

The key changes to the hospitality business model under COVID-19

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Abstract

The rapid spread of new digital technologies has brought fundamental changes in the hospitality industry. The digital transformation of the hospitality industry was accelerated during COVID-19 pandemic. The impacts of the crisis have led to rethinking hospitality business models. In order to survive during the crisis, hospitality businesses has tried to find innovative solutions and transform their businesses. Therefore, this paper aims to investigate the key changes to hospitality industry business models induced by the COVID-19 crisis. A systematic literature review is provided to analyse three main business model components: value proposition, value chain, and revenue. The paper has the following findings. First, four major changes to the value proposition in the hospitality business model are identified: use of hotels as rooms/offices during lockdowns, offer of new innovative products and services, offer of digital services, and use of hotels for quarantining. Second, value chain changes include new safety measures, and changes to capacities and numbers of workers (amount of work). Third, the changes to the revenue model include fewer foreign tourist offers and more domestic offers, last-minute cancellations or postponements, and better quality and more individualized services. Policies like innovation and digital technologies, customized and flexible services, qualitative services and virtual experiences should be priorities for the future of hospitality business models. The paper has some limitations and future research should be focused on a specific hospitality business model, specific group of countries or country and showing what will happen in post-COVID-19 period.

Keywords

business models; hospitality; COVID-19; value creation; value chain

Introduction

The business model enables the creation, delivery, and capture of value (Magretta, 2002; Zott, Amit & Massa, 2011; Slávik & Bednár, 2014; Saebi, Lien & Foss, 2017). Firm business models offer two types of value: customer value and firm value.

The tourism literature refers to business models in terms of “how the business works” or “how the firms do business” and ignores their development and transformation (Alegre & Berbegal-Mirabent, 2016). Work on tourism business models seems to be split between a strand of work that considers the

activities involved from a systems perspective, and a strand which adopts a business model perspective. Although innovation is important for enabling firm growth in the hospitality sector (Thomas & Wood, 2014), research on this topic is scarce.

The COVID-19 pandemic was accompanied by major effects on the hospitality industry, which put many jobs at risk and resulted in a considerable drop in tourism incomes. The main impacts of pandemic on the tourism industry have been addressed by several studies (Wen, Kozak, Yang & Liu, 2020; Gössling, Scott, & Hall, 2020; Ben Youssef, Zeqiri & Belaid, 2020a, 2020b; Ying,

Wang, Liu, Wen & Goh, 2020; Fong, Law, & Ye, 2021; Jamal & Budke, 2020; Lau, Khosrawipour, Kocbach, Mikolajczyk, Ichii, Zacharski, Bania & Khosrawipour, 2020; Zenker & Kock, 2020). These works focus mainly on the current impacts of the pandemic on tourism, the post-COVID-19 tourism and the extent of the effects of the crisis compared to other epidemics.

The containment measures put in place have had and continue to have a severe impact on all sectors of the world economy (Ben Youssef, 2021). Aviation continues to be affected by travel bans, the sports sector has suffered from cancellation of sporting events, and the events and entertainment industries have been affected by the ban on mass gatherings. Some economic sectors were affected from the start of the crisis and have experienced dramatic losses which might be temporary but could be long run depending on the persistence of the impact of the virus. Tourism is near the top of the list of the worst affected sectors.

The COVID-19 pandemic has had major effects on hospitality industry business models. The airline industry, which was affected immediately by the outbreak of infections, has had to adjust its workforce and ask employees to take paid or unpaid leave. According to International Civil Aviation Organization (ICAO) estimates, passenger seat capacity dropped 50% in 2020.

Developing countries rely heavily on tourism and the huge disruption caused by the pandemic is likely to increase other problems related to capital flows, weak health systems, and limited fiscal space to allow support. Some of these developing country economies were already suffering from slow economic growth and this latest crisis is likely to have major consequences in the very near future. Both the advanced and the emerging and developing economies are experiencing the biggest recession since the Great Depression and in most developing countries the contribution of the hospitality sector to economic growth will be very weak or even negative.

During summer 2020, many countries, like Tunisia, Egypt, Italy, Morocco, Spain, Germany, France, etc., opened their borders to tourists¹. However, this led to a second wave of infection with travel, the main mechanism of the further

spread of COVID-19 worldwide. The tourism sector was also affected by the new restrictions on mobility and travel imposed to stem this second wave of infection and consumers felt even less confident about traveling. The second wave which was accompanied by new restrictions and lockdowns paralyzed the tourism sector, and although vaccination programs are now in place, it will take time for this sector to recover.

The impact of the crisis in some industries (like e-commerce, advertising, information and communication sector, and petroleum industry) has had only minor consequences; however, the hospitality industry has lost months and months of business (Baum & Hai, 2020) which has forced them to try to devise innovative solutions. The literature on the impact of COVID-19 on hospitality business models is quite limited (Kraus, Clauss, Breier, Gast, Zardini, & Tiberius, 2020; Breier, Kallmuenzer, Clauss, Gast, Kraus, & Tiberius, 2021) and most studies focus on model innovations in hospitality firms introduced during the crisis. Most analyses find that these result in new revenue streams and higher levels of liquidity.

This paper contributes to work on the transformation of hospitality industry business models in two ways. First, it discusses hospitality industry business models, their typologies, and their transformations based on Industry 4.0 technologies.² Second, it discusses the main impacts so far of the COVID-19 crisis on the hospitality industry and its business models. The paper identifies ten major hospitality industry business model changes induced directly by the crisis which affect the value proposition, the value chain, and revenue. These changes include use of hotel spaces as office spaces during lockdowns, offers of new innovative products and services, offers of digital services, use of hotels for quarantining, changes to safety measures, capacity, work, and workers, reduced offers to foreigners' tourists and increased offers to domestic customers, flexibility related to last-minute cancellations or postponements, and higher quality and more individualized services.

The paper is organized as follows. Section 1 proposes some business model definitions and reviews the literature on hospitality sector business

¹ Reopening tourism activities was done under security labels developed by UNWTO and other organizations like: guidelines, recommendations and "Safe Travel Stamp" certification.

² Industry 4.0 is defined "as a new industrial maturity stage of product firms, based on the connectivity provided by the industrial Internet of things, where the companies' products and processes are

interconnected and integrated to achieve higher value for both customers and the companies' internal processes." (Frank, Mendes, Ayala, & Ghezzi, 2019, p.343). It includes a set of technological developments such as Cyber Physical systems (CPS), the Internet of Things (IoT), Augmented Reality (AR), Virtual Reality (VR), Artificial Intelligence (AI), robotics, big data, blockchain, and 3D printing.

models. Section 2 provides explanations on business models transformation; section 3 discusses the tourism business models; and section 4 discusses ten major business model changes under COVID-19 pandemic.

1. Business model definitions

Despite the large literature on business models, it does not offer a single agreed-upon definition (Foss & Saebi, 2017). While the concept of business model was first proposed by Drucker (1994), debate is ongoing over the definition and ontology of this idea. Work focuses variously on business model components such as the value proposition, market segmentation, value chain structure, and value capture mechanisms, and their inter-relationships (Saebi et al., 2017).

Most current business model definitions are similar to or consistent with Teece's (2010, p. 191) description of a business model as "the design or architecture of the value creation, delivery and capture mechanisms employed". The term business model encompasses a range of different firm activities, and how and when they are performed in order to provide the best benefits and the highest firm revenue (Afuah, 2003). The business model is designed to allow the firm to earn revenue in the business environment by exploiting its structural and operational attributes.

Zott and Amit (2009) suggest the need to take account of two main elements in any discussion of business models. The first refers to the elements representing how the activity system is designed. The second refers to design themes to explain the sources of value creation in the activity system.

According to Slávik and Bednár (2014), the business consists of the resources and activities which result in the creation of value for the client and higher revenue for the firm.

2. Business model transformation

The rapid digitalization of firms has led to the need to rethink current business model structures. Business model innovation in the context of the fourth industrial revolution (Industry 4.0) is vital for technological innovation. However, existing research focuses more on the business model rather than innovation and transformation in a business model context.

Industry 4.0 technologies are considered general purpose technologies (Ben Youssef, 2020) which allow complementary developments (Bresnahan & Trajtenberg, 1995). While the three first industrial revolutions were characterized by

mechanization, electricity, and information technology, Industry 4.0 is powered by cyber physical systems (CPS) and interconnections between the virtual and physical worlds.

Industry 4.0 enables the development of a new kind of customer value (Ehret & Wirtz, 2017) based on the provision of new services and is transforming how these new services are offered and is providing new organizational opportunities, more cooperative environments, improved consumer relationships, and improved services. All of these improvements are requiring either changes to existing business models or the design of entirely new business models, or business model innovations.

According to Foss and Saebi (2017, p. 207), business model innovations are "designed, nontrivial changes to the key elements of a firm's business model and/or the architecture linking these elements". The authors propose a business model typology which distinguishes between the perspectives of scope and novelty. They also identify four types of business model innovation: evolutionary, adaptive, focused, and complex business model innovation. Evolutionary and adaptive business model innovations tend to be innovations that are new only to the firm (Saebi et al., 2017). Focused and complex business model innovations are more radical and are new to both the firm and the industry.

3. Tourism business models

The impact of new digital technologies has transformed business models in the tourism industry (Reinhold, Zach, & Laesser, 2020; Ammirato, Felicetti, Linzalone & Carlucci 2021; Härting et al., 2021). Digitalization of the tourism industry has created new opportunities for innovative tourism business models, like value proposition, building better networks, managing the customer relationship (Perelygina, Kucukusta & Law, 2022).

In the literature, there is not a broadly accepted typology for digital tourism business models. Kabir, Jahan, Adnan and Khan (2012) distinguished between five types of tourism business models which exploit digital technologies: business to consumer models, business to business models, consumer to consumer models, government to business models, and business to business to consumer models. Reinhold et al. (2020) provides a 4C typology, which classifies digital tourism business models based on content, commerce, context, or

connection.

The business to customer model is considered the most common tourism 4.0 business model, and involves direct communication between tourist service providers and would-be tourists. The business to business model involves tourism service providers selling their products or services to other tourism businesses to promote tourism through collaboration and the provision of tourism packages.

The customer-to-customer model facilitates communication among tourists and the establishment of tourist communities via virtual tourism platforms. Exchanges with members of the tourist community provide advice related to hotel reservations, purchase of airline tickets, tourism sites, etc. which can help tourists plan their trips.

The government to business model involves interaction and cooperation between government and tourism businesses, and the rules and permissions imposed on them in relation to their use of digital technologies to promote tourism.

Finally, the business to business to customer model involves companies providing products or services to other companies which, in turn, sell these products and services to consumers online. It involves transactions facilitated by an intermediary firm to allow another firm to sell its services or products to consumers.

The sharing economy has introduced some important tourism business model innovations. For instance, Airbnb is expected to have a major impact on hotel revenues (Consigli, Iaquina & Moriggia, 2012). However, there is a certain consensus that Airbnb "is bad for hotels but good for tourism" (Oskam & Boswijk, 2016).

The tourism business model needs to be customer oriented. According to Runfola, Rosati and Guercini (2013), in the context of online hotel distribution there are three important business model dimensions: target segment, value proposition, and revenue model. Coles, Warren, Borden and Dinan (2017) suggest that tourism business models should include cost control, and value capture, and value proposition, and should target customers, key resources, and processes in order to create value for small and medium sized tourism enterprises.

4. Major changes to tourism business models due to the COVID-19 crisis

In the recovery from a crisis, it is important to retain loyal and local consumers (Alonso-Almeida & Bremser, 2013). However, consumers want to

benefit from new, innovative, and unique experiences (Pikkemaat, Peters, & Chan, 2018; Zeqiri, Dahmani & Ben Youssef, 2021; Ben Youssef, Dahmani & Zeqiri, 2021) which means that hospitality companies need to engage in continuous innovation efforts (Thomas & Wood, 2014) to try to meet their customers' expectations (Kallmuenzer, 2018).

Hospitality businesses which have survived the COVID-19 crisis are being forced to innovate. The triangle business model identifies ten major changes (see figure 1). The main elements of the business model are value proposition, value creation, and value capture (Clauss, 2016; Clauss, Abebe, Tangpong & Hock, 2021). For each element or component there are discussed the main changes to the hospitality business model which have been triggered by the COVID-19 pandemics.

The value proposition refers to the set of firm solutions which are offered to its customers (Johnson, Christensen & Kagermann, 2008). During the COVID-19 pandemic the value proposition experienced four main changes. First, hotels became office spaces during lockdown. Second, several new and innovative products and services were offered by the hospitality sector. Third, digitalization of hospitality services was accelerated. Fourth, hotels were utilized as quarantine facilities to isolate people potentially infected with the COVID-19 virus.

Value creation refers to the whole of the firm's value chain, which is characterized by its capabilities (Achtenhagen, Melin, & Naldi, 2013). During the period of the pandemic, value creation changed in at least three ways. First, new protocols and certifications were introduced to ensure safe operations in the hospitality industry. Second, hospitality businesses reduced their capacity and increased the quality of their services. Third, employment in the hospitality industry changed drastically due to devastating effects of the COVID-19 crisis.

Value capture allows the firm's value proposition to be translated into revenue (Clauss, 2016). Hospitality business models experienced three main changes during COVID-19. First, greater promotion of domestic rather than international tourism. Second, implementation of flexible cancellation and changes to tourism arrangements. Third, offer better quality and more individualized services.

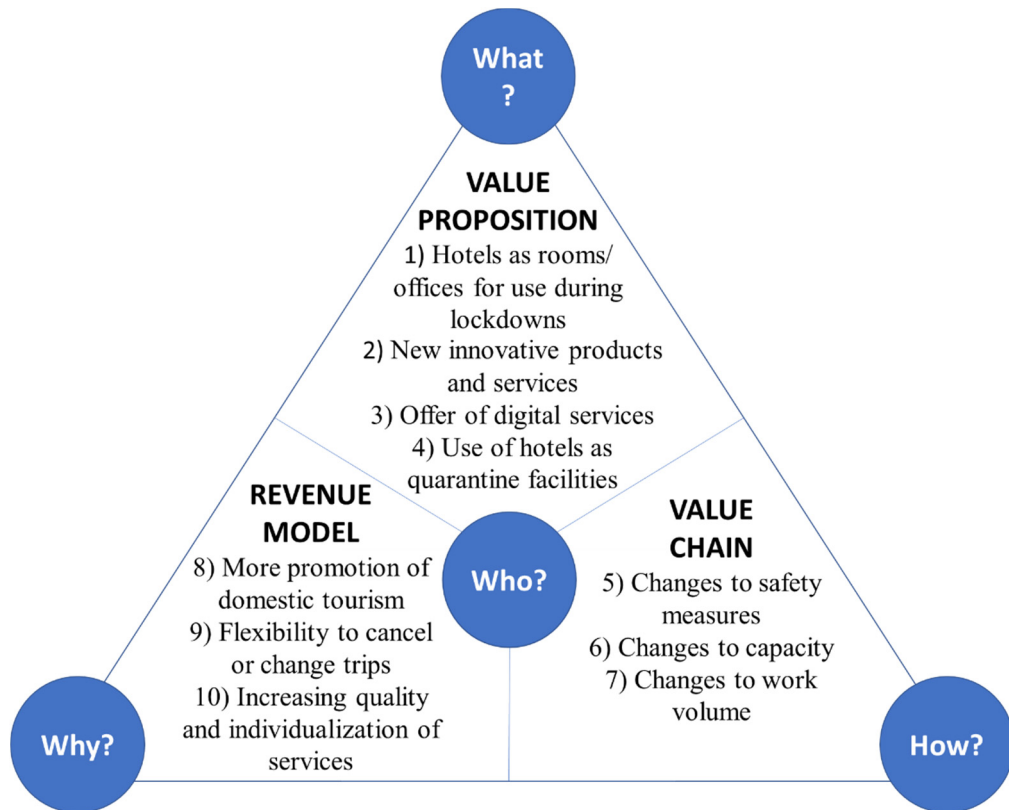


Figure 1 Major changes in the hospitality business model due to COVID-19 crisis
Source: the authors

4.1. Hotels as living/office spaces for use during lockdowns

During the COVID-19 crisis, many employees were asked to work from home. However, the effects of the pandemic have differed across occupations and labour market segments (ILO, 2020) and the possibility to work from home has become very important and has had repercussions for productivity, location, working hours and the traditional separation between the work and home environments (Caringal-Go, Teng-Calleja, Bertulfo & Manaois, 2021; Wong, Lau, & Chan, 2021). This new way of working resulted in increased productivity for some and for others in loss of focus and problems related to engaging in time-consuming online meetings (Birkinshaw, Cohen & Stach, 2020).

In order to survive, hotels began to offer innovative solutions including the offer of hotel rooms to provide those instructed to work from home with a quiet work space while offices were closed. Some of the hotels that have converted the rooms into work space offices are: the Crosby Street Hotel in New York, the Langham in Manhattan, the Figueroa in Los Angeles, the

Hoxton in London, the Galleria Vik Milano etc. (Trimble, 2020). They offered their facilities at reduced rates and gave access to other of the hotel's facilities within the confines of the restrictions imposed. This gave some freedom and distraction for individuals who were forced to work from home, and in some cases has been crucial to maintain productivity. At the same time, it helped the hotels involved to avoid bankruptcy.

4.2. New innovative products and services

To prevent the spread of COVID-19 and to maintain relationships with consumers, hospitality companies have had to devise new products and services. Following the imposition of restrictions on travel, in some cases virtual tourism has substituted for real tourism with many museums, galleries, and other tourist destinations and attractions are offering virtual tours. Also, to reduce the spread of COVID-19 and maintain distance among guests, hotel checking-in and checking-out procedures are based on apps and require no interaction with hotel staff. The closure of restaurants led hotels to convert unused hotel rooms into private dining rooms. For instance, on

Valentine's Day, several hotels (the Brussels hotel, the Qbic Hotel) offered packages which included a hotel bedroom and a separate room to dine in (Burleigh, 2021). This allowed some escape from the everyday routine and confinement in the home, and allowed hotels to maintain relations with consumers and to create value.

4.3. Offer of digital services

Entrepreneurship and digital transformations have helped the hospitality industry to face the challenges posed by the COVID-19 crisis. Popular destinations have offered virtual experiences to allow consumers to experience attractions around the world from their homes (Ben Youssef, Zeqiri & Dedaj, 2020; Ben Youssef & Zeqiri, 2022). For instance, several museums (the Metropolitan Museum of Art, the Solomon Guggenheim Museum, Amsterdam's Rijksmuseum, the National Gallery and the British Museum in London, the Musée D'Orsay, the Palace of Versailles in Paris, and the Uffizi Gallery in Florence) have shifted to virtual museums (Bianchini, 2021).

Touchless tech has become particularly valuable. Use of digital technologies has enabled hotels to receive and respond to questions and requests from guests without the guest needing to use the phone or visit the reception desk. Also, platforms which use mapping technology combined with booking and payment systems have been introduced to enable contactless reservations.

Hotels have also implemented technology to protect staff by eliminating touch points in their in-house operations. Digital tools are being used to manage security and cleaning procedures and provide information on which cleaning solutions to use in specific areas. They allow the hotels to track areas subject to the most guest traffic which helps both guests and staff to prevent the spread of COVID-19.

4.4 Use of hotels as quarantine facilities

Several hotels (the Essex in Chicago, the Park Hyatt Paris, the New York Marriott, the Ayre Gran Hotel in Madrid etc.) have become official quarantine facilities. Also, in countries, Italy, Spain, US, China, etc. where hospitals were overwhelmed, local governments cooperated with hotels to transform their spaces into care facilities or quarantine centres (Johanson, 2020).

Many hotels (Hilton Hotel, American Express Hotel, etc.) offer healthcare workers working long

shifts free or low-cost accommodation to avoid putting their families at risk.

Arrivals from abroad are required to quarantine in a designated hotel for 14 days to prevent the spread of COVID-19, and some hotels (Park Lane Hong Kong's, Fairmont Singapore etc.) offer 'quarantine packages' to allow people to self-isolate away from their homes.

4.5. Changes to safety measures

New protocols and certification have been developed to try to ensure safety related to hospitality industry activities. Hotels have focused on implementing measures to keep guests safe and healthy. Touch points are cleaned and disinfected more frequently, and public spaces are ventilated regularly. Many hotels require guests to complete health check forms and have their temperatures checked on entry, while guest numbers in enclosed spaces are limited to ensure social distancing. Sanitizers for use by guests are available in all public areas.

In the case of Airbnb-type accommodation, hosts can register for the "Cleaning Protocol" certification which includes training in how to prepare accommodation for guests. The training includes provision of information on preventing COVID-19 infections such as use of face masks and gloves by hosts and cleaners, use of appropriate disinfectants and cleaning materials, etc.

Airline companies are subject to extremely strict cleaning measures. Planes are ventilated and sanitized using special sanitizing products daily. IATA certification ensures that the air circulating within planes is clean and safe. The EASA (European Aviation Safety Agency) found that the air quality in aircraft cabins is superior to that in other environments such as schools, homes, and offices.

4.6. Changes to capacity

The COVID-19 crisis has enforced changes to hotel capacities. During summer 2020, many countries (Tunisia, Egypt, Italy, Morocco, Spain, Germany, France, etc.) gradually started to reopen their tourism activities. Social distancing guidelines forced hotels to leave a certain number of their rooms empty and these limitations on accommodation capacity-imposed limits on other offers such as restaurants. Also, after guest checkout, housekeeping cannot access the room for a certain period - between 48 and 72 hours.

Capacity changes have also affected the aviation sector. Airline companies were forced to reduce capacity in order to maintain social distancing, enhanced their cleaning procedures, and adapted their food and beverage services. As COVID-19 continues to affect this sector, airline companies have been forced to reduce the number of their flights and to furlough or lay off workers or offer them unpaid leave or reduced working hours. For instance, the airline company Air France plans to cut 6 500 jobs by 2022 due to the impacts of COVID-19 (Nikolaeva, 2020).

4.7. Changes to work volume

The devastating impact of COVID-19 on the tourism sector has forced many companies to reduce the number of their workers. Prior to the pandemic crisis, tourism accounted for 10% of world GDP and jobs. Most of this employment was in either direct tourism sector jobs or tourism related jobs, i.e. restaurant workers, shop owners, suppliers. According to UNWTO (2020), some 100 million to 120 million tourism jobs are at risk.

Hotels, airline companies and other related tourism businesses reduced their activities temporarily in order to cut costs, and employees were made redundant, asked to work from home, or asked to work reduced hours. Grounded airlines have had to adjust their staffing levels and ask employees to take paid or unpaid leave. In other cases, companies are not hiring, which could cause problems when the crisis ends. Employment in the tourism sector will continue to be affected in the post-COVID world since many firms will be forced into bankruptcy, and recovery will take time.

4.8. More promotion of domestic tourism

Domestic tourism is recovering faster than international tourism. People are looking for travel options close to home which carry a smaller risk of catching or spreading COVID-19, and tourism companies are customizing their services to satisfy this demand by offering more domestic than international travel packages.

According to UNWTO (2020), financial incentives and better marketing and promotion would strengthen the domestic tourism sector. These incentives might include vouchers, fiscal inducement, and weekend offers. In addition, communication campaigns and digital promotions via social media channels are being used to promote and market domestic destinations.

4.9. Flexibility to cancel or change trips

Many hotels (the Hilton Hotel, the Marriott Hotel, etc.) and airlines (Air France, British Airways, Eurowings, Lufthansa, etc.) have updated their change and cancellation policies to make them more flexible to respond to the COVID-19 crisis. The outbreak of COVID-19 resulted in massive flight cancellations worldwide. In order to support passengers, airlines are offering refunds, vouchers, or ticket exchanges. Most travel – including originally non-refundable bookings - that was suspended in the first months of the COVID-19 crisis was cancelled or refunded. This policy has remained in place; in the case of the need to cancel a trip, a refund is provided and many airlines, hotels, and travel agencies are not imposing change or cancellation fees.

4.10. Increasing quality and individualization of services

The constraints necessitated by the COVID-19 pandemic in terms of reduced capacity are improving the customer experience, and allowing tourism businesses to respond to certain customer demands. The focus on quality should reduce mass tourism which is damaging to nature and natural resources, and curtails the services offered. Virtual travel will help to reduce mass tourism and travel although its value depends on the consumer's perception of the technologies, and the level of satisfaction derived from virtual as opposed to real travel and physical presence at a destination (Zeqiri, Dahmani, & Ben Youssef, 2021). The relationships between customers and companies are changing in favour of the consumer, and this new power and control is leading to demands for personalized services enabled by hospitality industry 4.0.

Conclusions and Policy implication

This paper has identified and described ten major hospitality industry business model changes which occurred during the COVID-19 crisis. It conducted a qualitative analysis to examine the business model components of value proposition, value chain, and revenue model.

This paper identified four value proposition changes including use of hotel rooms as living/office spaces during lockdowns, offer of innovative products and services, offer of digital services, and use of hotels for quarantine purposes. The business model has also experienced changes related to safety measures, capacity, and work

volumes. The revenue model changes include fewer offers to foreign tourists and more to domestic tourists, flexible booking and cancelling, and higher quality more personalized services.

Countries whose GDP is derived mostly from tourism (Italy, Spain, Tunisia, Egypt, Morocco) have been hit hard. As a result of the second wave of infections countries are offering tourism only for domestic tourists. Recovery of the tourism industry will depend on the strategies put in place to protect consumers, tourism employees, and tourism companies.

Changes to consumer behaviours and preferences under the lockdowns may lead to greater use of technologies, virtual tourism, and sustainable travel. There should be no return to business-as-usual and there should be more investment in technology to transform tourism into sustainable tourism based on the sustainable development goals.

Policy implications

COVID-19 pandemic has drastically changed the hospitality business models. Given these changes, there is a need for policies in order to foster the development and adoption of the new practices in the hospitality business models.

First, innovation and digital technologies should be key priorities for the future of the hospitality business models. There is a need to adopt a set of technologies and deep organizational change, as COVID-19 has shown that innovation and digitalization were at the heart of the hospitality industry during the crisis.

Second, there is a need to offer customized and flexible services. Customized and flexible services may increase the satisfaction of the consumers and make the hospitality businesses adopt the new practices easier.

Third, it should be focused on offering more qualitative services. More qualitative services would lead to the improvement of the consumer experience.

Fourth, increase the investments on virtual experiences. The promotion of virtual tourism would allow even people with budget constraints and disabilities to have a virtual tour and to enjoy this experience.

Limitations and future research

The paper has some limitations. First, the paper shows the key changes to the hospitality business model during COVID-19, without being specified in only one change and describing it in detail.

Future research should present a specific change in the hospitality business models and treat it in more detail. Second, the paper is not focused only on a country or group of countries, but it is in general. In the future research, it would be important to present a specific country and how hospitality business models have changed during the crisis. Third, the paper is focused only on showing what happened during the crisis, but now what will happen in the future. However, it would be interesting to show the changes of the hospitality business models in the post-COVID-19 period.

References

- Achtenhagen, L., Melin, L., & Naldi, L. (2013). Dynamics of business models – strategizing, critical capabilities and activities for sustained value creation. *Long Range Planning*, 46(6), 427–442
<https://doi.org/10.1016/j.lrp.2013.04.002>
- Afuah, A. (2003). *Business Models: A Strategic Management Approach* (1st ed.). McGraw-Hill/Irwin.
- Alegre, I., & Berbegal-Mirabent, J. (2016). Social innovation success factors: hospitality and tourism social enterprises. *International Journal of Contemporary Hospitality Management*, 28(6), 1155–1176
<https://doi.org/10.1108/ijchm-05-2014-0231>
- Alonso-Almeida, M. D. M., & Bremser, K. (2013). Strategic responses of the Spanish hospitality sector to the financial crisis. *International Journal of Hospitality Management*, 32, 141–148
<https://doi.org/10.1016/j.ijhm.2012.05.004>
- Ammirato, S., Felicetti, A. M., Linzalone, R., & Carlucci, D. (2021). Digital business models in cultural tourism. *International Journal of Entrepreneurial Behaviour & Research*, ahead-of-print(ahead-of-print)
<https://doi.org/10.1108/ijeb-01-2021-0070>
- Baum, T., & Hai, N. T. T. (2020). Hospitality, tourism, human rights and the impact of COVID-19. *International Journal of Contemporary Hospitality Management*, 32(7), 2397–2407
<https://doi.org/10.1108/ijchm-03-2020-0242>
- Ben Youssef, A., Zeqiri, A. & Belaid, F. (2020a, October). *The impact of Covid-19 on the tourism sector in MENA*. The ERF Forum Policy Portal. Retrieved August 12, 2021, from <https://theforum.erf.org.eg/2020/10/19/impact-covid-19-tourism-sector-mena/>.
- Ben Youssef, A., Zeqiri, A. & Belaid, F. (2020b, October). *Tourism in MENA after Covid-19: from shock to structural transformation*. The ERF Forum Policy Portal. Retrieved August 12, 2021, from <https://theforum.erf.org.eg/2020/10/26/tourism-mena-covid-19-shock-structural-transformation/>.
- Ben Youssef, A., Zeqiri, A. & Dedaj, B. (2020). Short and long run effects of COVID-19 on the hospitality industry and the potential effects on jet fuel markets. *IAEE Energy Forum*, 121-124.
- Ben Youssef, A. (2020). How can industry 4.0 contribute to combatting climate change? *Revue d'économie Industrielle*, 169, 161–193
<https://doi.org/10.4000/rei.8911>

- Ben Youssef, A., & Zeqiri, A. (2022). Hospitality industry 4.0. and climate change. *Circular Economy and Sustainability*. <https://doi.org/10.1007/s43615-021-00141-x>
- Ben Youssef, A. (2021). The triple climatic dividend of COVID-19. In: Belaid F, Creti A (eds) *Energy Transition, Climate Change, and COVID-19*. Springer, Cham https://doi.org/10.1007/978-3-030-79713-3_6
- Ben Youssef, A., Dahmani, M., & Zeqiri, A. (2021). Do e-skills enhance use of e-services in the hospitality industry? A conditional mixed-process approach. *International Journal of Data and Network Science*, 5(4), 519–530. <https://doi.org/10.5267/ijidns.2021.8.015>
- Bianchini, R. (2021, September 15). *Museums worldwide react to COVID lockdown by offering virtual tours*. Inexhibit. Retrieved February 2, 2022, from <https://www.inexhibit.com/marker/museums-worldwide-react-to-covid-lockdown-by-offering-virtual-visits/>
- Birkinshaw, J., Cohen, J., & Stach, P. (2020, August 31). *Research: Knowledge workers are more productive from home*. Harvard Business Review. Retrieved March 18, 2022, from <https://hbr.org/2020/08/research-knowledge-workers-are-more-productive-from-home>
- Breier, M., Kallmuenzer, A., Clauss, T., Gast, J., Kraus, S., & Tiberius, V. (2021). The role of business model innovation in the hospitality industry during the COVID-19 crisis. *International Journal of Hospitality Management*, 92, 102723. <https://doi.org/10.1016/j.ijhm.2020.102723>
- Bresnahan, T. F., & Trajtenberg, M. (1995). General purpose technologies 'Engines of growth'? *Journal of Econometrics*, 65(1), 83–108. [https://doi.org/10.1016/0304-4076\(94\)01598-t](https://doi.org/10.1016/0304-4076(94)01598-t)
- Burleigh, M. (2021, February 9). *Eat Your Heart Out: Covid-safe Valentine's Day Dining*. Barron's. Retrieved January 28, 2022, from <https://www.barrons.com/news/eat-your-heart-out-covid-safe-valentine-s-day-dining-01612923605>
- Caringal-Go, J. F., Teng-Calleja, M., Bertulfo, D. J., & Manaos, J. O. (2022). Work-life balance crafting during COVID-19: exploring strategies of telecommuting employees in the Philippines. *Community, Work & Family*, 25(1), 112–131 <https://doi.org/10.1080/13668803.2021.1956880>
- Clauss, T. (2016). Measuring business model innovation: conceptualization, scale development, and proof of performance. *R&D Management*, 47(3), 385–403. <https://doi.org/10.1111/rdm.12186>
- Clauss, T., Abebe, M., Tangpong, C., & Hock, M. (2021). Strategic agility, business model innovation, and firm performance: an empirical investigation. *IEEE Transactions on Engineering Management*, 68(3), 767–784. <https://doi.org/10.1109/tem.2019.2910381>
- Coles, T., Warren, N., Borden, D. S., & Dinan, C. (2017). Business models among SMTEs: identifying attitudes to environmental costs and their implications for sustainable tourism. *Journal of Sustainable Tourism*, 25(4), 471–488. <https://doi.org/10.1080/09669582.2016.1221414>
- Consigli, G., Iaquinta, G., & Moriggia, V. (2012). Path-dependent scenario trees for multistage stochastic programmes in finance. *Quantitative Finance*, 12(8), 1265–1281. <https://doi.org/10.1080/14697688.2010.518154>
- Ehret, M., & Wirtz, J. (2017). Unlocking value from machines: business models and the industrial internet of things. *Journal of Marketing Management*, 33(1–2), 111–130. <https://doi.org/10.1080/0267257x.2016.1248041>
- Frank, A. G., Mendes, G. H., Ayala, N. F., & Ghezzi, A. (2019). Servitization and Industry 4.0 convergence in the digital transformation of product firms: A business model innovation perspective. *Technological Forecasting and Social Change*, 141, 341–351. <https://doi.org/10.1016/j.techfore.2019.01.014>
- Fong, L. H. N., Law, R., & Ye, B. H. (2021). Outlook of tourism recovery amid an epidemic: Importance of outbreak control by the government. *Annals of Tourism Research*, 86, 102951. <https://doi.org/10.1016/j.annals.2020.102951>
- Foss, N. J., & Saebi, T. (2017). Fifteen Years of Research on Business Model Innovation. *Journal of Management*, 43(1), 200–227. <https://doi.org/10.1177/0149206316675927>
- Gössling, S., Scott, D., & Hall, C. M. (2020). Pandemics, tourism and global change: a rapid assessment of COVID-19. *Journal of Sustainable Tourism*, 29(1), 1–20. <https://doi.org/10.1080/09669582.2020.1758708>
- Härtling, R.-C., Bäuerle, M., Bilge, K., Fleischer, L., Landgraf, N., & Wicher, M. (2021). Potentials of digital business models in tourism—A quantitative study. In *Agents and Multi-Agent Systems: Technologies and Applications 2021* (pp. 311–321). Springer Singapore. https://doi.org/10.1007/978-98-1-16-2994-5_26
- International Labour Organization (ILO). (2020). *ILO Monitor: Covid-19 and the world of work. Fourth edition*. International Labour Organization. Retrieved March 20, 2022, from https://www.ilo.org/wcmsp5/groups/public/@dgreports/@dcomm/documents/briefingnote/wcms_745963.pdf
- Jamal, T., & Budke, C. (2020). Tourism in a world with pandemics: local-global responsibility and action. *Journal of Tourism Futures*, 6(2), 181–188. <https://doi.org/10.1108/jtf-02-2020-0014>
- Johanson, M. C. (2020). *Today's hotel is tomorrow's coronavirus hospital*. CNN. Retrieved February 2, 2022, from <https://edition.cnn.com/travel/article/hotels-turned-hospitals-coronavirus/index.html>
- Johnson, M. W., Christensen, C. M., & Kagermann, H. (2008). Reinventing your business model. *Harvard Business Review*, 86(12), 50–59.
- Kabir, M. A., Jahan, K., Adnan, M. N., & Khan, N. (2012). Business model of e-tourism for developing countries. *International Journal of Computer and Information Technology*, 3(1), 30–34.
- Kallmuenzer, A. (2018). Exploring drivers of innovation in hospitality family firms. *International Journal of Contemporary Hospitality Management*, 30(3), 1978–1995. <https://doi.org/10.1108/ijchm-04-2017-0242>
- Kraus, S., Clauss, T., Breier, M., Gast, J., Zardini, A., & Tiberius, V. (2020). The economics of COVID-19: initial empirical evidence on how family firms in five European countries cope with the corona crisis. *International Journal of Entrepreneurial Behavior & Research*, 26(5), 1067–1092. <https://doi.org/10.1108/ijeb-04-2020-0214>

- Lau, H., Khosrawipour, V., Kocbach, P., Mikolajczyk, A., Ichii, H., Zacharski, M., Bania, J., & Khosrawipour, T. (2020). The association between international and domestic air traffic and the coronavirus (COVID-19) outbreak. *Journal of Microbiology, Immunology and Infection*, 53(3), 467–472. <https://doi.org/10.1016/j.jmii.2020.03.026>
- Magretta, J. (2002). why business models matter. *Harvard Business Review*, 80(5), 86–92.
- Nikolaeva, M. C. P. (2020, June 30). *Air France plans to cut 6,500 jobs by 2022: sources*. *Ruteurs*. Retrieved February 5, 2022, from <https://www.reuters.com/article/us-air-france-klm-layoffs-idUSKBN24124K>
- Oskam, J., & Boswijk, A. (2016). Airbnb: the future of networked hospitality businesses. *Journal of Tourism Futures*, 2(1), 22–42. <https://doi.org/10.1108/jtf-11-2015-0048>
- Drucker, P. (1994). Theory of the business. *Harvard Business Review*, 95–106.
- Perelygina, M., Kucukusta, D., & Law, R. (2022). Digital business model configurations in the travel industry. *Tourism Management*, 88(104408), 104408. <https://doi.org/10.1016/j.tourman.2021.104408>
- Pikkemaat, B., Peters, M., & Chan, C. S. (2018). Needs, drivers and barriers of innovation: The case of an alpine community-model destination. *Tourism Management Perspectives*, 25, 53–63. <https://doi.org/10.1016/j.tmp.2017.11.004>
- Reinhold, S., Zach, F. J., & Laesser, C. (2020). E-Business models in tourism. In *Handbook of e-Tourism* (pp. 1–30). Springer International Publishing. https://doi.org/10.1007/978-3-030-05324-6_71-1
- Runfola, A., Rosati, M., & Guercini, S. (2013). New business models in online hotel distribution: emerging private sales versus leading IDS. *Service Business*, 7(2), 183–205. <https://doi.org/10.1007/s11628-012-0150-1>
- Saebi, T., Lien, L., & Foss, N. J. (2017). What drives business model adaptation? The impact of opportunities, threats and strategic orientation. *Long Range Planning*, 50(5), 567–581. <https://doi.org/10.1016/j.lrp.2016.06.006>
- Slávik, T., & Bednár, R. (2014). Analysis of business models. *Journal of Competitiveness*, 6(4), 19–40. <https://doi.org/10.7441/joc.2014.04.02>
- Teece, D. J. (2010). business models, business strategy and innovation. *Long Range Planning*, 43(2–3), 172–194. <https://doi.org/10.1016/j.lrp.2009.07.003>
- Thomas, R., & Wood, E. (2014). Innovation in tourism: Reconceptualising and measuring the absorptive capacity of the hotel sector. *Tourism Management*, 45, 39–48. <https://doi.org/10.1016/j.tourman.2014.03.012>
- Trimble, M. (2020, December 23). The hotels reimagining their rooms as stylish work spaces. *The New York Times*. Retrieved January 28, 2022, from <https://www.nytimes.com/2020/12/23/t-magazine/hotels-work-spaces-office.html>
- Wen, J., Kozak, M., Yang, S., & Liu, F. (2020). COVID-19: potential effects on Chinese citizens' lifestyle and travel. *Tourism Review*, 76(1), 74–87. <https://doi.org/10.1108/tr-03-2020-0110>
- UNWTO (2020). UNWTO highlights the potential of domestic to help drive economic recovery in destinations worldwide Retrieved: October 10, 2021, from <https://www.unwto.org/news/unwto-highlights-potential-of-domestic-tourism-to-help-drive-economic-recovery-in-destinations-worldwide>
- Wong, M. M. L., Lau, K. H., & Chan, C. W. F. (2021). The impacts and success factors of a work-from-home service-learning internship during COVID-19. *Journal of Work-Applied Management*, 13(2), 284–301. <https://doi.org/10.1108/jwam-01-2021-0003>
- Ying, T., Wang, K., Liu, X., Wen, J., & Goh, E. (2020). Rethinking game consumption in tourism: a case of the 2019 novel coronavirus pneumonia outbreak in China. *Tourism Recreation Research*, 46(2), 304–309. <https://doi.org/10.1080/02508281.2020.1743048>
- Zenker, S., & Kock, F. (2020). The coronavirus pandemic – A critical discussion of a tourism research agenda. *Tourism Management*, 81, 104164. <https://doi.org/10.1016/j.tourman.2020.104164>
- Zeqiri, A., Dahmani, M., & Ben Youssef, A. (2020). Digitalization of the tourism industry: What are the impacts of the new wave of technologies?. *Balkan Economic Review*, 2, 56–66.
- Zeqiri, A., Dahmani, M., & Ben Youssef, A. (2021). Determinants of the use of e-services in the hospitality industry in Kosovo. *International Journal of Data and Network Science*, 369–382. <https://doi.org/10.5267/j.ijdns.2021.5.006>
- Zott, C., & Amit, R. H. (2009). Designing your future business model: an activity system perspective. *SSRN Electronic Journal*. Published. <https://doi.org/10.2139/ssrn.1356511>
- Zott, C., Amit, R. H., & Massa, L. (2011). The business model: recent developments and future research. *SSRN Electronic Journal*. Published. <https://doi.org/10.2139/ssrn.1674384>

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