

THE NEW TECHNOLOGIES AND SUSTAINABLE PRACTICES IN HOSPITALITY

D. FORIS¹ N. CRIHĂLMEAN² T. M. PĂNOIU³

Abstract: *The purpose of this paper is to provide a perspective on the possibility of implementing new technologies and sustainable practices in hotels, conducting a case study on the four-star Alpin Hotel, located in the resort Poiana Brasov in Romania. The study includes a specific way of analysis; in this sense a set of assessment criteria was developed based on the following topics: environmentally friendly practices, staff attitude, technology, smart room, product design, robots and AI. The results are useful for hotel owners and managers.*

Key words: *New technologies, sustainable practices, hotel.*

1. Introduction

Research on technologies and tourism have shown that „information is the lifeblood of tourism” (Sigala, 2018). Information and Communication Technology (ICTs) represents the supporting pillar of the concept of everything that is smart, including smart tourism. According to Lopez de Avila (2015) implementing the smart principles in a company or tourist destination guarantees sustainable development by supporting mobility, increasing the availability of resources along with easing the resource allocation process and enhancing the quality of life for both locals and tourists. Höjer and Wangel (2015) describe the smart concept as being the technologies based on sensors, big and open data, information exchange and new levels of connectivity used to contribute to technological, social and economic development.

As the hotel industry meets a high rate of growth, it must rethink and reshape the services and products in order to satisfy and fulfil the expectations of the one third of all hotel guests represented by the millennial travellers (Medium, 2017). Millennials, generation Y and the digital natives are the names used when referring to those born between 1982 and 1994 by some, and 1980 and 2000 by others, being known as people who have integrated technology in their lives so deep that for them everything is mediated through the screen (Iberdrola, 2020). Also, this generation is defined as one having a strong desire to experience the local community in a more authentic way,

¹ *Transilvania* University of Braşov, Faculty of Food and Tourism, diana.foris@unitbv.ro

² *Transilvania* University of Braşov, Faculty of Food and Tourism, nataliarus97@gmail.com

³ *Transilvania* University of Braşov, Faculty of Food and Tourism, panoiu.teodora@yahoo.com

having expectations from the hotel industry to provide more and more personalized services (Medium, 2017).

As travellers are becoming more and more aware of the environmental issues, the hotel industry has started to implement green practices in order to fulfil guests' expectation and to show their commitment to the environment, which results in a competitive advantage (Manaktola et al., 2007; Gössling, 2018; Noor et al. 2018).

The study seeks to provide comprehensive information and identify important elements for the possibility of implementing new technologies and sustainable practices in the hotel industry, in order to meet the millennials' expectations.

2. Literature Review

2.1. New Technologies in hospitality

Technological progress determine the need to convert all tourist resources into intelligent resources, with the help of sensors, big data, new ways of connectivity and data exchange (Sigala 2018; Gretzel et al., 2015). A good example describing this progress is exemplified by the authors sharing smart bikes that involve the transmission of internal data on the condition the bicycle uses sensors and external data on the environment Sigala (2018).

As reported by the UNWTO, tourism is „a social, cultural and economic phenomenon which entails the movement of people to countries or places outside their usual environment for personal or business/professional purposes” (UNWTO, 2015). Smart tourism does not have a clear definition as the authors said: "suddenly everything is smart" (Gretzel et al., 2015). Smart technologies have been adopted for cities, we can trace the origin of this concept in the late 1990s. Smart cities use innovative technologies to optimize resources, sustainability and quality of life and for efficient and equitable governance. ICT development is commonly understood as a technological development (Gretzel et al., 2015; Höjer et al., 2015).

Lopez de Avila (2015) defines the smart tourism destination as: „an innovative tourist destination, built on an infrastructure of state-of-the-art technology guaranteeing the sustainable development of tourist areas, accessible to everyone, which facilitates the visitor's interaction with and integration into his or her surroundings, increases the quality of the experience at the destination, and improves residents' quality of life”. At the same time, smart technology can be used and involved for sustainable development in other sectors, other than cities (Höjer et al., 2015; Sigala, 2018).

A hotel room with a microprocessor operated station that monitors parameters important for normal functioning, refers basically to a *smart* or intelligent room. It includes: supervision of temperature, movement of the guests in/out of the room, some sensors and alarms etc.

A new concept of smart room can bring a number of benefits including: reducing energy and water consumption, comfort, improving staff efficiency and to develop environmental awareness on both sides: guests and the hotel's operational staff. Petrevska et al. (2016) have devised several models through which a smart room can be

obtained simultaneously with the satisfaction of the guests' requirements. At the same time, the authors state that with rooms, management can achieve savings while becoming environmentally friendly, all to provide a personalized experience.

The lobbies will change their appearance with more multifunctional spaces. Hoteliers will integrate more materials and natural elements in their design, they also need to focus on inspiration, personalization and local experiences (Petrevska et al., 2016).

Smart rooms can provide personalized experiences. Kim et al., (2012) define a memorable tourism experience (MTE) as a tourism experience that is positively remembered and recalled after the event has occurred. The authors mentioned that the attitude of staff, room, location of the accommodation, breakfast describe a memorable experience. The guests appreciated the moments when the staff made an effort to solve their problems in a fast and efficient way (Kim et al., 2012).

With the development of technology, robots occupy different positions, in terms of the hospitality industry, robots are not limited to being used only for check-in, to reduce customer waiting time (Ivanov et al., 2017).

From the beginning of tourism 4.0, the future of the global tourism workforce has been strongly influenced by technologies such as robotics and Artificial Intelligence (AI). The meaning behind the idea of tourism 4.0 is about how computing, mobile internet, robotics, Internet of Things (IoT), AI and other innovative technological solutions, will help to provide hospitality services to the future customers at a new level.

Robot adoption in the tourism and hospitality industries include places such as hotels, restaurants, travel agencies and theme parks, to name a few (Ivanov et al., 2017). For example, "Henn-na Hotel" in Japan is one of the hotels that have embraced the idea of robots doing the human job. Here is a statement from the hotel "For instances, the current usage in the hotel sector includes front desk, concierge, delivery, vacuum cleaning, and being a room assistant. Henn-na Hotel in Japan is the first hotel fully staffed by robots" (Papathanassis, 2017). There are various studies on how tourists view robots in hospitality. Webster et al. (2020) say that humans generally prefer robots to do dirty, heavy, and dangerous work, while Tung et al highlight that "in spite of the importance of technology in the tourism sector, there has only been a limited number of people who have experienced the latest robotic applications in service encounters" (Tung et al. 2018).

Already, AI in the travel sector is altering the way we search and book our travels. This is achieved through a variety of methods, from algorithms that are continuously refining how options are ranked on your favourite website, to opinions shared on social media. AI is assisting travel companies in providing tailored suggestions based on customers' needs and desires. "By using customer data based on past behaviours, the computer can generate predictions on future purchase actions, allowing companies to target customers more effectively and successfully" (Zoodikers, 2018).

While robots clearly have valid uses within the travel industry, their use is controversial to some and there are pros and cons to be aware of. In general, robots are able to deliver greater consistency and accuracy than humans, and are often quicker than humans, especially when it comes to calculations. Unlike with human staff members, a robot will never get tired, will never get bored and does not require motivation.

Additionally, a robot does not need to be paid a salary, is not subject to employment regulations and can be operational 24 hours a day, seven days a week, 365 days of the year, without requiring breaks or holidays. Due to the uncanny valley theory (Mori, 1970), Strait et al. (2017) have suggested that uncannily humanlike features lead to negative perceptions of the robots. Another study revealed that potential customers have higher expectations of humanlike robots compared to machinelike ones (Nowak et al. 2003). That is to say, the usage of humanoid robots might be more advantageous.

2.2. Sustainable practices in hospitality

The world of today is focused on protecting the environment. As a solution for the nature degradation and the changed lifestyle of customers, the organizations have implemented green practices, which are day to day operations that are meant to conserve the environment.

Hotels around the world have also adopted the green practices in order to save energy using renewable energy and to recycle waste. Along with the sustainability of the hotels the trust of the customers is growing and they become more loyal, which leads the hotel to be recognized as an eco-friendly hotel. The green practices have been studied and implemented in some hotels across the globe and they can be easily adapted in many different others, no matter the distance between them.

Many ecological certification standards have been developed and implemented in the hotel industry as: Green Globe, Green Key, Earth Check, NEPC, Travelife etc. (TheGreenWall, 2020).

To be able to know the green practices that need to be applied, there must be knowledge of which human actions harmed the environment and their severity. Some of the human actions have influenced the environment through air contamination, water pollution and waste of resources. Initially, international organizations have expressed their concern about the environment and thought that the biggest problem has been the manufacturing industries related with oil and gas. Now, it is well known and the recent studies have shown that the hotel industry is a major factor of pollution through the waste of water resources. The amount of water used by hotels, swimming pools and by tourists personally, concludes in water shortage and waste water which affects lakes and oceans and vegetation, through spill-over sewage destroying the coral reefs, change the costal climate, threaten the health of people and other living creatures (Bohdanowicz, 2006). As the hospitality industry is a major consumer of tap water, each hotel must make its own environmental protection policies. The implementation of a rainwater collection system is a suitable solution in mountainous areas, representing a beneficial environmental policy, but also having a positive economic impact on the hotel (Foris et al., 2017).

Ecological certification standards have been developed based on the results of these studies and can be successfully and trustfully used to facilitate the implementation of green practices.

Because hotel industry has an economic, social, and ecological impact on the environment, it is important and necessary for every hotel to manage its activities in order to protect and conserve the environment and not to harm it.

Some of the efficient management measures that have been developed to deal with the environment issues are waste recycling to supply clean air, energy and water conservation, environmental health and environmental education for staff and customers (Green Key, 2019). Other methods, suggested by Du Plessis, Van der Merwe and Saayman (2012) in their study, are the biodegradable detergents and soaps, paperless communications and billing systems and the provision of maps and other information printed on recycled paper.

The purpose of this paper is to provide a perspective on the possibility of implementing new technologies and sustainable practices in hotels, conducting a case study on a four-star hotel in Romania.

3. Materials and Methods

Considering the research problem, a survey was conducted using the observation method, in order to evaluate the extent to which new technologies and sustainable practices have been implemented in a 4-star hotel, located in the mountainous area of Romania. The Alpin Hotel has been selected for analysis, a hotel located in the tourist resort Poiana Brasov, which is the most popular tourist resort in Romania, located in a mountainous area.

Two objectives underlie the hotel analysis: O1. Sustainable practices in hospitality -The implemented sustainable practices of Alpin Hotel were identified; O2. Technologies in hospitality - The Alpin Hotel was analysed from the perspective of the new technologies applied in hospitality.

In order to perform this analysis, a set of assessment criteria was developed based on the following topics: environmentally friendly practices, staff attitude, technology, smart room, product design, robots and Artificial Intelligence (AI).

Considering the fact that online sales of accommodation are increasing worldwide (Research and Markets, 2018 a, b), the hotel websites must provide useful and relevant information for tourists (Foris et al., 2019) regarding the services and products offered. That is why, in order to identify the services and practices implemented by the Alpin Hotel, both the property and its website were studied through multiple visits.

4. Results and Discussion

The Alpin Resort is „half corporate, half leisure” (Alpin Hotel, 2020). The corporate segment is focused on large companies interested in conferences or congresses for product launching, for example they have a tradition in Medical Congresses in their Resort. The Alpin Conference Centre offers 41 modular events centres for business events, suitably equipped and easily arranged and tailored to any type of event, from conferences, congresses, presentations, team building seminars, exhibitions and product presentations. The leisure segment consists of 850 beds, in three different accommodation facilities.

The Alpin Hotel is one of the most modern 4-star hotels in Poiana Brasov, where tourists can enjoy one of the most modern SPA centres in Romania and the delicious French and Mediterranean cuisine accompanied by wines of high quality.

Surrounded by a natural landscape, the Alpin Hotel in Poiana Brasov ski resort offers magnificent mountain views and comfortably furnished rooms with wireless internet access. The attention is focused on the corporate segment. They have many spaces for different events and they want to do all the best to make sure that Brasov is the perfect place for conferences and congresses.

A smart hotel can bring very personalized experiences, especially for those who belong to the millennium generation. The feelings perceived during the stay are very important for every guest, so as for him/her to come back. The most important items are: staff attitude, hotel room, location of the accommodation, breakfast and to be an eco-friendly hotel.

The results of the analysis of the Alpin Hotel from the perspective of Sustainable practices are presented below.

The Alpin Hotel has developed a series of sustainable practices: it ensures the care of the green spaces around the hotel, it purchases food products from local producers, offering tourists the possibility to serve traditional gastronomic products and collects and selects waste according to the national selection policies. Cosmetics for tourists as soaps in the rooms and products in the SPA centre are made from natural ingredients.

In order to improve the Alpin Hotel, to support the eco-friendly policy, several green practices must be integrated in the day to day operations.

One must deal with the drinking water waste, and for that a collecting pool for the rain drops can be arranged on the rooftop of the hotel installed with pipes that conduct water through filters and then to a storing container. With all the new technology, now the stored rainwater can be controlled for purity and temperature. To supply the centralized water network (heating system, water systems or the laundry service and toilets). Also, the customers must be informed about this green practice and about the fact that their actions are very important in conserving the local and, after all, global resource of water.

Next to the collecting pool, many solar panels can be installed to produce energy not only for the hotel use, but to also supply energy to the public network. The solar panels and the collecting pool will be installed in a way that even the rain drops fallen on the panels will flow down right in the collecting pool.

The waste management will be based on the separate collecting and on transportation to the closest Waste To Energy (WTE) factory that collects the waste, burns it and transforms it into heat or electricity. The closest WTE Plant to Brasov is actually a cement factory that collects the waste, burns it and produces heat that is used in the obtaining process of cement.

All the paper used in kitchens, toilets, by the billing system, for the informational posters should be replaced with recycled paper. Even the napkins used by the tourist should come from a well-known source that promotes the protection of the virgin forest of Romania.

The soap and detergents should be biodegradable, so as to protect the air freshness and oceans. Even the containers of the soaps and detergents or different solutions should be biodegradable.

To make sure that the hotel is eco-friendly and positively contributes to the environment, and not the opposite, creating a *green team* is a good way to start. For that, the hotel manager should:

- ✓ create an incentive program to encourage the staff to participate and improve upon environmentally-friendly practices;
- ✓ provide yearly staff training on green practices throughout the buildings and grounds and post informational posters in break rooms and guest areas;
- ✓ organise communication courses for employees;

The results of the analysis of the Alpin Hotel from the perspective of the new technologies applied in hospitality are presented below.

At the Alpin Hotel, the automated check-ins and check-outs system is used as an effective way to avoid tails, grow income, reduce costs, prevent errors and improve customer experience and loyalty.

Within the hotel's app, guests are assigned an available room or opt for a particular room, depending on preference and availability. For an easier interaction between the hotel's customer and the reception, this app offers the check-out option, followed by the receipt of the invoice to the email address. To implement this feature, Signature RFID locks are an option that allows the use of this virtual key or digitized key. For a complete experience, guests can also use this application to access other areas of the hotel, such as the fitness room and the swimming pool.

Using Chatbots is a professional way to stay connected with all guests. Essentially, chat blasting is mass-messaging a broadcast to all the contacts someone has on Facebook Messenger and other social media tools. It can be used to either send messages in real time or schedule them in advance like an email campaign.

A closer interaction between the customer and the client can also be done by using NFC Technology (Near Field Communication), by linking the tags to Google+, Facebook, Twitter, and so on. The verification process can be done smoothly by using mobile devices. In addition, the hotel keys can be transmitted directly over the phone, which can improve user security.

In each room the guest should find a tablet because they might be reluctant to downloading individual applications. Each tablet will have applications that will describe the hotel's contribution to nature protection, will inform guests about the bio products they are going to consume and use. The guests can communicate with staff for any problem, or blur, they will find motivational videos showing the effects of the non-observance of nature protection requirements, they can change temperature, modify the ambient light, start the flow of water in the bathtub by pressing a button, all this just for great experiences.

By adopting these applications, the guest can acquire knowledge of environmental protection practices and also of how to apply them at home.

Provided chambers are equipped with intelligent sockets, guests can turn connected electronics on or off and access the timer function by using one application. They do not only result in increasing the tourists' level of satisfaction, but also contribute to energy savings and thus to environmental protection.

Printed images on walls are incredibly important because they not only allow us to capture a certain moment in time, but also to keep it for future generations and thus to relive our wonderful recollections or experience again and again. Even more, the printed images are easily shared with others and authenticate our important past, so, in addition to the advanced technology, the paintings will remain essential, showing the culture and history of Brasov.

Infrared Sensors can be used to avoid classic door cards and especially to know exactly when a room is free.

For a more enjoyable accommodation for parents, the Alpine Resort has six escape rooms and places to enjoy during the tourists' stay, to make children places more fun and smart. This type of service also pleases the Millennials, especially if Virtual reality (VR) technology is incorporated. The idea of having an escape room with the theme of a botanical garden is appropriate for an eco-friendly hotel, therefore we recommend the implementation of such an escape room theme in the Alpin Hotel.

In the lobby area of the Alpin Hotel, a robot is available for tourists for interaction and information. It has a limited role, being a real attraction for tourists. Even if robots will never get tired, will never get bored and do not require motivation, humans cannot be replaced. Therefore, humans will be at the front desk and robots will help and make the human job easier. Regarding the hotel's possibilities of implementing this technology and the efficiency of an investment in robots, we suggest that two types of robots should be used: a robot for the room service, the food would thus be delivered quickly and the guests can enjoy their accommodation, and another robot for the cleaning service, useful for the proper sanitation in playgrounds, restaurants, sanitary groups and SPA.

5. Conclusions

There is a real potential for the involvement of new technologies as facilitators of interconnectivity between the hotel and tourists, this aspect being likely to offer solutions for modernizing the services offered by hotels in order to provide quality experiences to tourists. Moreover, it is time for hoteliers to rethink and reshape services and products, in order to meet the expectations of millennials, technology being a foundation on which to build and identify viable solutions to improve communication and advertising, as well as actions to protect tourists' health. The implementation of new digital technologies such as AI, IoT etc., can be a step forward in rebuilding tourists' confidence that their safety and health will not be endangered during their stay at the hotel and in generating increased loyalty from tourists.

Implementing sustainable practices in hotels is becoming a necessity. First of all, in terms of efficiency, to save energy using renewable energy, reduce water consumption, save tap water and recycle waste, and secondly, hotels being recognized as eco-friendly can generate more trust, making tourists more loyal. Several suggestions were also made on how the Alpin Hotel can improve its services for the millennials, as well for the green tourists.

The results of the study are useful for hotel owners and managers, for small and

medium enterprises in order to improve the process of organization and to act efficiently by implementing the new technologies. The implementation of new technologies is also useful in the current period to prevent the contamination of the hotel with the Covid-19 virus, as well as to protect tourists' health in the current pandemic context. The results help the stakeholders reflect on the environmental practices that could be implemented in accommodation units, also offering practical solutions to become an eco-friendly hotel.

From an academic point of view, this research helps strengthen existing studies on the link between technology, sustainability and hospitality.

References

- Bohdanowicz, P., 2006. Responsible resource management in hotels-attitudes, indicators, tools and strategies. Doctoral thesis. *Stockholm: Royal Institute of Technology*.
- CIA, 2001. *Long-term global demographic trends: Reshaping the geopolitical landscape*. Washington: CIA.
- Du Plessis L., Van der Merwe P. and Saayman, M., 2012. Tourist perceptions on whether South Africa national parks are environmentally friendly. *Acta Academia*, 45(1), pp. 187-208.
- Ekamper, P., 2009. Ageing EU looks into future labour market: More part-time jobs will affect employment. *Demos, Bulletin on Population and Society*, 25, pp. 12-14.
- Foris, D., Pleşca, M., 2017. Sustainable Tourism Through the Protection of Sweet Water Resources in Mountain Area. *Bulletin of the Transilvania University of Braşov, Series II*. 10 (59), No.1, pp. 113- 118.
- Foris, D., Tecau, A.S., Hartescu, M., Foris, T., 2019. Relevance of the features regarding the performance of booking websites. *Tour. Ec. J.* 26, pp. 1021-1041. <https://doi.org/10.1177/1354816619845790>
- Gössling, S., 2018. Tourism, tourist learning and sustainability an exploratory discussion of complexities, problems and opportunities. *J. of Sust. Tour.* 26, pp. 292-306.
- Green Key. [online] Available at: <https://www.greenkey.global/criteria> [Accessed 11 May 2020].
- Gretzel, U., Sigala, M., Xiang, Z., Koo, C., 2015. Smart tourism: foundations and development. *Electronic Market*, 25, 179–188
- Hotel Alpin. [online]. Available at: <https://www.hotelalpin.ro/>
- Höjer, M., and Wangel, J., 2015. Smart Sustainable Cities: Definition and Challenges. In L. M. Hilty and B. Aebischer (Eds.), *ICT Innovations for Sustainability, Advances in Intelligent Systems and Computing* (pp. 333–349). New York: Springer.
- Iberdrola. [online]. Available at: <https://www.iberdrola.com/talent/generation-x-y-z> [Accessed on 19 November 2020]
- Ivanov, S., Webster, C., and Berezina, K., 2017. Adoption of robots and service automation by tourism and hospitality companies. *Revista Turismo & Desenvolvimento*, 27/28, pp. 1501–1517.
- Jackson, R. and Howe, N., 2008. *The Graying of the Great Powers: Demography and Geopolitics in the 21st Century*. Washington: Centre for Strategic & International Studies.
- Kim, J.-H., Ritchie, J. and McCormick, B., 2012. Development of a scale to measure memorable tourism experiences. *Journal of Travel Research*, 51(1), pp. 12–25.

- Lopez de Avila, A., 2015. Smart Destinations: XXI Century Tourism. *Presented at the ENTER2015 Conference on Information and Communication Technologies in Tourism, Lugano, Switzerland, February 4-6, 2015.*
- Manaktola, K., Jauhari, V., 2007. Exploring consumer attitude and behaviour towards green practices in the lodging industry in India. *Int. J. of Contemp. Hosp. Manag.*, 19, pp. 364-377.
- Mori, M., 1970. The uncanny valley. *Energy*, 4(7), pp. 33–35.
- Noor, N.A.M., Shaari, H., Kumar, D., 2014. Exploring tourists' intention to stay at green hotel: The influences of environmental attitudes and hotel attributes. *The Macrotheme Review*, 3, pp. 22-32.
- Nowak, K. L. and Biocca, F., 2003. The effect of the agency and anthropomorphism on users' sense of telepresence, copresence, and social presence in virtual environments. *Presence: Teleoperators and Virtual Environments*, 12(5), pp. 481–494.
- Papathanassis, A., 2017. R-tourism: Introducing the potential impact of robotics and service automation in tourism. *Ovidius University Annals, Series Economic Sciences*, 17(1), pp. 211-216.
- Petrevska, B., Gelev, S., Cingoski, V., 2016. From smart rooms to smart hotels. *Zbornik radova sa XXI međunarodnog naučno - stručnog skupa Informacione tehnologije - sadašnjost i budućnost*, Žabljak. 29 feb 05 mar 2016, 21. pp. 201-204.
- Research and Markets (2019). *Global online accommodation Booking market*. Research and Markets [online]. Available at: <https://www.researchandmarkets.com/reports/4861829/global-online-travel-market-2019> [Accessed on 7 April 2019].
- Research and Markets, 2019. *Global online travel market*. Research and Markets [online]. Available at: <https://www.researchandmarkets.com/reports/4861829/global-online-travel-market-2019> [Accessed on 7 April 2019].
- Sigala, M., 2018. New technologies in tourism: From multi-disciplinary to anti-disciplinary advances and trajectories. *Tourism Management Perspectives*, 25, pp.151–155.
- Solnet, D., Robinson, R., Baum, T. and Lockstone-Binney, L., 2016. What about the workers? Roles and skills for employees in hotels of the future. *Journal of Vacation Marketing*, 28(16), pp.212-226.
- Strait, M. K., Aguillon, C., Contreras, V. and Garcia, N., 2017. The public's perception of humanlike robots: Online social commentary reflects an appearance-based uncanny valley, a general fear of a "Technology Takeover", and the unabashed sexualization of female-gendered robots. In *2017 26th IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN)* pp. 1418–1423.
- The Green Wall.[online]. Available at: <https://thegreenwall.com.au/hotels-resorts/> . [Accessed 26 March 2020].
- UNWTO, 2015. *Understanding Tourism: Basic Glossary* [online]. Available at: <http://media.unwto.org/en/content/understanding-tourism-basic-glossary>. [Accessed 09 April 2019].
- Webster, C., Ivanov, S., 2020. Robots in travel, tourism and hospitality: Key findings from a global study. *Varna Zangador*, pp. 18-21.
- Zoodikers, 2018. *How AI is transforming the tourism industry* [online]. Available at: https://zoodikers.com/2018/06/aitransformingtourismindustry/?fbclid=IwAR2UX7_BpWPogCS9s817ahpwz-5XPlcFI661VAIkM5U6WK_vIzNksNOQ, [Accessed 10 April 2019].