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Generative Artificial Intelligence in the Hospitality and Tourism Industry: Developing a Framework for Future Research

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Abstract

Generative artificial intelligence (GAI) offers important opportunities for the hospitality and tourism (HT) industry in the context of operations, design, marketing, destination management, human resources, revenue management, accounting and finance, strategic management, and beyond. However, the implementation of GAI in HT contexts comes with ethical, legal, social, and economic considerations that require careful reflection by HT firms. The purpose of this study is to offer a critical examination of the effects of GAI applications across a broad spectrum of stakeholders in the HT industry, in an effort to integrate practical and academic insights and foresights and drive academic research forward. Through the contributions of a purposeful selection of scholars, educators, and industry-practitioners, along the tenets of the stakeholder theory of the firm, this study highlights the potential challenges and opportunities of GAI and considers how academics can navigate the (research) complexities of this rapidly evolving technological phenomenon.

Keywords

generative artificial intelligence (GAI), ChatGPT, stakeholder theory, value co-creation and co-destruction, hospitality and tourism

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Impact Statement

This study critically reviews and discusses the role of GAI and postulates expert opinion on the implications of GAI for hospitality and tourism stakeholders. In so doing, this study provides a comprehensive discussion on this disruptive subject that inspires, provokes, excites, and engages hospitality and tourism scholars, researchers, educators, industry practitioners, and other stakeholders. This study further proposes an integrative conceptual framework of how the application of GAI across the different functional areas of HT firms affects a wide range of HT stakeholders that may result in both the co-creation of value and the co-destruction of value through resource-based, ethical, financial, legal, educational, cultural, and technological mechanisms. By integrating the perspectives of more than 30 hospitality and tourism academics and practitioners on the conceptualization of this subject, the current study offers insight and foresight and may serve as a catalyst for further impactful research.

Introduction

Generative artificial intelligence (GAI) is a form of artificial intelligence that can create various forms of original content. In contrast to artificial general intelligence (AGI), which can independently learn and execute a wide range of tasks and ideas (and is presently only hypothetical), GAI is referred to as "generative" because it can *generate* specific kinds of output, such as text, audio, images, and video, based on supervised or unsupervised training (Stening, 2023). Popular GAI tools include platforms such as ChatGPT, BingAI, Bard, DALL-E 2, and many others.

The potential impact of this technology on society and humanity is profound; and like all industries, the hospitality and tourism (HT) industry is poised for a wide range of exciting new advancements and unprecedented challenges as GAI continues to develop (Carvalho & Ivanov, 2023; Dwivedi et al., 2023a, 2023b; Mich & Garigliano, 2023). For example, when applied to marketing functions in the HT industry, GAI can use travel history, consumption preferences, and social media content to create personalized recommendations for travelers, generate descriptions of destinations and hotel properties, and even create virtual tours of hotels and attractions (Lalli, 2023), simultaneously creating value for firms and consumers. Likewise, on the financial side, GAI-enabled technologies can generate novel insights into portfolio optimization strategies, capital structure, key performance indicators, and fund allocations (Kizildag et al., 2019; Ozdemir et al., 2023), simultaneously creating value for firms and for society. Indeed, for nearly all functional areas of HT firms, there are potential applications of GAI that can be used to increase operational efficiency, reduce costs, enhance workplace productivity, and enrich the customer experience.

Despite the excitement over the potential benefits of GAI, however, the adoption of such technologies comes with a set of ethical, social, and economic considerations. In many cases, the use of GAI is seen as a double-edged sword, where the solution to old problems can become the source of new ones (Zhuo et al., 2023). Many such problems have already arrived in the form of privacy and security concerns, intellectual property rights violations, and liability and accountability issues, to name only a few. In acknowledgment of both the promises and the challenges of GAI, the purpose of this paper is twofold. First, we seek to provide a critical examination of the effects of GAI applications across a broad spectrum of industrial and social stakeholders in HT. Second, we propose an integrative conceptual framework of GAI adoption in the HT industry that can be used in pursuit of meaningful future research in the field. Through the contribution of a wide range of academic and practical perspectives, this paper highlights the potential advantages and disadvantages of GAI and considers how GAI researchers can navigate the complexities of this rapidly evolving technology.

In taking such an approach, this paper develops a conceptual framework for the future exploration of GAI in hospitality and tourism research. As such, the purpose of this research is not to present a detailed account of the current state of GAI in the HT industry. Rather, the goal is to propose a framework that can be used to ensure that future GAI-based research is maximally relevant to practical hospitality and tourism management. In so doing, the study addresses Mondal and colleagues' (2023) call for comprehensive models and frameworks to analyze the application of GAI in different sectors. Specifically, this paper takes a stakeholder theory perspective of the GAI phenomenon, providing an account of the potential benefits and challenges of GAI for HT firms in relation to customers, employees, suppliers, and many other stakeholders in the HT landscape. The end result is a list of 50 research questions that can be used to drive forward the exciting new era of GAI-based research in the HT industry.

Methodology

Given that the goal of this research is the creation of a framework to drive the future of an emerging research phenomenon (i.e., GAI in the HT industry), an inductive methodological approach was taken. Specifically, 30 hospitality and tourism practitioners with a wide range of research and industrial expertise were selected to participate in this research. Rather than enlisting these experts as data points, all contributors were asked to take authorship of the paper. In accordance with the tenets of theoretical sampling, the contributors to (and thus, authors of) this research were carefully chosen to represent a broad range of hospitality and tourism expertise, including law, finance, marketing, operations, finance, accounting, strategic management, human resources, design, sustainability, restaurants, hotels, destinations, and travel. Notably, while this list of contributing expertise is not

designed to be collectively exhaustive or mutually exclusive, analysis of the content provided across the contributing authors indicated that most of the major functional areas of HT industries were represented.

The 30 hospitality and tourism experts were identified through the process of theoretical sampling and then contacted via e-mail to solicit their participation in the project. All 30 people who were contacted agreed to contribute. In order to ensure a common frame of reference across contributors, the e-mail contained a set of instructions for how to contribute. Specifically, each contributor was asked to write up to 500 words on the implications of GAI in the field of hospitality and tourism management. As per *JHTR*'s guidelines, contributors were asked to focus on "big ideas" that "generate transcendent insight that inspires, provokes, excites, and engages our audiences." Additionally, contributors were expressly asked to provide an account of the transformative effects of GAI on HT industry stakeholders, focusing on what is already happening as well as what could potentially happen in the future. After providing this discussion, contributors were asked to provide an additional 100 to 200 words that would indicate the most imperative research questions pertaining to their writings.

Each contributor was given 2 weeks to make their submission, with a reminder e-mail sent at the 1-week mark. The reminder e-mail reiterated the instructions regarding big ideas, stakeholder emphasis, and so forth. Once all writings were received, the analysis was conducted in two parts: (1) model development and writing integration and (2) development of research questions and ranking.

To develop the model, four of the authors acted as an editorial team to review, sort, aggregate, and interpret the submissions of the other authors. Through the process of thematic analysis and emergent design, an integrative framework (referred to as the REFLECT model) was developed. The primary themes inherent to the model included the functional areas of HT firms/industry domains in which GAI is adopted/implemented; the stakeholders in the HT landscape affected by GAI adoption; and the mechanisms through which these effects are calibrated (i.e., REFLECT factors). Consistent with the value creation perspective of stakeholder theory, the final emergent theme was the dual processes of co-creation and co-destruction of value that are manifested in a reciprocal nature via the other three components of the model. The writings of all the authors were then organized around the four emergent themes. Specifically, the editorial team collaborated via video conferencing to organize and edit all the written submissions of the other authors. In this way, this research and the end results (i.e., the sections of the manuscript that follow) is not a set of standalone contributions; rather, this manuscript represents the integration of a large and diverse group of experts, presented in a unified model and driven by an inductively-derived theoretical framework.

Finally, the research directives and/or questions submitted by each author were reviewed. As before, the four editorial authors worked together to combine these contributions into a list of 50 specific questions across four different categories: general directives, GAI application questions, REFLECT-based questions, and stakeholder-based questions. A survey was then designed to allow each contributing author to rate each question on a 5-point importance scale ranging from "*not at all important*" to "*extremely important*." This survey was then sent to all authors to complete. The results of this survey are presented in tabular form in the concluding section of the manuscript and highlight key areas of future inquiry into the GAI phenomenon.

Emergent Framework of GAI in the HT Industry: The REFLECT Model

The themes and processes emerging from the methodological approach outlined above are proposed in a framework referred to hereafter as the REFLECT model of value co-creation and value-co-destruction (see Figure 1). This model provides an account of how the application of GAI across the different functional areas of HT firms (e.g., operations, management, marketing, etc.) can affect a wide range of social and industrial stakeholders. In the model, the HT firm is the principal agent of value creation in the hospitality ecosystem. The impact of firm-enabled GAI applications on various stakeholders is mediated by a variety of factors (the REFLECT mechanisms) that must be optimally calibrated to ensure that the firm maximizes the value created across the system, for as many stakeholders as possible.

While the HT firm has agency for creating and capturing value in a GAI-enabled hospitality ecosystem, the REFLECT model is predicated on two important considerations. First, in line with the service-dominant logic (SDL) of the firm, the value dynamics identified in the model are non-recursive in nature. GAI applications are fundamentally based on stakeholder interaction and engagement; thus, stakeholders are not passive recipients of a firm's value proposition, but instead "co-create" (Prahalad & Ramaswamy, 2004) and/or "co-destroy" (Plé & Cáceres, 2010) value in the system. This latter possibility that GAI implementation can have adverse consequences leading to value co-destruction has been identified in extant research (e.g., Carvalho & Ivanov, 2023; Houde et al., 2020). For example, value is co-destroyed by a firm's employees if they sabotage GAI applications that they perceive to be a threat to their jobs, because management did not enable an organizational culture conducive to GAI implementation and/or did not educate employees on the implications of GAI for their work.

Second, the value co-creation and co-destruction feedback loops indicate that the benefits of using GAI to facilitate mutually beneficial firm-stakeholder relationships (i.e., value co-creation) may, in turn, create friction in other stakeholder relationships (i.e., value co-destruction). For example, an improved customer experience due to GAI application may result in a loss of agency for employees, leading to lower job morale and engagement. Such friction can likely

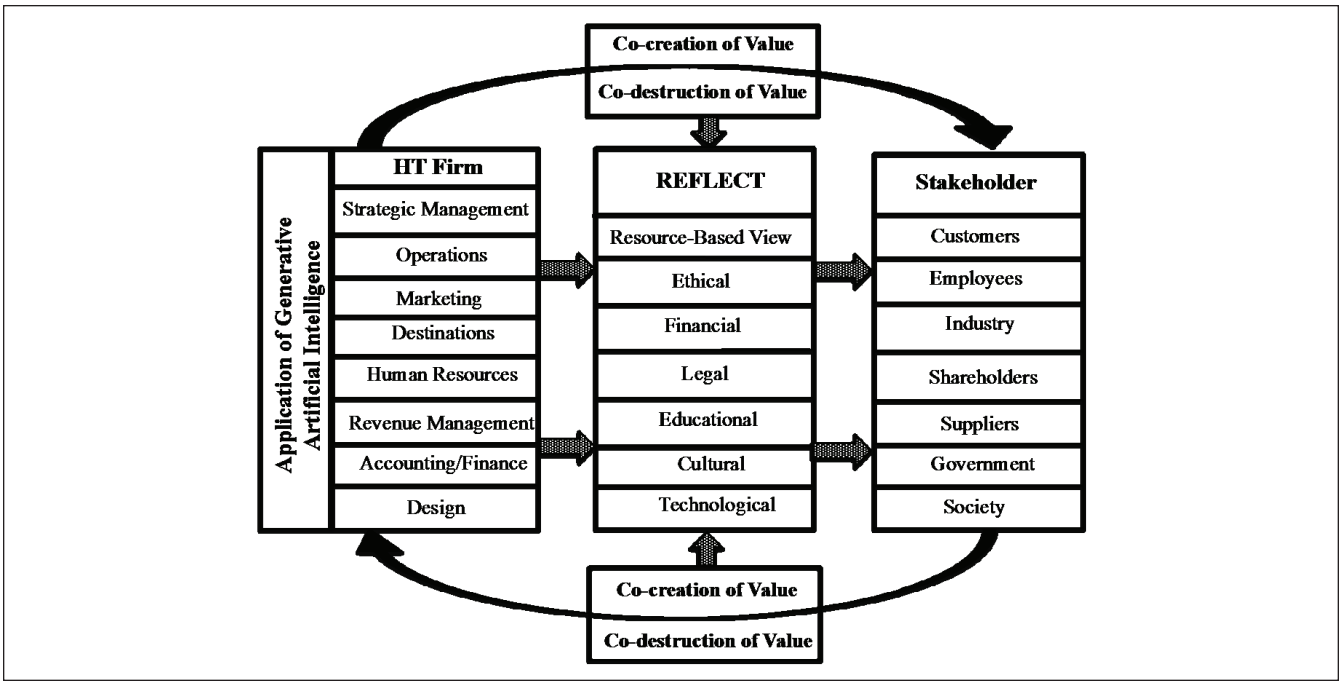

Figure 1. GAI as a Source of Value Co-Creation/Co-Destruction for HT Stakeholders.

be mitigated by a consideration and calibration of the mediating REFLECT mechanisms, as will be explained in subsequent sections.

The model's emphasis on value creation aligns with the principles of the stakeholder theory of the firm, which emphasizes the interconnected relationships between a business and its various stakeholders, such as customers, suppliers, employees, investors, and communities. According to stakeholder theory, a company should create value for all stakeholders, rather than solely focusing on shareholders (Freeman et al., 2010). This theory combines the resource-based view and market-based view of the firm, while also considering sociopolitical factors (Phillips, 2003). It is important to note that stakeholder theory serves as a framework, providing a basis for various derived theories and models (Freeman et al., 2010), such as the one offered in the present study.

Considering the objective of our study, which aims to propose a framework ensuring that future research on GAI remains relevant to practical hospitality and tourism management, we developed the REFLECT model through an inductive analysis of authors' writings. These writings, in turn, were based on prompts that prioritize the significance of stakeholders (Freeman et al., 2010). Furthermore, since GAI is a novel technology with potential applications in the hospitality industry, it presents both promising opportunities and ethical, legal, social, and economic challenges. Adopting a more inclusive and balanced approach that considers the needs and experiences of multiple stakeholders can facilitate ethical decision-making and foster mutually beneficial relationships, ultimately contributing to sustainable organizational success in GAI implementation.

The components and dynamics of the REFLECT model are thematically consistent with other frameworks that have been devised based on stakeholder theory (see Freudenreich et al., 2020; Mihailova et al., 2022), and, in this study, emphasize sustainable value creation via GAI application for HT firms. As follows, this manuscript integrates the perspectives of more than 30 hospitality and tourism academics and/or practitioners in terms of (1) GAI applications at the firm level and their potential for value co-creation and value co-destruction; (2) the REFLECT-based mechanisms through which such GAI applications can facilitate value co-creation and value co-destruction for industry stakeholders; and (3) the research questions that arise from the relationships in the REFLECT model.

GAI Applications at the Firm Level

Strategic Management

GAI has the ability to profoundly influence strategic management within the HT industry. In this context, strategic management is defined as "the process through which firms define their missions, visions, goals, and objectives, as well as craft and execute strategies at various levels of the firms' hierarchies to create and sustain a competitive advantage" (Okumus et al., 2019, p. 5). Leadership plays a critical role in navigating the transition to a GAI-integrated strategic management model, and the role of leaders will evolve with the advent of this new technology. This shift may require new

approaches to leadership that focus more on collaboration, agility, ethical and responsible use of GAI, and emotional intelligence to foster human–machine collaboration (Heukamp, 2020; Peifer et al., 2022).

One of the most important aspects of leadership is innovation, and GAI is particularly well-suited to assist leaders in creating value for the stakeholders. By assisting with the process of idea generation and brainstorming, GAI can assist leaders in identifying avenues through which the company can innovate new products and services that bring additional value to the company stakeholders, drawing upon knowledge and information far beyond that which would be accessible to individuals. This means that innovative idea generation will now no longer be dependent on a single visionary CEO or a small, highly experienced product development team, who are inherently limited in idea creation by the boundaries of their own knowledge or experience. This is not without downsides, however. Just as GAI can help a particular firm create value in this way, it can, at the same time, be providing the same information to other competing firms, resulting in an increased threat of substitutes, new entrants to the space, and a much more competitive environment. Over time, this can result in value co-destruction for the focal firm in the form of lost competitive advantages and increased spending on competitive warfare.

Operations

There is no doubt that the advent of GAI is already impacting HT operations in a meaningful way and will continue to do so in ways we cannot yet imagine as the technology continues to develop. Because GAI can perform expressive tasks and craft individualized interactions with guests, it is ideal for communication purposes (Brendlinger, 2023). GAI chatbots, for example, can analyze customer data to understand the context of each customer inquiry and use natural language processing (NLP) techniques (Athuraliya & Farook, 2018) to craft a personalized response, resulting in the creation of value for the customer, who receives an instant, personalized answer to the question or request.

While such personalized recommendations and experiences create value for both the customer and the company, suggestions and experiences can also result in value co-destruction. Inherent in a personalized experience is the loss of the experimentation, exploration, and discovery that comes with trying new foods, traveling to offbeat places, and having experiences that force customers to stretch and grow outside of their comfort zone. Additionally, the information put forth by GAI can be incorrect, outdated, or biased, which can result in value co-destruction for both the firm and the customer in the form of bad experiences and guest complaints.

Marketing

One of the most impactful outcomes of GAI in the HT industry is expected to be hyper-personalization on the demand side (Guszkowski, 2023; Lalli, 2023; Mondal et al., 2023). GAI can help HT businesses create personalized marketing content at scale (and without extensive human involvement) to enhance booking experiences and marketing communication. As an example, hotels can use GAI to create personalized social media posts for their guests based on their preferences and past behavior. Such systems could analyze data such as the guest's previous stays, dining preferences, and activities booked, and generate social media posts that exhibit relevant offers and experiences. Another example is the use of GAI to create personalized recommendations for customers. A GAI system can market personalized travel itineraries, accommodation options, and activities by analyzing data on a customer's past purchases, search history, and preferences. This can help businesses create engaging and relevant advertising and social media content, increasing customer interest and engagement. As evidence, Haleem and colleagues (2022) note that marketers can enhance ROI by analyzing consumer data and understanding their genuine desires without wasting resources on unsuccessful advertising attempts.

GAI can also be used to respond to comments on social media. Currently many companies only respond to a few selected comments simply because the human capital required to respond to every comment is cost-prohibitive. By using GAI to respond to customer or follower comments, the company will be able to increase consumer engagement on social media.

GAI can be especially helpful in dealing with unfavorable online reviews. GAI can review the sentiments expressed in online reviews and respond in real-time. Additionally, these responses can be individualized, rather than using the one-size-fits-all responses that are so often seen in such circumstances. By creating personalized responses to negative online reviews, GAI can aid in service recovery, satisfaction, loyalty, and positive word of mouth.

While these capabilities can certainly create value for both the company and the customer reading the reviews, there is a potential for value co-destruction as well. As online review sites become flooded with fake reviews that are generated by GAI, it may become impossible to trust any review at all. This may lead to the destruction of the familiar review and rating systems that exist currently, as they will no longer provide reliable information.

Destination Management

GAI can be employed not only by individual companies, but also by destinations. At the travel decision level, GAI can add value to every stage of the trip from the anticipation and planning phase, to the trip to the site, the onsite experience, and the post-reflection phase of the trip. In the destination development stage, GAI can enable the development of more engaging, hyper-personalized tourism products, such as personalized travel guides based on individual preferences. For example, a

travel guide could generate an itinerary for a day in Paris, focusing on museums per the traveler's request. This travel guide can also adapt in real-time to factors such as the traveler's mood or weather conditions, adjusting the itinerary to include more outdoor activities if the weather is nice.

In addition to inspiring travelers and developing customized trip plans at the pre-trip stage, GAI can be integrated to the destination experience by offering navigation routes based on interests and preferences of visitors during the trip stage. Hence, GAI has the potential to replace guides and even local people to assist people during their travel. However, this loss of autonomy in travel-related decision making could also negatively affect the tourist experience resulting in value co-destruction (Grundner & Neuhofer, 2021).

Human Resources and Talent Management

Staff training and development is a key area ripe for the infusion of GAI. Science-based GAI training can empower associates to develop exactly the skills they are lacking, as GAI will be able to identify areas in which the associate needs help, create an individualized training program, provide real-time feedback, and make shifts to the training program based on each person's progress and success. Training and development are key factors in employee retention, and GAI can assist with this important initiative by developing highly relevant, hyper-personalized training and associate development.

GAI also has the potential to supplement human labor in the HT industry by reducing the need for humans to do repetitive and time-consuming tasks. This, in turn, can allow employees to focus on higher-level tasks that require creativity, critical thinking, and customer interaction. While this could have positive effects in areas that struggle to hire and retain employees, particularly unskilled laborers, it does give rise to concerns over human employee displacement in many markets. While this is, of course, a concern in many segments of the economy, it is of particular concern in the HT industry, which is overwhelmingly comprised of unskilled workers and customer service employees. Thus, there exists the potential for value co-destruction from an employee perspective. However, GAI is also expected to create new jobs and tasks by transforming frontline service encounters and redefining HT jobs (Carvalho & Ivanov, 2023).

Demand, Supply, and Revenue Management

As a data-driven field, much of what is done in revenue management depends on the accurate forecasting of customer demand (Cross et al., 2009; Roberts, 2022; Talluri & van Ryzin, 2006). The advent of more sophisticated GAI algorithms is likely to advance the ability of revenue managers to access the vast amount of historical and current data in real-time to better model demand and predict customer purchase behavior, even over longer time horizons. In addition to being able to make more accurate forecasts, GAI will also be able make pricing suggestions based on how actual demand and supply are developing in real-time. This would mean that updates to the booking curve, forecast adjustments, and changes in inventory allocations will also be possible in real-time. These possibilities have the potential to create a great deal of value for the firm in the form of maximized profits.

Thus, GAI systems will most certainly (partly) replace current revenue management practices that rely largely on human insight and interference. This may lead to the co-destruction of the field of revenue management as we now know it, displacing employees and rendering certain skill sets irrelevant. Moreover, HT firms must consider potential consumer backlash and the impact of algorithmic pricing, in particular online price discrimination, on perceived CSR performance (J.-P. van der Rest et al., 2022), and may have to develop the ability to detect, prevent, and mitigate such value co-destruction.

Accounting and Finance

GAI has the potential for value co-creation in the accounting and finance discipline in several different ways. First, GAI models have the capability to produce AI-powered chatbots or virtual assistants that offer improved, authentic, and contextually appropriate responses in conversational finance. Consequently, the utilization of generative AI can greatly enhance the effectiveness and user satisfaction of financial conversational AI systems by delivering precise, captivating, and sophisticated interactions with users. This technology can be applied externally to facilitate customer conversations, as well as internally within departments, enabling tasks like advancing an invoice through the approval process, thereby co-creating value for the firm, employees, suppliers, and customers. Second, thanks to its comprehension of human language patterns and its capacity to generate coherent and contextually relevant responses, GAI can offer precise and comprehensive answers to users' financial inquiries. These models can be trained on extensive datasets of financial knowledge, enabling them to provide appropriate information and address a wide array of financial questions accurately.

One important potential for value co-destruction in the accounting and finance sector is data confidentiality. While data breaches and information leakages are already commonplace, leaked data is often somewhat hard to access, as one must know where to look for or how to access this information. However, once such financial data is leaked to GAI, it is then instantly available, in a user-friendly format, to the entire world. The potential for value co-destruction for a firm and its stakeholders in such a scenario is of serious concern.

Architecture, Design, and Art

GAI technology has the potential to provide opportunities for value co-creation for numerous stakeholders in the

domain of hospitality architecture and design. For example, GAI technology includes complex machine-learning algorithms with the ability to translate text into high-resolution 3D renderings. This gives rise to the potential for groups of target guest segments to participate in the research and design of HT spaces in real-time. For example, if a hotel company is designing new guest rooms, target guest segments can provide designers with direct feedback about what they want, and the rooms can be visualized from thematic analyses of their texts and rendered in seconds. Participants can then see the room, request changes, and add to the design.

Also, with access to extensive material databases, GAI can propose suitable materials for various architectural elements in the hospitality sector. By considering factors like durability, aesthetics, maintenance requirements, and sustainability, GAI models can help designers and architects make informed choices in selecting appropriate materials for flooring, wall coverings, fixtures, and more. Similarly, GAI can make suggestions on such design aspects as lighting and acoustics. By analyzing room dimensions, layout, and materials, AI algorithms can simulate and generate recommendations for enhancing sound quality, reducing noise pollution, and ensuring optimal acoustic experiences for guests in areas such as lobbies, restaurants, and conference rooms. By considering factors like natural light availability, room function, mood, and energy efficiency goals, AI algorithms can propose lighting configurations, fixture types, and automation strategies to create visually appealing and functional environments.

Despite these benefits, the use of GAI in hospitality design has the potential for value co-destruction, as well. Generative AI models are not infallible and can produce inaccurate or flawed outputs. If these errors are not detected, it could lead to faulty design decisions or suboptimal outcomes. Implementing GAI without appropriate validation and human oversight may result in design flaws or inefficient use of resources, negatively impacting stakeholders. Additionally, an over-reliance on the suggestions and designs of GAI may result in value destruction in terms of creativity. Generative AI models operate based on pre-existing data and patterns. While they can offer innovative suggestions, there is a risk that they may not consider certain unique or unconventional design ideas that could add value to a project. Relying solely on GAI recommendations might limit the exploration of groundbreaking concepts, stifling creativity and innovation.

The REFLECT Framework and HT Stakeholders

As is evident from the examples in the preceding section, there are myriad applications of GAI at the firm level, some of which lead to co-creation of value, and some that can contribute to value co-destruction. Importantly, these value dynamics depend on the stakeholder from whose perspective GAI applications are being assessed. Thus, while the applications of GAI across various functional domains open new and exciting avenues for HT firms, there are several mediating factors that firms must navigate and potentially calibrate to maximize the reciprocal co-creation of value by and for the firm and its stakeholders, and minimize or eliminate value co-destruction.

To capture the spirit of the thoughtfulness that these factors require of HT business leaders, we identify them via the acronym REFLECT, which represents the various considerations of GAI use by HT firms: Resource-Based View of GAI, Ethical, Financial, Legal, (Internal) Educational, (Organizational) Cultural, and Technological Infrastructure. Thus, we recommend that HT business leaders filter the implementation of GAI in their firms through the REFLECT lens to more effectively co-create reciprocal value in the system. We discuss these various mediating factors in the section below. (Note that the factors are not discussed in the same order as the acronym itself, so as to provide better flow and continuity for some connected ideas represented in the various factors). While the GAI applications discussed in the previous section emphasized how the technology can allow HT firms to co-create value, the REFLECT factors, to a large extent, caution against the value co-destruction possibilities of GAI.

Resource-Based View of GAI

The resource-based view of the firm posits that inter-firm competition is not an end state, but rather a dynamic process in which constant learning takes place on either side. A firm's competitive advantage is determined by its internal resources, which can be strategically developed and exploited to achieve superior firm performance. These resources must be valuable, rare, difficult to imitate, and non-substitutable (J.-P. van der Rest & Roper, 2013). Such resources offer the firm a *comparative* advantage, allowing the company to produce goods and services that have either a higher value or a lower cost (or sometimes both) than those of its competitors. If managed appropriately, this comparative advantage in resources can translate into a *competitive* advantage for the firm in relation to their competitors. However, as the marketplace is in a constant state of flux, firms must constantly be monitoring their competitor's performance, looking for clues about how the rival firm is acquiring, exploiting, and extracting value from resources in order to remain competitive. The focal firm learns from the actions of its competitor and then institutes new strategies to compete. At the same time, the rival firm is reciprocating this process and adjusting its own positioning. This inter-firm learning process is key to retaining market positioning and spurs innovation and forward growth for all concerned (J.-P. van der Rest & Roper, 2013). Over time, companies have spent millions of dollars and countless hours perfecting the systems and strategies through which they learn about their competitors. This may include things like data analytics, corporate espionage, and reverse engineering, to name just a few. However, because GAI is a

continuous learning model and can make suggestions for strategies and actions based on the knowledge acquired, its advent may significantly impact the dynamic learning processes that take place. The form which this may take remains unclear, but one can foresee a situation in which Firm A is learning from Firm B, Firm B is learning from Firm A, and both are learning from GAI, but in different ways.

HT as an industry is inherently labor-intensive, and firms that can develop GAI capabilities, defined as "the ability of a firm to select, orchestrate, and leverage its [G]AI-specific resources" (Mikalef & Gupta, 2021, p. 2), can achieve competitive gains. Thus, based on the work of Mikalef and Gupta (2021) in the context of AI more generally, we posit that developing GAI capabilities goes beyond using GAI techniques and technologies (i.e., applications) that are easily acquired in the market and are subject to replication. Moreover, the data—both inherent and firm-specific—underlying these technologies is insufficient to create GAI capability. "Organizations require a unique blend of physical, human, and organizational resources to create an [G]AI capability, which can deliver value by differentiating it from that of competitors" (Mikalef & Gupta, 2021, p. 1). Thus, beyond adopting the GAI applications highlighted in the previous section, HT firms must make long-term and strategic investments into GAI as an organizational capacity that fundamentally transforms how the firm is structured and how it operates. Berg and colleagues (2023) make a similar argument when they state that for organizations to capture value from GAI, they must develop specific complementary assets that are different from those required for other forms of (discriminative) AI capabilities. Another way that HT firms could leverage a GAI capability to boost value creation is to use it to enhance other existing resources and capabilities. For example, by optimizing its supply chain via GAI, a hotel firm like Motel 6 may be able to further build on its core value proposition (of low prices) by offering even lower prices based on lower costs of inventory.

(Organizational) Culture Considerations

Various studies have identified that an organization's culture plays an important role in its adoption and use of AI (Behl et al., 2022; Dabbous et al., 2022) and, by extension, the development of its AI capability and organizational performance (Bley et al., 2022). According to Mikalef and Gupta (2021), "to unleash the value of [G]AI technologies, organizations must foster a culture of teamwork, collective goals, and shared resources" (p. 6). Individuals and teams across functional silos within HT firms must have a shared vision and foster a culture of open communication and collaboration, particularly as it pertains to the sharing of data that feeds GAI models. Thus, an organizational culture that cultivates a "sharing knowledge is power" environment versus a "knowledge is power" climate can more effectively leverage the knowledge management and deployment capabilities of the firm (Korzynski et al., 2023; Liebowitz, 2001), which, in turn, contribute to GAI capabilities. Relatedly, HT firms must look to build cross-functional teams that include data scientists, software developers, and subject matter experts from various departments to collaborate on AI projects and applications that co-create value for their stakeholders. This also necessitates a culture that embraces risk and places a premium on creativity and taking bold and radical actions (Berg et al., 2023), while placing an ethic of hospitality—and its associated value constellation of care, honesty, integrity, dignity, and respect for and towards its various stakeholders—as its guiding organizational principle (Mody, 2023). Thus, as offered by Mikalef and Gupta (2021), "developing an [G]AI orientation within the firm is a necessary precondition for successful deployments" (p. 14).

Legal Considerations

While the increased use of personal information can lead to improved customer service recommendations and overall customer experience, it also leads to more regulation about the collection, storage, processing, and sharing of this information. GAI systems rely on vast amounts of data to function effectively. In the HT industry, this data often includes sensitive information such as personal details. For instance, chatbots handle travel plans, potentially including credit card information. Ensuring the privacy and security of this data is crucial to ensuring compliance with regulations such as the General Data Protection Regulation (GDPR) and other data protection laws (Kuner, 2018). Consequently, HT organizations may find it difficult to comply with the increased regulation in data protection and privacy laws across borders. Some countries have more comprehensive data protection laws that restrict the use of AI and automated decision-making involving personal information. Other countries do not have a single comprehensive law regulating privacy and automated decision-making. The United States, for example, has a myriad of state laws that cover some aspects of data protection and privacy. The European Union (EU), on the other hand, has been much more proactive in creating consumer protection and privacy legislation, with the most comprehensive to date being the GDPR enacted in 2018.

In addition to legislation surrounding the protection of customer information held and used by companies, there are other GAI-specific regulations that are being drafted in the EU, China, and the United States. These regulations would require that companies developing GAI tools (such as the OpenAI platform that developed ChatGPT) meet strict requirements for the data used to train their algorithms (i.e., the input for GAI tools), including disclosing the use of copyrighted material. In this regard, the EU is mulling a tiered approach to regulating GAI, whereby, in addition to the makers of GAI models, one of the layers of regulation would be focused on "regulating relationships in the AI value chain." Thus, it is likely that the users of GAI models,

including HT organizations, may be required to have specific obligations to downstream stakeholders (customers, employees, etc.), including the need to explain how the model was trained, the use of copyrighted material, and the accuracy of the datasets from biases (Lomas, 2023). It would be legally incumbent upon HT organizations to ensure that the stakeholder data that serves as an additional input into the GAI models produces output that creates and does not destroy value. For example, if creating personalized marketing communications at scale, firms will need to ensure that the GAI model is sensitive to customers of various racial and gender backgrounds.

In addition, given the fact that GAI moves beyond predictive qualities and can act autonomously, it raises many interesting legal questions that may bring into consideration other non-GAI specific laws. One such question pertains to how we assign fault when a product that causes injury incorporates GAI. For example, who can a customer sue if they are "injured" by the hotel's chatbot or GAI-based recommendation system? Or, if a customer is left stranded at the airport after a GAI tool handling a booking request makes a mistake and the reservation is not correctly completed? As such, injured individuals have begun to test the use of traditional legal theories, such as products liability. One can imagine a hypothetical case whereby a chatbot used by a restaurant to handle customer inquiries about ingredients, and, more specifically, about allergens, provides incorrect allergen information about a particular dish. A customer with a severe allergy to nuts relies on this information and eats the dish, resulting in an allergic reaction with significant damage. The customer files a lawsuit against the restaurant, alleging misrepresentation, negligence, and possibly products liability.

While many of these questions have yet to be determined by the courts, they are important to consider for HT operators when deciding on whether to use GAI and what preventive measures should be in place to protect guests and other stakeholders and prevent or minimize value co-destruction (Glaser & Niebla, 2023). Moreover, as far as the customer is concerned, whether the issue has been caused by a GAI system or not, the buck stops with the operator. Thus, companies using GAI need policies to handle these issues and to be ready to take responsibility for any problems caused by their AI systems, whether these systems were developed in-house or leased from a third party. Failure to do so may result in legal penalties, reputational damage, and loss of customer/stakeholder trust. A case involving Delta Airlines provides evidence of these issues. In 2019, the airline sued a vendor of GAI-based customer service technology, [24]7.ai, for a breach of passenger data. Allegedly, the vendor had a weak password for its systems, which allowed a hacker to access its code and subsequently scrape the names, addresses, and full credit card details of up to 825,000 Delta customers. Delta took all the necessary steps to take care of its customers, including notifying them promptly and paying for free credit monitoring products for affected passengers (O'Neill, 2019). However, the reputational damage caused to the airline, as reflected in negative PR and consumer class action lawsuits, goes beyond the legal issues pertaining to the use of the GAI technology itself and raises larger questions of accountability and legal liability. In this regard, as J. P. I. van der Rest and colleagues (2020) determined, in the context of personalized pricing practices, "we argue that not much is to be expected from the legal system, at least not in the short run" (p. 113), regarding GAI applications by HT firms and implementing minimum standards of behavior. HT firms can mitigate legal challenges by adopting a holistic value creation perspective—such as that offered by the REFLECT model—accounting for the needs and experiences of various stakeholders.

Ethical Considerations

Beyond the legal aspects of the collection and use of customer (or stakeholder) data, there are important ethical considerations for HT firms that use GAI-based technology. The first issue pertains to privacy, which relates to the question "Who owns and controls the data, and how can it be used?" GAI systems often rely on vast amounts of personal data, such as browsing history, location data, and social media activity, to generate personalized recommendations or content. For example, AI-powered systems that collect and analyze customer data for creating personalized menus need to ensure that data are collected and used in a transparent, secure, and ethical manner, with clear consent and privacy measures in place. Are customers given the option to opt out of their data being collected? Can they choose which components of their data they would like to share or how the data will be shared with third-party systems outside of the company collecting the data?

Another ethical consideration is the potential for GAI systems to perpetuate biases and stereotypes (N. T. Lee et al., 2019). The current GAI systems mostly rely on Western sources with less input from other parts of the world, and hence may lack the necessary diversity of race, gender, ethnicity, age, education, beliefs, and so on. If these systems are trained on biased data, or if their algorithms incorporate biased assumptions, they can produce content that reinforces existing stereotypes or discriminates against certain groups of people, particularly around race, gender, and ethnicity (Pazzanese, 2020). This can be particularly problematic in the HT industry, where such biases can lead to discriminatory practices in hiring, marketing, and customer service. For example, if a hotel's AI system recommends spa treatments to female customers or golf courses primarily to male customers, or suggests types of cuisine only to customers from specific racial or ethnic backgrounds, it would reinforce harmful stereotypes and exclusionary practices or even perpetuate unhealthy eating practices. This would not only be unethical, but it would also damage the hotel's reputation and lead to a loss of customers. As another example, ChatGPT

analyzes a variety of resumes for recruitment at hotels or restaurants. However, there is an ethical risk that the trained data in ChatGPT may be biased and less prone to recommend historically discriminated groups to managers or more inclined to provide lower-paying jobs to underrepresented groups. This can perpetuate discrimination and inequality in the workplace, leading to a lack of diversity and a negative impact on employee morale and job satisfaction.

In this regard, Zhuo and colleagues (2023) evaluated ChatGPT with respect to four critical ethical considerations: bias, reliability, robustness, and toxicity. While these considerations were developed in the context of a specific GAI tool (ChatGPT), they can be extrapolated to the use of GAI more broadly, as a filter for the firm's value creation efforts. In this context, Zhuo and colleagues (2023) argue that GAI models are trained on a vast amount of data, and thus any biases (implicit and explicit) within the data can provide unfair or discriminatory arguments or suggestions toward people from different cultures and/or those who use different languages, which can affect users' perception of fairness and lead to a lack of inclusivity. It is important to highlight that the current GAI technology is based on existing databases, which might have limitations on diverse and inclusive perspectives in decision-making and communications (Dwivedi et al., 2023a). Hence, discrimination toward customers and employees may potentially be experienced due this limitation.

Furthermore, another crucial ethical concern associated with GAI is robustness, defined as "a model's ability to maintain its performance when given input that is semantically (the meaning of input) or syntactically (the structure of input) different from the input it was trained on" (Zhuo et al., 2023, p. 3). As an example, ChatGPT can be used by international tourists as a language translator. In such cases, ChatGPT must accurately translate new sentences, although the language used is unfamiliar. For instance, if ChatGPT was trained in the formal French language, it should still be able to accurately translate informal "slang" sentences.

Zhuo and colleagues (2023) further postulate that reliability and toxicity is a critical ethical issue related to GAI. First, disseminating false, misleading, misconstrued, or outdated information can contribute to forming conspiracy theories that cause harm and lead to poor decision-making. Often, language models such as ChatGPT can even fabricate sources that do not actually exist. Thus, for example, ChatGPT can manipulate online reviews of hotels or restaurants or mass-create thousands of accounts with false identities. Second, the concern is those models can generate or comprehend harmful or offensive content while interacting with users. For instance, if the GAI used in applications such as customer service chatbots or voice assistants in hotel rooms is trained on datasets that contain racist, sexist, or pornographic content, it can lead to the generation of offensive and harmful communication when interacting with guests. Relatedly, users may attempt to "jailbreak" a GAI application into producing toxic content. For example, a guest could co-create a conversation that tricks the AI into using words or engaging in conversation involving racial slurs (Hachman, 2023) or outright lies (Carter, 2023), which may open the doors to legal consequences.

Financial Considerations

The use of GAI by HT companies will involve significant financial implications and considerations. Managers need to implement a rigorous cost-benefit analysis before adopting AI technologies, including GAI applications (Ivanov & Webster, 2018). In terms of direct costs, the use of third-party GAI is associated with monthly or annual subscription fees to access the application. These can range significantly—from a few tens of dollars per month to a few thousand per month, depending on the capabilities of the application, the requirements of the organization (and, relatedly, any specifications or modifications) and the competition on the GAI market. Some AI providers, such as ChatGPT give free access to their GAI application for a limited period or for a limited number of generated images/words/symbols. This freemium option allows users to get acquainted with and test the product before they subscribe to it, which decreases the perceived risk of purchase of the premium options. Other indirect costs relate to the investment needed to train the GAI application(s) with the company's data to allow it to provide specific solutions to the company's needs and to train employees to use the applications effectively.

In terms of benefits, GAI can improve the profitability of HT companies in several ways. First, it can save costs associated with purchasing photos from databases, text copywriting, and hiring professional actors to appear in ads and read text, among others. The integration of GAI (e.g., ChatGPT) into a chatbot can improve its efficiency in interacting with customers and decrease the need for human employees to intervene, thus reducing labor costs. Of course, the current level of development of GAI has not reached the point where it can deliver output with error-free quality. In fact, the generated output (text, photo, etc.) may be incorrect, not relevant, or not specific enough, thus sometimes requiring human intervention. However, the more human-like interactions with a GAI-based chatbot as compared to other chatbots may have a direct positive impact on revenue since the information provided by the application can be more relevant and personalized to the needs of potential customers (Carvalho & Ivanov, 2023). Additionally, the speed of generating text and visuals, their quality and variety, allow HT managers to develop marketing communication campaigns that use versatile visuals and text, have more versions of ads that could appeal to and attract more customer segments and, hence, indirectly contribute to the company's revenue.

Beyond these functional and administrative applications, HT managers can also apply GAI in strategic decision-making that has implications for the financial health and performance of the firm (Korzynski et al., 2023). For example, HT

managers can leverage GAI capabilities to analyze competitor strategies, customer profiles, employee performance, financial statements, and other factors that impact business operations. These insights can then be used to make decisions on sales, staffing, inventory management, and other cost-related areas to improve overall business efficiency and profitability. Moreover, the ideas that GAI provides about new products, branding, promotion, pricing strategies, business models, and design may trigger the creativity and innovativeness of HT managers to improve the marketing and operational processes in their companies, their competitiveness, and thus improve revenue and profitability.

(Internal) Education Considerations

In 2018, nearly 8,000 Marriott workers across seven U.S. cities went on strike to raise their concerns about the implementation of various AI technologies that were perceived as threatening to their jobs; applications such as robots delivering room service, check-in kiosks with facial recognition technology, and smart speakers that serve as an in-room concierge (Durbin, 2018). Such reactions are consistent with research that has shown that AI disruption and job replacement threats cause anxiety and job insecurity (e.g., Lingmont & Alexiou, 2020). Furthermore, employees contemplate leaving the organization before their jobs are replaced by AI (Li et al., 2019). Relatedly, GAI might exacerbate employees' concerns about the security of their jobs due to its ability to perform more tasks with increasing accuracy. In addition, GAI may disrupt the relationships between HT employees and their organizations by inadvertently harming employees' well-being, leading to undesirable job-related outcomes such as cynicism, depression, and burnout. The risk of replacement by GAI, accompanied by negative work-related outcomes associated with the adoption of GAI, might trigger HT employees to sabotage these GAI-powered applications (e.g., chatbots) and the employer. For example, GAI can be used as a retaliatory tool in which employees could enter a misleading prompt, which, in turn, yields unreliable, harmful, and biased responses that eventually result in lost customers and harm to brand reputation. Likewise, HT employees can also shift the blame and responsibility to GAI when they deliberately engage in workplace misbehavior and a service failure occurs. Also, the use of GAI can result in ambiguity in the workplace. For instance, when a service failure is encountered or high-quality service is not delivered, it might be challenging to determine who is accountable: the employee or the GAI application.

To counter these negative outcomes, along with developing an organizational culture that enables GAI capability, a structured approach to educating internal stakeholders—particularly employees—is necessary to ensure that they are ready for the changes associated with GAI adoption and have a thorough understanding of the technology and its potential applications. The fear of the unknown is driven by a lack of understanding. This may be particularly true for the HT industry, where much work is still manual and labor-intensive in nature, and employees performing such work are often not fluent in technology and its use. Thus, firms must invest in training that starts by explaining what GAI is, how it differs from other types of artificial intelligence, and its current and anticipated applications in the particular HT setting. For example, housekeepers who may be worried about cleaning robots taking over their jobs can be assured that GAI is largely used to generate new content, such as images, text, and audio, and cannot be used to replace any of the tasks they perform.

For employees whose jobs may be impacted by GAI, such as concierges or customer service representatives responding to guest comments on TripAdvisor, it may be important to educate them on the fact that GAI can work hand in hand with human employees and handle repetitive and mundane tasks, enabling employees to focus on the more important and creative components of their jobs (Lee et al., 2023b). For instance, a GAI application could offer a first draft of a response to a negative guest feedback, and a human representative could vet, enhance, and further personalize the response, saving time and effort and providing a high-level recovery experience to the guest. For other employees whose jobs may be more significantly impacted by GAI, such as individuals in areas like marketing or customer experience and/or those working in more senior analytical roles, firms will have to provide the necessary resources for upskilling employees to achieve the desired synergistic culmination of human–machine competencies (Jaiswal et al., 2022). As highlighted by the Society for Human Resource Management, "if leaders don't engage in an open dialogue with workers around GAI, then we're just hoping they will understand, and a lot of them won't, and those are the ones who will be left behind" (Folz, 2023). In addition, particularly for employees whose jobs will involve the use of GAI, they will need to be trained in the ethical implications of using GAI around the issues of bias, transparency, accuracy, accountability and data privacy, and security.

Technology Infrastructure Considerations

A lack of technology infrastructure is one of the main barriers in adopting AI, including GAI, in organizations. Technology infrastructure refers not only to the hardware components associated with data storage, transfer, and processing/computing systems, but also to the softer infrastructure that includes the data itself (how it is generated and fed into the system), and the technical and business skills needed to effectively and efficiently implement and realize GAI algorithms (Mikalef & Gupta, 2021). In this context, HT firms will have to ensure that it integrates with existing technology infrastructure, including operational platforms like property management systems for hotels, third-party systems like content management platforms for

marketing, and customer-facing applications like a foodservice brand's website or IOS app. Finally, as the case of Delta Airlines evidenced, organizational leaders may need to pay particular attention to the increased potential for data breaches—particularly when using third-party applications—and increased cybersecurity threats due to the malicious use of GAI by outside entities (Renaud et al., 2023), and threats arising due to employees' unauthorized use of GAI applications (Cohen, 2023).

Discussion and Conclusions

The introduction of GAI as a dynamic organizational capability for HT firms is predicted to have a dramatic impact on the industry. GAI has potential to create value for HT stakeholders in a transformative manner through the integration of information, computing, communication, and connectivity technologies (Dwivedi et al., 2023a; Sandstrom & Dunn, 2014). Rapid advancements in GAI will likely bring disruptive changes to the HT industry and transform how the HT industry approaches operations, marketing, destination management, human resources, revenue management, accounting and finance, design, and other operational strategies (Carvalho & Ivanov, 2023; Dwivedi et al., 2023a).

As such, GAI can be a technological tool that creates value for HT stakeholders by enhancing guest experience with human interaction when it is most needed while allowing GAI technology to address the repetitive and otherwise mundane tasks, and employees to engage in more creative tasks, leading to a better work-life balance for HT employees. It has the potential to generate a higher level of personalized products and services, elevate the guest experience, and build loyalty. GAI enriches guest experiences, maximizes revenues, reduces cost, and increases profitability. It also provides shareholders with more transparent and accurate insights regarding an organization's financial health, and may help keep associates in the HT workforce longer and attract a new generation of HT leaders.

While effective GAI implementation leads to value co-creation, ineffective management of the GAI applications could lead to value co-destruction by and for HT stakeholders. An over-reliance on GAI might create a perception that GAI-produced content and solutions are always more reliable, which may destroy collaborative organizational culture and lead to a climate of higher psychological competition, creating a toxic work environment, causing disunity, harming employees' well-being, and leading to undesirable job-related outcomes, such as cynicism, depression, and burnout. For customers, the extensive integration of GAI may lead to a loss of autonomy in decision-making and overburden them and reduce or eliminate human interactions that are essential to HT experiences, which may result in value co-destruction (Grundner & Neuhofer, 2021). Sensitive customer information may be at risk of unauthorized access, manipulation, or misuse, leading to privacy violations and potential loss of trust in service providers.

The use of GAI-produced content raises further concerns about intellectual property and copyright infringement, as well as the authenticity and credibility of information provided to customers. The creation of false or misleading content by GAI could lead to disappointment or even danger for consumers, possibly resulting in customers being stranded or experiencing a significant inconvenience due to reliance on inaccurate information generated by GAI. Furthermore, GAI-driven recommendations might reinforce stereotypes or marginalize certain groups, leading to biased or discriminatory outcomes, where HT firms could face grave, service, reputational, and legal consequences. However, by embracing the potential of GAI, while considering its limitations and ethical issues, HT firms can embrace this disruptive technology and offer a more creative, effective, and inclusive experience for customers, employees, managers, and other HT stakeholders (Lee et al., 2023a, 2023b). Devised according to the tenets of stakeholder theory, the REFLECT model offers a comprehensive and clear understanding of the dynamics of value co-creation and co-destruction via GAI implementation by HT firms, and provides a theoretical and practical roadmap for this exciting technology.

Theoretical and Research Implications

While limited, several studies have discussed the applications and potential implications of GAI in the context of the HT industry, research, and education. However, while discussing the use of this technology is important, conceptualizing and analyzing its potential impact on stakeholders from a value perspective is more important. Additionally, the applications for the HT industry have been discussed in an ad hoc and disorganized manner, and the primary focus of the implications has been limited to research and education. Moreover, extant studies mainly emphasize the legal and ethical issues that might arise from GAI applications. In the present study, we go beyond discussing GAI applications for research and education and the potential legal and ethical impacts resulting from the use of GAI in HT contexts. We present a wide range of GAI applications for the HT industry and propose a conceptual framework that provides a comprehensive account of the GAI impacts on HT stakeholders. This framework integrates the resource-based view of GAI, ethical, financial, legal, (internal) education, (organizational) culture, and technology infrastructure (REFLECT) mechanisms and is based on the perspectives of 30 HT academics and practitioners with expertise in various HT domains. Consistent with the work of Freudenreich and colleagues (2020), the REFLECT model aims "to support theoretical and empirical analyses of value creation [via GAI] as well as the management and transformation of business models in line with corporate sustainability ambitions and stakeholder expectations" (p. 3).

Our proposed framework indicates that the application of GAI can result in both the co-creation of value and the co-destruction of value for a variety of stakeholders, and these effects can be mediated by the HT firm via calibration of the various REFLECT-based mechanisms. The reciprocal nature of the relationship between various HT stakeholders and GAI applications in the proposed integrative framework is portrayed by a feedback loop where the benefits of using GAI to facilitate value co-creation for some HT stakeholders might, in turn, lead to co-destruction of value for other stakeholders due to friction in these relationships. However, value co-destruction can be mitigated while value co-creation is enhanced by effective applications of GAI through the REFLECT factors. Furthermore, this integrative conceptual framework offers opportunities for future theoretical, methodological, and empirical research in the context of the nexus between GAI and HT stakeholders.

Practical Implications

Although GAI is an exciting technological development, ultimately, HT is a people industry and will always involve people serving people. Utilizing GAI technology solutions, which work in tandem with consumers, employees, managers, and other HT stakeholders, is necessary to provide greater capabilities and to co-create value for HT stakeholders. Therefore, HT firms should navigate the applications of GAI through several mediating factors (i.e., REFLECT) to facilitate reciprocal value co-creation and to minimize or eliminate potential value co-destruction.

HT firms should make long-term and strategic investment decisions when implementing GAI applications and leverage their GAI capability to improve other existing resources and capabilities (Mikalef & Gupta, 2021). In so doing, HT firms can fundamentally transform their organizational capacity and how they are structured and operated. Furthermore, the insights generated by GAI applications can be used to make strategic sales, staffing, inventory management, supply chain management, and other cost-related decisions to increase overall business efficiency and profitability. Also, GAI should be utilized to generate new products and services, offer creative branding and promotion strategies, and to develop pricing strategies, business models, and design to advance operational activities, competitiveness, and revenues.

HT leaders should shepherd careful integration of GAI in the workplace, considering the perception of employees. Implementation of GAI will likely eliminate some existing jobs and create new ones in the HT industry (Carvalho & Ivanov, 2023; Iskender, 2023). It will also likely change the nature and requirements of other jobs. Accordingly, HT firms need to invest in reskilling and retraining programs to ensure continued employment opportunities in the changing work environment, which necessitates collaboration between humans and GAI. However, not all jobs will be affected or lost due to GAI applications. Therefore, HT firms need to train their respective employees and provide a sense of comfort and ensure job security in this context.

GAI without the monitoring function could create an asymmetric risk for HT industry and might turn HT experiences into value co-destruction events for consumers, employees, firms, and other HT stakeholders. Therefore, HT organizations should explain to all stakeholders—internal and external—how their GAI models are trained, whether and how copyrighted materials are used, which consumer and employee data are fed into the GAI, and the extent to which datasets are accurate and fee from biases (Lomas, 2023). Although many aspects of GAI applications in the context of liability and accountability have yet to be determined, HT firms should develop internal policies to protect their guests and other stakeholders from potential ethical, legal, and social issues that may arise due to use of GAI. In so doing, HT firms ensure that GAI models produce output that creates and captures (not destroys) value for HT stakeholders in reciprocal means while providing the necessary security and privacy protections.

Future Research Directions

As with any transformative technology, GAI also poses ethical, social, legal, and economic challenges that require careful consideration. Otherwise, premature implementation of GAI might lead to value-destruction for HT stakeholders. Therefore, many research questions remain to be answered to evaluate the efficacy of this technological tool in value creation for HT stakeholders. Accordingly, we postulated 50 research questions, some overarching, and some pertaining to the various components of our framework. The research questions were then rated by the 30 coauthors of this study on a 5-point importance scale ranging from "*not at all important*" to "*extremely important.*" Subsequently, each research question was categorized according to its primary focus: overarching, application-based, REFLECT-based, and stakeholder-based questions, and the questions were ranked within their respective category based on their level of importance according to survey results. Table 1 provides an account of these questions as rated by the authors of this research on a 5-point importance scale.

Answering these questions will shed light on the implications of the GAI for stakeholders in the HT domain including scholars, educators, industry practitioners, and policymakers. However, it is important to emphasize that the list of future research questions proposed in this study is by no means exhaustive, and many more research questions will continue to emerge as GAI technology makes further progress and its adoption increases.

In addition to the comprehensive list of research questions proposed above, further theoretical and empirical examination of the GAI technology will be necessary to contribute to our understanding of the theoretical, practical, policy, and

Table 1. Ranking of Research Questions by Components of REFLECT Model.

Overarching Research Questions	Mean Importance*
To what extent does the use of GAI lead to value co-creation or co-destruction for various HT stakeholders?	4.30
To what extent do mediating factors (e.g., ethics, law, culture, finance) affect the relationship between GAI application and value co-creation or co-destruction for HT stakeholders?	4.30
To what extent does GAI affect incumbent HT firms as a disruptive innovation?	4.03
What are the possible consequences of the relationship between GAI application modes and business/management functions on the different types of stakeholders in the production and consumption ecosystem of the hospitality and tourism industry? Which types of firms or sectors of HT are best suited for GAI innovation?	4.00
What are the key manifestations of GAI value co-creation and co-destruction?	3.93
Application-Based Research Questions	**Mean Importance***
To what extent does the integration of GAI impact the efficiency and effectiveness of customer service, customer experience, satisfaction, and loyalty in the HT industry?	4.10
To what extent can GAI tools identify and combat elimination of fake reviews and misinformation about destinations and HT firms?	4.00
To what extent does GAI impact the effectiveness of personalized marketing content in the HT industry (e.g., enhancing booking experiences, providing personalized products, services, and experiences, and marketing communications?)	3.93
What are the most promising applications of GAI in promoting sustainable and eco-friendly travel practices, and how can these initiatives be effectively implemented and scaled up to foster sustainable development?	3.93
Which functional domains (operations, marketing, etc.) in HT is GAI likely to impact the most?	3.87
How can GAI be integrated into existing marketing processes in the HT industry to improve the efficiency of marketing content creation and dissemination?	3.83
How can GAI be used to enhance sustainability and reduce the environmental impact of the HT industry?	3.83
How can GAI-powered language tools be utilized to ensure destination development in alignment with United Nations Sustainability Development Goals?	3.73
To what extent does GAI affect the nexus between sentiment analysis and real-time response performance of online reviews and key performance indicators?	3.53
What are the key factors that influence the adoption of GAI in marketing strategies for HT businesses?	3.47
To what extent does GAI help increase the accessibility of destinations?	3.47
How can GAI help address the negative impacts of over-tourism and overcrowding, such as strain on local resources and degradation of cultural heritage sites?	3.47
Which interior design attributes will be determined by GAI to have the most influence on psychological and physical outcomes (e.g., wellbeing, emotions, etc.) in the HT industry?	3.17
To what extent does GAI determine how preferences for interior design attributes vary with demographic and situational factors in the HT industry?	2.93
Which interior design attributes will be determined by GAI to be most preferred by guests in the HT industry?	2.87
REFLECT-Based Research Questions	**Mean Importance***
How can the HT industry ensure that its use of GAI is both practical and ethical, while also protecting the rights and privacy of its guests?	4.37
To what extent (and how) does GAI adoption affect the decision-making processes of businesses in the HT industry?	4.23
What are the impacts of mediating factors (e.g., ethics, law, culture, etc.) on stakeholder value co-creation and co-destruction via GAI applications in HT?	4.07
What is the legal liability of HT firms using GAI applications towards their various stakeholders?	4.07
What kind of data will be most essential to effective GAI application in HT firms?	4.00
What are the key determinants of successful integration between GAI and other technology infrastructure in HT firms?	3.97
What are the potential implications of GAI adoption for strategic planning and innovation in HT firms and destinations?	3.90
What are the best risk management practices for HT firms engaging in GAI applications?	3.87
To what extent do GAI tools affect business models, market structure, and market power of HT firms?	3.87
How can HT firms determine which GAI applications to invest in? What are the relevant cost-benefit considerations and thresholds?	3.80
How can organizations create the right kind of culture to foster GAI capability?	3.77
What are the key GAI skills that HT firms need to train their internal stakeholders in?	3.67
What are the dimensions of GAI capability? How do they differ from those of AI capability?	3.63
What are the technical skills needed by HT firms to foster GAI capability?	3.60
How can organizations measure the effectiveness of internal GAI education?	3.37

(continued)

Table 1. (continued)

Stakeholder-Based Research Questions	Mean Importance*
To what extent are consumers willing to use GAI in the HT industry? How do consumers feel about the use of their personal data for GAI applications?	4.33
To what extent does the adoption of GAI impact the HT workforce?	4.27
How do consumers, employees, and other HT stakeholders perceive the ethical, legal, and privacy concerns associated with the adoption of GAI?	4.13
To what extent does GAI affect existing and new employment opportunities in the HT industry?	4.10
What are the key psychological implications (e.g., stress, wellbeing, etc.) of GAI for HT employees?	4.03
To what extent does the use of GAI improve customer engagement, satisfaction, loyalty, and brand image, and what are the factors that moderate and mediate these relationships?	3.93
To what extent does GAI affect the present task definitions and job descriptions in the HT industry? How does it change the nature of work for various types of HT employees?	3.93
What are the potential implications of GAI for perceptions of job security?	3.93
To what extent does the use of GAI influence consumers' information search, decision making, and purchase behaviors in the pre-, during-, and post-trip stages?	3.90
To what extent are current HT employees and managers willing to use GAI?	3.87
To what extent do the drawbacks and limitations of GAI affect HT stakeholders, particularly in the context of legal ramifications?	3.83
What are the key organizational outcomes (e.g., engagement, productivity, inter-department collaboration, etc.) of GAI from an employee perspective?	3.83
Are consumers willing to pay more for HT experiences that have been customized by GAI and if so, how much more?	3.77
How do consumers perceive credibility, trustworthiness, and persuasiveness of online reviews produced by GAI versus humans?	3.77
Which other stakeholders apart from customers and employees are most important for HT firms to prioritize for value co-creation?	3.63

Note. *Mean importance scores based on ratings provided by the 30 authors on a scale of 1 = *not at all important* to 5 = *extremely important*.

managerial implications of GAI for HT stakeholders. From a theoretical perspective, while we presented a comprehensive and integrative conceptual framework that explains the reciprocal value co-creation and value co-destruction process through the mediating REFLECT factors from a HT stakeholder perspective, future research is needed to examine each component of the REFLECT factors and its effect on the relationship between the application of GAI and HT stakeholders in greater detail. We also illustrated the reciprocal value co-creation and value co-destruction process with detailed examples. However, future research is necessary to delineate this reciprocal process in the context of each GAI application.

Furthermore, the effects of GAI applications to the HT industry, consumers, employees, firms, suppliers, and other stakeholders should be further assessed utilizing alternative theories and conceptual frameworks. One such theory might be disruptive innovation theory (Christensen, 2013), where GAI might very well be considered as a disruptive innovation for the HT industry. The Technology Acceptance Model might be utilized to explain the implications of GAI and whether HT stakeholders would be willing to use GAI in the HT industry (Arici et al., 2023; Davis, 1986). In the context of GAI's impact on employment, Leader-Member-Exchange theory might be appropriate to investigate GAI's impact on employment issues. Alternatively, qualitative work may need to be conducted to conceptualize new theories to understand this new work dynamic that incorporates GAI applications. The focus of GAI adoption should be on enhancing tourists' well-being through tourism experiences, and communities' quality of life through efficient tourism development (Uysal et al., 2020). Therefore, future research is necessary to investigate the extent to which widespread GAI adoption may affect quality of life.

In this study, much of our discussion was primarily focused on the short-term, immediate applications of GAI adoption. However, the extent to which GAI applications can contribute to the corporate social responsibility efforts of HT stakeholders requires further attention and investigation. GAI's role in enhancing the environmental, social, and governance (ESG) issues in HT firms and beyond needs to be analyzed and discussed in future research. ESG and various sustainability, societal marketing, and corporate social responsibility issues demand a long-term view (Dogru et al., 2022). Therefore, the extent to which HT firms can utilize GAI as a practical tool to enhance long-term welfare and social good for customers and other stakeholders, is one of the most important avenues for future research.

Empirical investigations of the effects of GAI on the HT industry will shed more light on the practical and policy implications of GAI adoption. Utilizing stakeholder theory, disruptive innovation theory, Leader-Member-Exchange theory, the Technology Acceptance Model, the Unified Theory of Acceptance and Use of Technology, and so on, future studies should develop GAI-specific scales, operationalize the constructs, collect data, and empirically and extensively

analyze the effect of GAI on HT stakeholders. Specifically, future research is needed to investigate the value of GAI-enabled experiences and to examine whether an optimum level of GAI-enabled experience exists that provides a higher level of satisfaction for consumers, employees, and other stakeholders. Also, the effect of GAI applications might be different across different service segments in the HT domain. While GAI might be well perceived and needed in economy scale hotels or fast-food restaurants, luxury hotel guests and fine dining restaurant patrons might seek more human interaction. Indeed, luxury in the future could include the ability to interact with humans versus GAI only. As former Loews Hotels President and CEO Kinsell (2022) once stated, "Service comes from a manual; hospitality comes from the heart." This noble expression provokes an important question in this new age: Can technology, like GAI, even without heartbeats, deliver heartfelt hospitality? This important question should be investigated in a comprehensive manner utilizing qualitative and quantitative methodological approaches. Also, analyzing the problems that such adoption may cause to HT stakeholders will be necessary as companies start adopting GAI extensively in the HT industry.

To further explore the potential benefits of GAI for HT firms, future studies need to examine the potential cost-effectiveness of investing in the GAI ecosystem and to test whether GAI-related platforms help achieve better financial gains. Future research needs to delve into the economic aspects of the implementation of GAI in companies and assess the actual impacts of GAI on companies' revenue, costs, productivity, and competitiveness. There are also risks associated with GAI, including data breaches, bias, discriminatory behavior, and the potential for decreased human interaction. Hence, the risk component of GAI can be evaluated in future research endeavors to see the best ways to mitigate these risks and create corresponding strategies. Although ethical and legal implications have been discussed in detail in this study, context-specific ethical and legal implications of GAI, such as privacy, security transparency, accountability, biases and stereotyping, and intellectual property rights, are the key areas to be analyzed further.

GAI has important implications for HT research and education as well; however, for GAI initiatives to be successfully implemented in creating value for stakeholders, HT research and education institutions need to strategically integrate GAI as an aiding tool for research, teaching, and education, by developing clear policies and guidelines for scholars, educators, and students in utilizing GAI. Further research is necessary to investigate the implications of GAI for research and higher education in HT.

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