a patient's into your system, and they said, Oh, you just type in 4321. Because that was the shortcut for the menus that they had to go through in order to get to the claims patients interface. So here, you can see that they were working with a console interface, which for them, 4321 is very quick to type into the console interface. But for them now to learn a completely new interface where they have to drag the mouse click on it, drag the mouse somewhere else click on it, it would take a longer time. So for them, they feel like this change is unnecessary because they can do everything already. So for them, it's as for what is the what is the purpose of this change?

2.3 In your opinion, do employees question their job security during the implementation of digital transformations?

Definitely, definitely a big thing. Most of the cases I think, they will question it in The younger generations we've noticed, has a greater propensity to to adopt the technology and learn the technology. Whereas the older generations seems to be more stuck to their ways. Because every new technology takes time to learn. So, if a team is very used to their way of operation, and there is a new technology that is introduced, the older generation would try to use the new technology to its least benefit to just to have a sense of accountability of report back to their their seniors, to show that they are doing something about the new platform. And majority of the sake they would take the operations offline, and then just update the system according to what they have done. So yes, this has been quite a struggle.

3.1 In your opinion, does the implementation of digital transformation projects affect a company's competitive advantage?

Yes, yes, digital transformation has always been the been a supporting factor of a business. However, because of how much businesses are going online, it has slowly crept into the primary functions of a business. This is not a published theory or anything, it is more of an observation. So the companies that are that are using technology has their core product and services. In order to either increase their profits or decrease the costs have seen a greater competitive advantage. Whether that's reducing the timeframe needed for the services to complete or for the products to go through from inbound logistics automates outbound logistics, and has transformed the way businesses operate and how much competitive advantage they have. For example, if we originally required an employee to run, run between two warehouses. With this digital transformation, this employee running between the two warehouses is no longer required. That means the time that this employee would have taken to run between the two warehouses is removed. And additionally, the cost of employing such employee to run between the warehouses is no longer necessary. So if there is any queries, about the information that's being sent between the two warehouses, they can just do it online, it's very quick. And that reduces the time and cost that is required for businesses to operate and thus, creating a better competitive advantage to bring a promise to the clients for a better service or quicker service. And the employees will have more mental space to deal with other things other than worrying about walking between two warehouses.

4.1 In your opinion, how has the SARS-CoV-2 pandemic affected the implementation of digital transformation projects?

I think it has highly accelerated, highly accelerated the adoption of these these transformations, especially with offline meetings onto online meetings now. If we're talking about the VA tours industry, they're also a breaking there, there has trying to think about a way to get the industry alive again. As well as the E commerce business so that because of the pandemic and because people couldn't go out and they still want to spend their money. ecommerce businesses has rows and rows all the way to the top. Especially with Amazon. Amazon sales and shares I think that's a that's a common given knowledge by now. And that has really transformed the way people perceive and understand business So when the new new intrapreneur starts the business, they will not start by renting a place opening a store. And they would rather start by opening an online store where the cost of the online of the rental and and the handmade displaying of the products and the lead board and electricity, and the travel to the store becomes redundant. So this removes all the barriers of entry into into the market. So, yes, and we've also seen a lot of stores that only provide offline services closed down. Because, of course, we had a lot of quarantine periods throughout COVID, which highly affected the the market. Other than that, I don't think the the industry has, has successfully innovated too much. And there's a lot of attempts. But I wouldn't say that there is a lot of news, breaking news, breaking projects that are present in today's world.

4.2 In your opinion, how may digital transformation projects affect a company's post-pandemic recovery?

Yeah, so I think the ideas that that I had in mind, Question Nine shows up in question 10, where a lot of the tourist industries have been preparing for the recovery of the world, out of the COVID pandemic period, such as the flight industry and the tourist industry, they have been preparing to kind of wait for the world to come back. One of the researchers that I'm working on is grabbing all of the social media data looking at a hashtag called Dream now travelator where companies market their their tourist destinations, during the COVID period, in order for for people to put it on their waiting list. And once COVID recovery is has lifted, and then their tourist industry would rise again. So one of the biggest countries that is promoting this is Norway, which is very interesting. But I'm going off track. So using using social media has also been a big part of the digital transformation for marketing, where in the past marketing was more flyer based news, newspaper based and radio, radio station based. And now it's moved on to social media, Twitch streaming, and so on and so forth. So the digital transformation for companies that that use the right platforms for the operations also affect affect how they would recover after COVID. So

yeah, during these periods, I think companies that have prepared for the recovery of their business will see a change. Some of the things that we've learned from during the COVID period might continue going forward, but some of the things that we leave the world sees as unfit would then let it go. So it's a great opportunity to push for some of the agendas on everyone's list like online meetings, digital nomads, where you can work anywhere in the world and you can still you can still earn a living at a desk in the country.

So things like this has been quite quite big. Yeah, so I think it's will be very interesting to see what the both has for the the hospitality industry the prices of hotels and flights SAR excessive right now. I'm guessing it's because they expecting a lot of people to travel. Now that COVID is over. But nevertheless, operations still seem the same as they were before. It will be interesting to see if they have implemented anything that is special or different, other than just your online meetings and stuff like that. So yeah, every every disaster that is caused in in the world accelerates a certain certain function in the world. They definitely think the COVID period accelerated the online meetings, which used to happen offline. Yeah, I don't want to go into the war between Ukraine and Russia. But that that apparently, week can chemical a pandemic? I don't think so we can call it a disaster. So this disaster is happening might accelerate the the idea of environmental friendly energy, renewable energy, because we're cutting off from Russia, where we used to get a lot of gas and wheat so it could just bring about the opportunity to focus on companies that are doing renewable energy in Europe. So opportunities like this, situations like this, cause an acceleration in opportunities that are more suitable for the population.

5.1 We have covered several items in this interview, is there anything else you would like to add?

That's all from me.