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The Legal Implications of Artificial Intelligence in Hotel Operations

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Abstract

Understanding how Artificial Intelligence (AI) impacts organizational functions supports stakeholders to prepare accordingly and profit from these developments. Adopting a grounded theory approach, this study uses three interlinked stages (in-depth interviews, focus groups and a questionnaire-based survey) to explore the impact of AI on the marketing function of hotels. The results identify ten trends related to AI's contribution to hotel marketing, clustered in four themes. AI reengineers internal processes and procedures by enabling data and content as catalysts of competitiveness; empowering the augmented worker and performing mass personalization and customization. AI also impacts relationships with stakeholders by determining return on investment; improving sustainability; and governing legal aspects and ethics regarding data use. AI supports networks to which the organizations belong by concentrating and integrating organizations and transforming distribution models. AI transforms customer processes and services by engaging smart and predictive customer care and by employing predictive and augmented product and service design. The study illustrates the changes that AI will likely bring to hospitality and tourism marketing, developing a research agenda and raising discussion points for academic and industry practitioners respectively.

Keywords: AI, marketing, customization, personalization, innovation.

Introduction

Artificial Intelligence (AI) is defined as a family of technologies that can recognize, analyses, act, learn and demonstrate advanced features of human intelligence in the process of problem-solving. With tourism in the process of digital transformation, the initial impacts of AI can be found in many facets of the sector. Recent developments in generative conversational AI demonstrate the opportunities, challenges and implications of AI across all aspects of life. AI is changing operational and marketing functions for tourist destinations and organizations. AI systems empower personalization and recommender systems, robots, conversational systems (e.g. chatbots and voice assistants), forecasting systems, smart travel

assistants, language translation applications, and smart tourism and smart destination systems. The technology is already having an impact on tourism, disrupting functions and reengineering.[1]

With such a rapid pace of change, the question remains as to how AI will further transform organizations. It is possible to find studies about the historical development of AI in general, and how it might affect the travel and tourism industry as a whole. These studies are high-level, conceptual and speculative. With the exception of Grundner, who examined tourism destinations and hospitality respectively, few studies explain how AI may impact specific sectors or business functions. To derive a deeper understanding of the probable effects of AI and its potential impact on organizations, this three-part study examines the potential impact of AI on the marketing function of hotels; answering Samala et al.'s call for further research on the concept of AI and its application to the tourism sector.

Based on grounded theory, a three-stage interlinked qualitative approach, comprised of structured interviews with AI experts which informed focus groups with tourism marketing experts and a subsequent follow-up survey to reconfirm findings in the light of changing industry priorities due to the COVID-19 pandemic, was used to explore the changes that AI may have on the specific business function of marketing, within the hotel subsection of tourism. The study examined how AI will affect commercialization and marketing in the longer term at the organizational level from both an internal and an external perspective. It explores the transformations that AI will potentially cause within the marketing function of hotels and illustrates the changes AI will bring to hotel marketing, developing a research agenda and discussion points for academic and industry practitioners respectively.

Artificial intelligence in tourism and hospitality marketing: theoretical foundations

Artificial intelligence is a set of technologies that can imitate human intelligence in order to solve problems. Similar to humans, AI can apply rules, improve over time, learn, and adapt to changes in the environment. AI has evolved over time, with initially systems only required to have some form of basic intelligence to be tagged as AI. However, requirements have grown and specific autonomous behaviors are now required for systems to be considered intelligent AI needs to be able to act autonomously, as well as to be self-aware, creative, and social. Hence, in the context of this research, we define AI systems as those able to autonomously imitate human thinking, make decisions, and perform advanced operations and procedures over large sets of data. Huang and Rust explain that AI first augments and then replaces human intelligence (HI) at a given intelligence level, whilst AI and HI complement best as collaborative teams.

Bruyn et al. infer that AI is Machine Learning trained, using three learning paradigms, namely: Supervised Learning, Unsupervised Learning, and Reinforcement Learning. 'In a supervised learning paradigm, a neural network learns from a set of examples (training data)

[1]https://www.tandfonline.com/doi/full/10.1080/13683500.2023.2229480

where both inputs (predictors) and outputs (target variables) are known to the analyst, such as the model learns to minimize a loss function (e.g. entropy).' Unsupervised learning identifies patterns in data without pre-existing labels. Reinforcement learning engages agents to learn how to take action in an environment to maximize rewards and minimize penalties over time.

AI is one of the driving forces of the fourth industrial revolution and it is expected to have similar transformative and substitutive powers to machines or IT. In association with big data, AI is considered to be the next general-purpose technology with the potential to have significant impacts on firms AI solutions are usually cheaper, faster, and less prone to errors than humans. They can even provide new outcomes, such as finding patterns in data sets beyond the capacity of humans.

The Impact of Artificial Intelligence on Marketing

Artificial Intelligence (AI) is revolutionizing the marketing industry. AI can automate marketing tasks, personalize customer experiences, and provide valuable insights into customer behavior. AI's impact on marketing is far-reaching and growing. With AI's potential to transform the marketing landscape, marketers must evaluate whether AI is the right fit for their business.

We look at the positives and negatives that the inclusion of AI can have on marketing.

The positive impact of AI on Marketing

The impact of AI on marketing is still emerging, as new tools and practices emerge but it can be seen as transformative. One of the key areas where AI can have a significant impact is customer segmentation and targeting. With the help of AI, marketers can analyze customer data and behavior, segment their target audience, and personalize their marketing efforts. This can lead to better engagement, higher conversion rates, and increased customer loyalty.

AI can also be used to automate marketing tasks, such as email campaigns, social media management, and content creation. By automating these tasks, marketers can save time, reduce costs, and focus on higher-value activities. Additionally, AI-powered chatbots and virtual assistants can provide personalized customer service and support, improving customer satisfaction and saving productivity time.

According to Wharton University, AI has several **Positive Impacts** on business and marketing including:

- Customer service & reduced inbound queries via chatbots.
- Better product recommendations on websites.
- Segment audiences and create targeted campaigns.
- Sentiment analysis to assess customer satisfaction.
- Fraud detection.
- Boosting efficiency through process automation.
- Improving the speed or consistency of service.

The negative impact of AI on Marketing

According to HubSpot, AI can assist your marketing strategy. However, there are drawbacks and limitations to the productivity of AI in marketing, including:

- **Machines cannot replace human connection:** Chatbots are a generic form of AI used in marketing but currently, they have limited responses and may not have the data necessary to answer every customer's question.
- **AI predictions and analyses can sometimes be wrong:** Even when Ai is fed the right volume and quality of data, it can still struggle with reliable sentiment analysis and other tasks.
- **They require huge sets of the right data and human intervention:** For the best results, AI needs lots of high-quality data that has been correctly processed and some human intervention to develop and organise this information.
- **AIlacks human creativity:** AI displays its own creativity particularly generative AI such as mid Journey and ChatGPT. While this can be powerful, it has its limitations. [2]

Personalized Recommendations: AI algorithms analyze user preferences, behaviors, and past interactions to provide personalized recommendations for destinations, accommodations, activities, and attractions, enhancing the overall user experience.

Targeted Advertising: AI-powered tools enable tourism marketers to create highly targeted advertising campaigns by segmenting audiences based on demographics, interests, and online behaviors. This increases the efficiency of marketing efforts and improves the ROI of advertising spend.

Dynamic Pricing Strategies: AI algorithms analyze various factors such as demand, seasonality, competitor pricing, and consumer behavior to optimize pricing strategies dynamically. This helps tourism businesses maximize revenue and occupancy rates. Chatbots and Virtual Assistants: AI-powered chatbots and virtual assistants provide 24/7 customer support, answering queries, providing travel recommendations, and assisting with bookings. This improves customer satisfaction and reduces the workload on human customer service agents. Predictive Analytics: AI algorithms analyze vast amounts of data to predict future travel trends, consumer preferences, and market demand. This enables tourism marketers to anticipate changes in the market and adjust their strategies accordingly, staying ahead of the competition.

Enhanced Customer Insights: AI technologies gather and analyze data from various sources, including social media, website interactions, and customer feedback, to gain valuable insights into consumer behavior and preferences. This helps tourism marketers better understand their target audience and tailor their marketing strategies accordingly.

Virtual Reality (VR) and Augmented Reality (AR): AI-powered VR and AR technologies offer immersive experiences that allow travelers to explore destinations virtually before

[2]https://www.griffith.ie/blog/the-impact-of-artificial-intelligence-on-marketing

making a booking. This not only enhances the pre-trip planning experience but also helps tourism marketers showcase their offerings in a more engaging and interactive manner.

Language Translation and Localization: AI-powered language translation tools enable tourism businesses to communicate effectively with international travelers by translating website content, marketing materials, and customer inquiries in real-time. This helps to overcome language barriers and attract a diverse range of visitors.

AI and hospitality and tourism marketing

AI has great potential to significantly affect the hospitality and tourism sectors by both enhancing operational efficiency and improving customer service, ultimately leading to higher profitability. For example, how AI-powered Chatbots can be used to provide interactive 24/7 customer service by answering common guest queries, providing personalized recommendations, offers, and assistance, and even handling simple booking requests. This can improve customer service and reduce response times, thus enhancing guest engagement, loyalty, and satisfaction. Kim et al even demonstrate that artificial intelligence is one of the critical dimensions for developing space tourism.

However, key challenges remain in implementing AI systems. These include the need for high-quality data, which can be difficult and expensive to generate, as well as the complexity of finding an appropriate fit between AI systems and human employees. The hotel sector's historical resistance to adopting new and emerging technologies; may also act as a barrier. Goel et al. illustrate that psychological, social, financial, technical and functional barriers hinder the adoption of artificial intelligence and robots in the hospitality and tourism industry. Growing consumer privacy concerns and apprehension around the rapid development and adoption of AI may act as brakes on the more widespread implementation of further diffusion of AI in the hotel sector. Jabeen et al. suggest that 'human knowledge, services and robotics applications were the most significant factors influencing automation and AI implementation'.

Hospitality marketing includes a vast array of activities, including segmentation, value proposition, product, and experience design, distribution, pricing, customer relationship management, and reputation management; many of which offer great potential for the application of AI. Existing research on the application of AI to both the hotel sector in general and hotel marketing in particular, tends to be either descriptive or methodological speculative. It largely highlights the origins and potential of AI but fails to examine how these developments impact the sector or its future operations.

Within the extant research, several prominent research streams can be identified. The potential of AI for personalization, is one persistent theme, with systems leveraging the rich data pools of past purchases, preferences, and interests often held by hotels. These are used to personalize marketing messages, prices and offerings, leading to higher conversion rates, as well as increased loyalty and lifetime value. Similarly, insights from AI-based data analytics systems can be used to personalize the guest experience by identifying preferences such as

room temperature, amenities, or dining options, which if implemented would lead to higher guest satisfaction and loyalty, as well as increased revenue.

AI's ability to undertake deeper levels of analysis also offers great potential within hotel marketing. For example, studies highlight how hotels can use AI and machine learning to forecast occupancy rates and then optimize room rates, based on a much broader range of issues than simply supply and demand. This ultimately leads to more accurate forecasts, thus helping to maximize revenue and profitability. Similarly, AI-based sentiment analysis can be used to better understand customer feedback. By analyzing peer-generated user reviews on online platforms (such as Tripadvisor), AI can identify positive and negative aspects of a property's service, highlight areas for improvement, better manage online reputation, as well as inform marketing strategies.

Many articles on the nexus of AI and hotel marketing focus on the potential of this developing technology for quantitative marketing. For example, the potential of AI for market segmentation, where the rapidly developing technology can be used to more thoroughly analyze customer data to segment customers based on past purchase behavior, preferences, and/or demographics, thus helping hotels to target their better marketing campaigns and improve both customer engagement and loyalty, Several highlight AI's potentials for use in predictive marketing analytics, with advanced machine learning-based systems capable of analyzing vast amounts of unstructured guest data. Such functionality can be used to predict future behavior such as booking patterns, preferences, or spending habits. This can subsequently be used to anticipate guest needs, tailor marketing campaigns, and optimize revenue management strategies.[3]

Internal processes and procedures

Data and content as catalysts of competitiveness

Participants agreed on the importance of data but also explained that few companies in the hotel sector have the capacity to generate big data. They identified large technology operators (such as Google, Amazon or Facebook), GDSs (such as Travelport or Amadeus), and online travel agencies (such as Expedia and Booking.com) as the proprietors of big data. Participants also explained that companies in the hotel sector have exclusive access to data as they know their clientele intimately (e.g. tourist behaviors while inside the hotel). Respondents suggested that alliances between companies might be necessary to generate joint databases sufficiently large and detailed enough to allow AI algorithms to function properly. Participants in the first focus group indicated that commercialization and marketing departments need to focus on content generation and analytical development, as most distribution in the future will be performed using technology-based channels. Participants in the second focus group (technical staff) were especially concerned with the fact that too often

[3]https://eprints.bournemouth.ac.uk/38818/1/Artificial%20intelligence%20s%20impact%20on%20hospitality%20and%20tourism%20marketing%20exploring%20key%20themes%20and%20addressing%20challenges.pdf

it is thought that capturing and filtering data is a simple and automatable task, which is often not the case. They also suggested that generating and accessing high-quality data is costly.

Augmented workers

The concept of augmented workers emerged in both focus groups. These participants predicted that AI would provide workers with augmented capabilities (e.g. seeing, and hearing), allowing them to better understand and anticipate the needs and wishes of customers proactively and reactively. As a result, they mentioned that employees would need the capacity to integrate technology into production processes in order to complement human capabilities. This concept was discussed primarily by participants with relatively strong technological backgrounds.

Mass personalization and customization

Mass personalization was a concept frequently mentioned by focus group participants. Participants suggested that technology, particularly AI, will facilitate mass personalization, which previously was very costly and unaffordable. However, participants noted that the type and depth of adaptation were less clear. When adaptation does not require additional infrastructure and expenditure (e.g. the music in the room and temperature), it may be possible to achieve personalization and/or customization. Where personalization requires significant infrastructure adaptation or expenditure (e.g. changing the colour of a wall), the level of personalization may be superficial, take longer to implement, or will necessitate a surcharge.

Organizational networks and distribution

Concentration and integration of organizations

Participants in the first focus group agreed that the global competitive environment requires organizations to generate more intelligence, data, and predictive capabilities. This requires technological expertise, equipment, and substantial investment. They suggested that the only way that organizations can achieve new capabilities is through concentration and integration. Cases such as Marriott Hotels International and Airbnb were mentioned. It was recognized that this concentration process would also become evident in other sectors such as transportation, travel retailing, and within MICE companies.

Transformation of distribution models

Participants in both groups agreed that radical changes in the way customers are acquired within the online environment would also take place. From the traditional keyword model, they expected that there would be a movement towards a model based on intelligence, with strong conversion capabilities. Instead of customers looking for information, AI will fetch context-based information and services and push it to potential consumers. Traditional tourism distributors may disappear, leaving only a few AI algorithm-enabled platforms. The use of predictive programmatic advertising will likely become more generalized. Participants

also suggested that technology companies, such as Amazon, Google, and Facebook, will have the potential to expand services within travel and tourism.

Stakeholders

AI return on investment

Return on investment related to AI was a concept discussed extensively in both focus groups. The discussion was led by participants from large hotel chains. It was argued that the tourism sector is highly competitive and key organizational indicators focus on revenue, as sustained profitability is critical for shareholders. For AI investment to occur, an established connection between implementation and increased revenue and profitability is critical. Partnerships were also perceived as critical for competitiveness.

AI as a tool to improve sustainability

Both focus groups had extended discussions related to sustainability. Participants agreed that AI would allow companies to offer customers more detailed information about their organizational footprint, inducing consumers to reduce or compensate for consumption. Customers may also be charged according to their environmental footprint. Participants imagined a system where the service may compensate for negative externalities, introducing sustainability from product conceptualization.

Legal aspects and ethics regarding data use

Participants in both focus groups complained that many stages of implementing and deploying AI, from the collection and processing of data to the transformation of jobs are complicated by legal and ethical issues. Legacy legislation was blamed for failing to provide a productive legal framework that is suitable for the AI-advanced industry. Participants argued that users were overly alarmed by regulators and the media. It was further indicated that the European and Spanish data protection and privacy laws (e.g. European General Data Protection Regulation [GDPR]) were excessively restrictive.

Customer processes and services

Smart and predictive customer ratings

There was general agreement among participants that AI-empowered data analysis will allow organizations to assign a dynamic value to each client. AI applications will empower new CRM and revenue management capabilities and will revolutionize the way in which customer value is focused and analyzed. Participants in the first focus group (top-level executives) understood that this way of assigning value to customers will generate structural changes in the sector. These will allow different agents and other stakeholders to decide which guests best fit their value proposition.

Predictive and augmented product and service design

Participants in both focus groups considered that, based on prior knowledge of clients' tastes and behaviors, AI will help design products and services in a predictive, dynamic, and adaptive manner. This could mean developing customized products and services oriented to satisfy specific customer needs. Participants mentioned that the digitalization of physical environments was likely and would enable richer and more realistic remote experiences.

Discussion and contributions

While many of the issues mentioned in the literature were discussed extensively in the in-depth interviews and in the focus groups, others were not considered to be as important by the participants. For example, the regulation of AI has been mentioned in the, but was not a topic that raised concern within the focus groups. It seems that the regulation of AI is a technical matter, and practitioners are not so worried about it.

Instead, issues that were given much more importance in the focus groups than in the literature are the cost and ROI issues related to. ROI was a significant concern for focus group participants and was seen as a major barrier to AI deployment especially for smaller players in the marketplace. The need for commercial businesses to guarantee returns to shareholders was the driver of this concern. However, in the European context, it was mentioned that large public investments aimed at stimulating recovery from the COVID-19 pandemic may help reduce such concerns.

Participants also indicated that complex organizational change would be required to implement AI. One of the few available guidelines on the implementation of AI projects stresses the need to avoid big and costly projects and focus instead on small feasible projects. This suggests a potential conflict between the intrinsic transformative nature of AI projects and research findings that suggest keeping projects as small as possible.

Regarding the effect on organizational competencies (enhancing vs. destroying), results suggest that enhancement is more likely, where augmented workers take advantage of AI and AI-facilitated service encounters taking place. It was suggested that a new marketing function should be developed, which would result in a significant change within the hotel sector. This new form of marketing would be based on the use of data platforms and AI-enabled decision-making. It would be oriented to the contextual, intelligent, and dynamic distribution of content, with close-to-perfect effectiveness with guest requirements. The new marketing function should be able to leverage the hotel sector's intimate customer knowledge to generate extensive personalized experiences that require augmented services developed by the integration of humans and machines.

Participants believed that the effectiveness of the collection and conversion actions in direct or intermediary channels will continue to increase. This implies that the fight for data access will force a strong concentration on a few actors with sufficient data and customer trust. This will create barriers to entry and change the marketplace radically.

Experience design will also support mass personalization as data drives individualized experiences. Experiences will be cocreated dynamically by a set of algorithms that will adapt to each client, at the right time and with the right emotion, although the basis of the physical resource will remain the same. Ambient intelligence will be used for customers to co-create their own experiences, on-demand and in real-time, with the integration of multiple actors within the network.

Service development will diminish the existing dichotomy of automation or customized service whilst hybrid services will expand. This will not be a fight between machine and human contributions as it will no longer be human touch vs high tech. Instead, services will be cocreated on a balance between technology and data-enabled empathy, with in effect the machine proposing customized offerings. In doing so, machines will augment and enhance service to levels previously unimaginable. Marketing will change progressively from a dynamic model in digital platforms to an AI-empowered, automated, dynamic, personalized, intelligent model that adapts constantly to the customer context in real-time.

Thus, the implementation and deployment of AI in hotel marketing will introduce disruptions that organizations and societies must manage. First, users who resist sharing their data due to a fear of surveillance will potentially generate an AI divide. Both legislation and technology should be able to create solutions to address these issues. For example, several privacy-oriented browsers already help users with data privacy. However, such users will not be able to fully benefit from effective personalized marketing offers or enjoy participation in the co-creation processes. Even if users are not opposed to sharing data, privacy issues and legal requirements within regions and countries will also need to be taken into account. For example, the European General Data Protection Regulation (GDPR) is restrictive in relation to how data can be collected and used (an issue frequently mentioned in both focus groups).

The AI expert interviewees suggested that hotels will have to provide new services to guests travelling with robots, suggesting the creation of new products and services around robots and other technological advancements. As AI changes hospitality and tourism marketing, perfect price discrimination will be possible through price personalization. However, a question remains as to whether consumers will accept such hyper-personalization. Based on current research, it is not well understood whether users will be willing to pay different prices depending on their personalized variables under one-to-one marketing.

Although there appears to be a prevailing narrative regarding how COVID-19 will cause the acceleration of digitally related trends, this was not reflected in responses to the follow-up survey. Of the trends identified, experts believed that COVID-19 would accelerate four out of the ten (mass personalization and customization, AI as a tool to improve sustainability, predictive and augmented product and service design, and smart and predictive customer ratings). It will slightly accelerate or maintain momentum for three (concentration and integration of organizations, augmented workers, and legal aspects and ethics regarding data use), and slow the remaining three (AI return on investment, data and content as catalysts of competitiveness, and transformation of distribution models).

Theoretical contributions

By establishing the potential impact of AI on the marketing function of hospitality and tourism marketing, this study offers several theoretical contributions. First, while previous studies have discussed how AI will impact organizations and marketing as a whole, this study delves deeper to explore the effects AI will have on the marketing function of hospitality and tourism and how this function may change as a result. Ten trends (data and content as catalysts of competitiveness; augmented workers; mass personalization and customization; concentration and integration of organizations; transformation of distribution models; AI return on investment; AI as a tool to improve sustainability; legal and ethical aspects; smart and predictive customer ratings; predictive and augmented product and service design) grouped under four themes (internal processes and procedures; organizational networks and distribution; stakeholders; and customer processes and services) were identified. This highlights the need for a new potential configuration of the hospitality and tourism marketing function. Based on access to high quality and quantity of data, a more precise and complete lifetime value of the customer, and higher conversion rates supports the development of hyper-personalized experiences in co-creation with customers.

The study illustrates that data access may become one of the drivers behind organization concentration. AI needs accurate, reliable and mass data on which to operate, making access to data the key strategic issue as we enter an era in which AI becomes more critical to organizational success. Hotels with their close contact and intimate understanding of customers, are well-positioned to capitalize on this trend. However, the tripartite relationship between owners, operators and brands, and their misaligned interests about who should control customer data, may limit this advantage in the short run.

The study also introduces the concept of augmented workers in hotels: employees that use AI-powered technologies to perform tasks better. As machines will cause automation and worker displacement, augmented workers and augmented humans will be able to provide better value services. This has significant implications for the education sector as universities and hotel schools need to educate graduates on the potential and utilization of AI. This will prepare them for careers in a sector where technology will undoubtedly be deeply ingrained in all aspects of management and operations.

Last, practitioners expect a connection between AI and developing more sustainable products. However, this is a link that needs further exploration and more detailed study. The connection between digitalization and sustainability has been subject to ample discussion in the literature, with studies calling for more research. It is clear that AI will be developing intelligence across all actors and will be propelling the adoption of tools such as ChatGPT for practical benefits at a large scale.[4]

[4]https://www.tandfonline.com/doi/full/10.1080/13683500.2023.2229480

Managerial implications

The study's findings offer several practical implications for hospitality and tourism marketing. Firstly, the study provides a guide to the issues that need to be considered in the process of implementing and deploying AI in hotel organizations. Figure 1 provides tourism and hospitality managers with an overview of the main changes that they will need to face in the marketing area in the next years. The possible substitution of humans by technology and the development of AI-based services are probably the most relevant topics. The opportunities that AI provides to deliver a much more personalized CLV can significantly improve conversion rates. This study suggests that generating high-quality complex datasets will become a key competitive factor. Data will become a key source of differentiation, with firms developing advanced algorithms to exploit them in unique ways, then generating competitive advantage. Currently, only large digital firms (such as Google, Facebook, Amazon.com or Booking.com) can generate such datasets. This suggests that alliances or other forms of innovative partnerships should be taken into consideration by managers to create smart ecosystems. However, in line with Sivarajah, there was general agreement on the high costs associated with big data for organizations, which was seen as a barrier to entry.

The role of AI-enhanced personal assistants or 24/7 digital butlers/concierges to augment human performance and improve the tourism experience was perhaps the most anticipated disruption. However, the study also suggests that AI could have a negative impact on job satisfaction, engagement and turnover intention of hotel employees.

Reflecting the literature employee training was considered critical during the transition period. This should help employees work more effectively with AI and avoid negative impacts. However, our study shows that the challenges will become relevant as AI becomes more pervasive in hotel marketing departments, as the way in which AI works will be increasingly more difficult for marketers to understand. Therefore, managers should consider new types of training that not only show how to use technology but go deeper and allows trainees to understand how the technology works. Managers should consider incorporating technical staff into their marketing function to support the deployment of AI.

Limitations and future research

As with all research, this study has several limitations, some of which provide directions for future research. The experts interviewed in stage 1 were mostly technical academics and did not have detailed tourism or hotel marketing-specific knowledge. Future research may benefit from the involvement of AI experts with a greater understanding of this sector. Developing focus groups in other markets with different AI penetration will also explore cultural and AI-diverse issues. In addition, employing a Delphi method with marketing professionals may also lead to further valuable insights that might expand the findings.

Conclusions

This paper examines how the deployment of AI impacts tourism and hospitality marketing. Evidence illustrates that for AI to be beneficial in tourism and hospitality there is a

prerequisite for both organizational and technological integration and synergies. Rather than being based exclusively on technology and marketing platforms, AI innovation and impact will be generated through the integration of data, content platforms and algorithms. Marketing functions will gravitate towards mathematical and visual analysis techniques associated with content to generate value from data. Segmentation will be numerically based on personalization, as AI allows companies to cocreate value and respond to individualized segments. Integrating ambient technologies and understanding individual needs and relevant contexts in real-time will empower value cocreation. CLV will include emotional and sustainability variables and predictions will be made based on individual preferences with a high degree of effectiveness. As a result, travelers will enjoy personalized value and cocreated experiences, with services developed dynamically by technology and/or AI-augmented humans.