Balancing Technology and Human Touch: Managerial Insights on Digital Integration in Hotel Service Processes

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Abstract

This study aims to investigate the integration of digital technologies into service processes by hotel managers, while ensuring a balance with human interaction. Data were collected through semi-structured in depth interviews with 12 hotel managers and department managers, exploring digitalization challenges and impacts. Participants, selected via purposive sampling, had 5+ years of experience in implementing digital services across diverse hotel categories. The study emphasizes that while digital technologies improve efficiency in the hospitality industry, human interaction is crucial for providing emotional and personalized guest experiences. Hotel managers are implementing hybrid models that integrate automation with personal service to address diverse guest expectations. Consequently, staff roles are evolving to necessitate both digital competence and emotional intelligence. Despite the advantages, challenges remain, including data privacy issues, staff adaptation, and ethical concerns regarding over-automation.

Key Words: Hotel Digitalization, Human Interaction, Hospitality Technology, Hybrid Service Model

Track: Technological Human-Centered Innovations

Focus of Paper: Theoretical/Academic

Introduction

The integration of digital technologies into hotel service processes has significantly transformed the structure and delivery of hospitality experiences. Tools such as mobile applications, digital check-in kiosks, AI-driven systems, and contactless payment options have been widely adopted to enhance operational efficiency and improve guest satisfaction (Ivanov and Webster, 2019; Avula and Sithole, 2024). However, as digitalization advances, a critical concern arises: the maintenance of meaningful human interaction, which has traditionally been central to personalized hospitality service (Castillo-Picon et al., 2023). In this context, managerial perspectives are essential in shaping digital transformation strategies, as hotel managers are tasked with aligning technological implementation with guest expectations, employee roles, and overall service quality.

Despite the increasing interest in digitalization within the hospitality sector, the literature indicates an ongoing debate regarding the balance between automation and the human touch. Some studies (e.g., Anwar et al., 2024; Buhalis and Leung, 2018).) underscore the efficiency, speed, and convenience afforded by digital systems, while others (e.g., Bhardwaj et al., 2025) caution against the potential loss of emotional connection and personalized service that can accompany reduced human interaction. There is conflicting evidence concerning guest preferences; certain demographics are embracing self-service technologies (Hole et al., 2023), while others continue to prioritize face-to-face communication and empathetic engagement from staff (Arora et al., 2024). Moreover, the implications of digital transformation on employee roles and organizational culture have not been consistently addressed, leading to a fragmented understanding of how technology influences service dynamics.

This study addresses a significant gap in the literature by focusing specifically on hotel managers' experiences and strategies for balancing technology and human interaction during digital integration. While prior research has examined either the technological or human aspects of service delivery in isolation, there has been limited attention to how these elements are reconciled in practice. By investigating how managers perceive, implement, and respond to digitalization in actual hotel environments, this study provides insights into the strategic decisions, operational challenges, and ethical concerns that shape the future of hospitality service. It contributes to a more nuanced understanding of digital transformation by elucidating the managerial logic behind hybrid service models that seek to maintain both efficiency and emotional engagement. In this context, the main research question (RQ) of the study is as follows:

RQ: How do hotel managers balance technology and human interaction during digital integration in hotel service processes?

Theoretical Background

Digital Transformation in Hospitality

The digital transformation of the hospitality industry has accelerated significantly in recent years, driven by rapid technological advancements and evolving consumer expectations influenced by broader digital trends. This transformation is propelled both by the introduction of new tools and by the changing behaviors and preferences of guests, who increasingly seek seamless, efficient, and personalized experiences throughout their journey. Central to this transformation is the increasing adoption of a diverse array of digital technologies aimed at streamlining processes and enhancing the guest experience. These technologies include mobile applications facilitating remote booking, check-in, and service requests; self-service kiosks that minimize wait times and improve operational efficiency; artificial intelligence (AI)-powered chatbots offering instant, round-the-clock customer support; contactless payment systems that enhance safety and convenience; and robotic assistants that automate routine tasks, allowing staff to concentrate on more complex guest needs (Castillo-Picon et al., 2023; Tussyadiah, 2020). Each of these innovations plays a significant role in reshaping the service delivery landscape by increasing accessibility, speed, and personalization.

The Technology Acceptance Model (TAM), originally developed by Davis (1989), serves as a foundational theoretical framework for understanding user perceptions and the adoption of digital innovations. TAM asserts that two primary factors—perceived usefulness (the extent to which an individual believes that utilizing a technology will enhance their job or task performance) and perceived ease of use (the extent to which an individual believes that utilizing a technology will require minimal effort)—influence the behavioral intention to adopt new technologies (Tahar et al., 2020). These factors significantly impact acceptance and usage behavior, particularly in hospitality contexts, where guests' willingness to engage with digital tools can profoundly affect their overall experience.

In the hospitality sector, perceptions of usefulness and ease of use are intricately linked to the functionality of technology and its capacity to enhance both the guest experience and operational efficiency. For instance, a mobile application that streamlines room booking and offers personalized recommendations is likely to be regarded as more useful and user-friendly than a generic platform. Additionally, contactless payment systems minimize friction during checkout and address health and safety concerns, thereby increasing perceived value among users (Castillo-Picon et al., 2023; Tussyadiah, 2020). Research indicates that when these perceptions are

favorable, guests are more inclined to adopt digital solutions, ultimately resulting in higher satisfaction and loyalty. Furthermore, digital transformation in the hospitality industry encompasses not only front-end customer interactions but also back-end processes, including inventory management, revenue optimization, and workforce scheduling. The integration of big data analytics and artificial intelligence in these areas empowers hotels to make data-driven decisions that improve operational agility and responsiveness to market trends. This comprehensive adoption of digital technologies emphasizes the complexity and multi-dimensional nature of digital transformation, illustrating that successful implementation necessitates a coordinated effort across all organizational levels (Castillo-Picon et al., 2023; Tussyadiah, 2020).

The Balance Between Technology and Human Interaction

The hotel industry is fundamentally service-intensive and emotionally driven (Kumar et al., 2024), characterized by highly personalized interactions, genuine empathy, and substantial guest-staff engagement. These attributes differentiate hospitality from many other sectors and underscore the essential role of human connection in providing exceptional service. This reality raises critical considerations regarding the extent to which automation can or should supplant interpersonal communication, particularly as emotional rapport significantly influences guest satisfaction and loyalty. The Service-Dominant (S-D) Logic, as articulated by Lusch and Vargo (2014), serves as a valuable theoretical framework by positing that value in services is co-created through collaborative interactions between providers and consumers. In the context of hotels, human interaction is the primary vehicle for delivering emotional value and crafting memorable experiences (Kandampully et al., 2018). Guests often seek not only functional service but also warm, attentive engagement that demonstrates understanding and care. Consequently, while digital technologies can enhance operational efficiency and reduce costs, there exists a substantial risk that an over-reliance on automation may undermine the relational and emotional facets of hospitality if not implemented with careful consideration.

To address this tension, the "high-tech, high-touch" approach has gained significance. Grounded in Naisbitt and Bisesi's (1983) sociotechnical framework, this concept posits that effective service delivery in contemporary contexts necessitates a deliberate balance between technological efficiency and human empathy. Within the hospitality sector, this has resulted in hybrid service models that integrate automation to enhance speed and convenience, while simultaneously preserving the essential human interaction that guests value (Mandic and Savic, 2025). Practical examples include digital check-in systems complemented by personalized concierge assistance, as well as AI-driven recommendation engines paired with tailored human communication. Empirical research indicates that such combinations effectively address diverse guest preferences and situational needs, ultimately enhancing both operational performance and customer satisfaction (Wirtz et al., 2018).

Managerial Roles in Digital Transformation

From an organizational perspective, digital transformation signifies a technological shift and a significant strategic and cultural evolution that requires active and intentional managerial engagement. Theories on organizational change and innovation management highlight the essential role of leadership in successfully navigating these transitions. Effective managers play a crucial role in alleviating employee resistance, promoting acceptance of new digital tools, and ensuring that the integration of technology is consistent with the organization's established service values and culture (Bozkus, 2023; Dega, 2024). Utilizing frameworks such as Kotter's (1996) change model or the Technology-Organization-Environment framework can enhance the theoretical foundation by offering structured insights into how managers can effectively drive and sustain digital transformation in practice.

Hotel managers serve as key decision-makers tasked with selecting technologies that align with their operational context and service objectives. They are instrumental in redesigning service delivery processes to improve both efficiency and guest satisfaction (Somera and Petrova, 2024). This strategic oversight involves balancing automation with the indispensable human touch, which is crucial in the hospitality industry. As digital tools are implemented, managers must also navigate substantial changes in job roles, ensuring that employees adapt to new responsibilities. Automation frequently transitions tasks from routine, manual activities to more complex, guest-oriented interactions, necessitating a redefinition of roles within the workforce. To facilitate this

transition, managers must implement comprehensive training programs aimed at enhancing digital competencies among employees. Continuous education and support will enable staff to effectively utilize new technologies, maintain high service quality, and gain confidence in their evolving roles. This aspect of workforce development is essential for preventing skill gaps and ensuring a smooth transition during the digital transformation process.

In addition to operational and strategic considerations, ethical challenges represent a significant aspect of managerial responsibility. Managers must address complex issues, including data privacy, ensuring that guest information is safeguarded and that digital interactions adhere to consent regulations. Furthermore, the potential displacement of employees due to automation raises concerns regarding job security and organizational justice. Ethical leadership necessitates transparent communication, responsible decision-making, and the formulation of policies that harmonize technological advancement with social responsibility. Despite the multifaceted challenges facing the hospitality industry, much of the existing research has primarily concentrated on technological capabilities or customer perceptions in isolation. There is a significant gap in understanding how hotel managers, as key implementers, perceive and manage the interplay between digital technologies and human interaction in daily operations. This managerial perspective is essential for comprehending how theoretical frameworks translate into practical strategies that effectively integrate technology while maintaining the human-centric essence of hospitality service. Therefore, this study advances existing theory by offering empirical insights into how managers strategically navigate the complexities of digital transformation in hospitality, with the objective of achieving both operational efficiency and personalized guest experiences.

Material and Method

This study utilizes a qualitative research design to investigate how hotel managers perceive and manage the integration of digital technologies within service processes while preserving human interaction. A qualitative approach is deemed suitable due to the exploratory nature of the research and the objective of obtaining comprehensive insights into managerial experiences, perceptions, and strategies that may not be adequately captured through quantitative methods.

The interview questions were formulated based on a thorough review of relevant literature concerning digital transformation in the hospitality sector, service quality, and human-technology interaction. The objective was to create open-ended questions that would encourage hotel managers to share in-depth narratives about their experiences and strategies related to digitalization. The question design was informed by the study's conceptual framework, particularly the interplay between technological efficiency and human-centered service. Key themes - including types of digital tools, perceived impacts on service processes, reactions from guests and employees, ethical considerations, and managerial adaptation - were extracted from previous studies and theoretical models, such as the Technology Acceptance Model (TAM), Service-Dominant Logic, and the high-tech/high-touch service paradigm.

Data were collected through semi-structured in-depth interviews, which provided the flexibility to further explore specific themes as they emerged during the discussions. The interview protocol included seven open-ended questions, concentrating on the types of digital technologies utilized, their impact on service delivery, responses from both guests and employees, the perceived significance of human interaction, strategic balancing practices, and challenges encountered throughout the digitalization process. Interviews were conducted via video conferencing platforms, based on the availability and preferences of the participants. Each interview lasted between 30 and 60 minutes and was audio-recorded with the consent of the participants. Purposive sampling was employed to select participants who hold managerial positions across various hotel types and categories. Participants were required to have a minimum of five years of professional experience in the hospitality industry and to be actively involved in the implementation or management of digital services. This criterion ensured that participants possessed the relevant knowledge and firsthand experience necessary to effectively address the research questions. Profile of hotel management professionals interviewed given in Table 1.

Table 1. Profile of Hotel Management Professionals Interviewed

Part. ID	Position	Mission (Responsibilities)	Experience (Year)	Hotel Type & Category
1	General Manager	All-Inclusive Hotel Management	20	All-Inclusive Hotel
2	General Manager	Full-Service Hotel Operations	30	Full-Service Hotel
3	Rooms Division Manager	Rooms Division Operations	15	City Hotel
4	General Manager	Overall Management	24	City & Resort Hotel
5	Operations Manager	Operational Oversight	14	Business Hotel
6	General Manager	Wellness Resort Management	25	City & Wellness Resort
7	Assistant General Manager	Budget Planning, Profitability	19	5-Star Hotel
8	Rooms Division Manager	Rooms Operations	10	Resort / Premium Hotel
9	Front Office Manager	Front Office Operations	21	Resort Hotel
10	IT Supervisor	Information Systems Management	5	Chain Hotel – Family Hotel
11	Manager (IT)	Information Systems Management	9	Chain Hotel – Family Hotel
12	General Manager	Overall Management	33	Full-Service Hotel

All interviews were transcribed verbatim and analyzed using thematic analysis. The analysis adhered to Braun and Clarke's (2006) six-step framework, which includes familiarization with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the final report. Coding and analysis were conducted manually, with recurrent themes identified to uncover common patterns and variations across managerial perspectives. To enhance credibility, member checking was implemented by sharing summaries of the findings with participants for validation. Although data saturation was reached after conducting 12 interviews, the adequacy of this sample size was further supported by tracking theme recurrence across interviews. A coding log was maintained to monitor the emergence of new codes, and after the 10th interview, no substantial new themes were identified, indicating saturation. The consistency of themes across participants suggests that the collected data sufficiently captured the key patterns relevant to the research questions.

Results

Digital Technologies Adopted in Hotels and Their Operational Impact

The hotel managers interviewed underscored the diverse array of digital technologies adopted within their properties and their impacts on operational efficiency and guest satisfaction. Frequently cited technologies included self-check-in kiosks, mobile applications, and AI-driven personalization systems, which facilitate streamlined check-in processes, enable contactless service requests, and provide customized guest experiences. Several participants highlighted the use of smart room controls, digital keys, and QR-code menus to enhance convenience while alleviating staff workload. Operational tools such as Team Jet for staff coordination, Hoteza Smart TV for upselling, and automated systems like Restoplace for restaurant bookings were recognized for their contributions to backend efficiency. Nevertheless, challenges such as high implementation costs, cybersecurity risks, and the potential erosion of human interaction were acknowledged. Some hotels reported delays in the adoption of certain technologies, including digital keys. Participants concurred that digitalization optimizes time, reduces errors, and enhances guest satisfaction, while emphasizing the necessity of balancing automation with personalized hospitality.

The Indispensable Role of Human Interaction in Hospitality

Despite the rapid digital transformation within the hospitality industry, all interviewed hotel managers unanimously agreed that human interaction remains indispensable for guest satisfaction. Participants emphasized that while technology enhances efficiency, it cannot replicate the emotional connections, empathy, and personalized service provided by human staff. A key theme was the cultural aspect of hospitality where face-to-face communication and warmth are highly valued (P2, P9). Participants noted that guests still expect to be addressed by name, greeted with genuine smiles, and offered tailored recommendations (P1, P3). Human staff

excel in interpreting subtle cues, such as tone and body language, to anticipate needs, such as surprising a guest with their preferred drink (P3). Critical situations further underscore the irreplaceability of human interaction. Handling complaints, resolving conflicts, or accommodating special requests requires empathy, creativity, and flexibility—qualities that technology lacks (P1, P4, P11). For instance, P8 described how a simple warm welcome can make guests feel valued in ways that "no digital system can achieve." However, participants acknowledged a generational and segment-based divide. While luxury and resort guests prioritize a personal touch (P6, P12), budget travelers may prefer contactless options for routine transactions (P12). The future, as P12 noted, lies in balancing automation for efficiency with human intervention for high-touch moments.

Hybrid Strategies Combining Digital and Human Services

Hotel managers implement meticulously designed hybrid strategies to combine digital efficiency with the invaluable element of human interaction. A prevalent approach involves providing guests with the option of self-service technologies alongside staff-assisted services. For example, (P1) and (P2) offer mobile applications for independent transactions while ensuring staff are available for personalized assistance. This dual-channel model acknowledges individual preferences, with certain hotels, such as P1's property, utilizing CRM systems to monitor and anticipate guest service preferences. Several participants emphasized the "moments that matter" philosophy (P3, P6, P12), where technology is used to manage routine tasks (such as check-ins and payments), allowing staff to concentrate on high-impact interactions. P3 described equipping employees with tablets to merge technological efficiency with human warmth, for instance, using digital tools to highlight local attractions while providing personal recommendations. P6 noted that food ordered via the app is delivered by staff who add a human touch, ensuring that service is both efficient and personal. Training is essential in maintaining this balance. P1 mentioned the importance of regular staff training to ensure that technology enhances rather than detracts from hospitality, while P12's team leverages guest data from applications to anticipate needs (such as preferred pillows) prior to arrival, effectively combining digital insights with human execution. However, the implementation of these strategies varies based on property readiness and guest demographics. P5's hotel reported only a 20% adoption rate of their new Hoteza ordering system, with the majority of guests favoring traditional room service. Conversely, P4's property, which lacks digital tools, relies entirely on human interaction, highlighting that the balance is context-dependent. As P7 succinctly articulated, digital tools are restricted to "routine, repetitive tasks," preserving the "human social essence" for meaningful interactions. The consensus is clear: successful hospitality does not rest on choosing between technology and personal touch, but rather on integrating them to enhance both efficiency and emotional connection.

Guest and Staff Perspectives on Contactless Services

The implementation of contactless services, including QR menus, mobile payments, and digital check-ins, has garnered predominantly positive feedback from both guests and hotel staff, albeit with notable generational differences in adoption. Younger guests and business travelers have readily embraced these technologies for their convenience, speed, and perceived hygiene benefits, particularly in the post-pandemic era. Many users appreciate the control and efficiency these solutions offer, with some establishments reporting a 90% adoption rate of contactless payments in food and beverage outlets. Conversely, older guests often require assistance or prefer traditional service methods, underscoring the necessity for hybrid approaches that accommodate varying preferences. From the staff perspective, employees generally welcome the operational efficiencies provided by contactless systems, which reduce paperwork and repetitive tasks while allowing for more meaningful guest interactions. A minority of staff express concerns regarding a diminished personal connection with guests; however, most recognize that technology can enhance, rather than replace, human service when appropriately balanced. Properties that maintain flexibility by offering both contactless and conventional service options report the highest satisfaction levels among guests and employees alike, demonstrating that successful implementation relies on catering to diverse user preferences while preserving the human essence of hospitality.

Changes in Staff Roles and Skill Requirements

The digital transformation in the hospitality industry has significantly reshaped staff responsibilities, integrating traditional hospitality skills with new technical competencies. Employees are now required to possess digital literacy to effectively operate mobile applications, CRM systems, and contactless technologies, leading many establishments to implement targeted training programs (P1, P2, P8). For example, front desk roles have evolved to encompass troubleshooting digital keys and assisting guests with QR menus (P3), while housekeeping staff are responding to app-based cleaning requests (P3, P5). Notably, automation has shifted the focus from routine tasks to personalized service. Staff members liberated from repetitive duties—such as manual check-ins or paper-based orders—now prioritize emotional engagement, problem-solving, and anticipating guest needs (P1, P6, P12). For instance, room service teams, which have been streamlined due to app-based ordering, are able to concentrate on delivery and adding personal touches (P5). However, challenges remain. Some employees experience initial difficulty in adapting to dual systems (P11), while others emphasize the importance of balancing technological efficiency with human warmth (P7, P9). Recruitment practices now favor candidates with digital proficiency (P7, P10), reflecting the industry's shift toward hybrid skill sets. While technology manages logistics, employees continue to be essential in conveying the human essence of hospitality (P11, P12).

Challenges and Ethical Considerations in Digitalization

The transition to digital operations within the hotel industry has introduced several significant challenges and ethical dilemmas. Data privacy and cybersecurity have emerged as the primary concerns, prompting hotels to implement stringent measures such as General Data Protection Regulation (GDPR) compliance (P1), encryption (P2), and comprehensive staff training to safeguard guest information (P8). However, vulnerabilities remain, particularly in the integration of third-party systems (P3) and the management of payment data (P12). Employee adaptation presents another considerable challenge. While younger staff members quickly embraced new technological tools, older employees often required extensive training (P1, P3). Some properties experienced resistance stemming from a general distrust of technology among both staff and guests (P5, P9), with guests occasionally opting for in-person transactions for perceived security (P5). Technological reliability is also critical to operations. Infrastructure gaps, such as unstable internet connectivity or system outages, have disrupted hotel services, necessitating the development of backup solutions (P8). Additionally, legacy systems frequently struggle to integrate with new platforms, resulting in operational inefficiencies (P3). Ethically, the risks associated with over-automation are significant. Hotels must balance the need to preserve human connection (P1, P6) with the potential for "service exclusion" of less tech-savvy guests (P3). Environmental concerns, including e-waste generated from frequent technology upgrades, also warrant attention (P3). Ultimately, the success of digitalization in the hotel sector will depend on effectively addressing these challenges while upholding the core values of hospitality (P11).

Future Outlook: AI, Automation, and Human Roles

Hotel managers anticipate that AI and automation will significantly enhance service efficiency while reshaping, but not replacing, human roles in the hospitality sector. AI-driven tools, such as smart booking systems, chatbots, and automated responses, are expected to manage routine tasks—thereby reducing wait times, minimizing errors, and personalizing guest experiences (P1, P4, P8). This evolution will enable staff to concentrate on high-value interactions, including resolving complex issues and fostering emotional connections (P2, P6). However, participants unanimously agreed that human interaction remains irreplaceable, particularly in luxury and culturally sensitive markets (P2, P8, P11). While AI can streamline operations (e.g., voice-controlled rooms, automated check-ins), it lacks the empathy, intuition, and adaptability necessary for nuanced guest interactions (P1, P7). For example, while AI may expedite reservations, a warm welcome or effective conflict resolution requires human judgment (P3, P12). The future lies in augmenting human service with AI, rather than replacing it. As P8 noted, technology should *"support, not supplant, the essence of hospitality."*

Table 2 synthesizes key findings from seven research questions, illustrating how hotels navigate digital adoption while maintaining a human-centric service approach. It highlights operational impacts, challenges, and strategic recommendations.

Table 2. Synthesizes Key Findings

Theme	Key Insights	Implementation Examples
Human Interaction Value	- 100% agree technology cannot replace emotional connection - Cultural priority - Luxury guests prefer personal touch	- Warm welcomes (P8) - Conflict resolution by staff (P3)
Hybrid Service Models	- "Moments that matter" approach - Self-service + staff assistance - CRM for guest preference tracking	- Mobile app + staff backup (P1) - Tablet-equipped concierges (P3)
Contactless Adoption	- 90% use contactless payments (F&B) - Gen Z adoption vs. elder guest resistance - Staff time savings on routines	- QR menus (P12) - Hoteza ordering (P5)
Staff Role Evolution	- New digital literacy requirements - Shift from tasks to emotional labor - Ongoing training critical	- Front desk tech support (P3) - App-based housekeeping (P5)
Implementation Challenges	- Top 3 hurdles: 1. Data security (GDPR) 2. Staff resistance 3. System outages - Over-automation risks	- Backup systems for outages (P8) - Dual-system training (P10)
AI Future Predictions	- AI will handle: • Routine tasks • Data analysis - Humans retain: • Emotional service • VIP/luxury care	- AI reservations + human check-ins (P12) - Chatbots for FAQs (P8)
Ethical Balance	- Must preserve human connection - Avoid "service exclusion" - Manage e-waste from tech upgrades	- Hybrid options for all guests (P6) - Sustainable tech policies (P3)

A proposal related to the hybrid service model is presented in Figure 1.

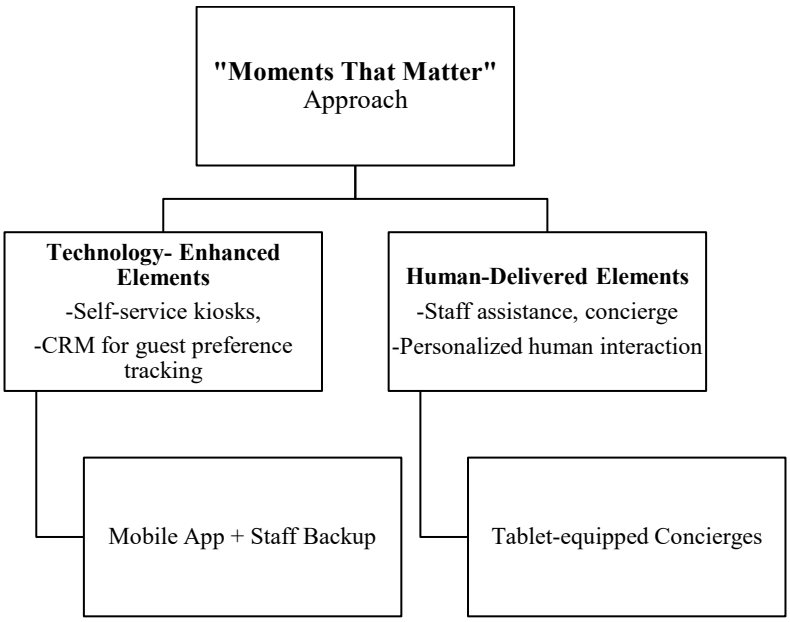

Figure 1. Hybrid Service Model

Conclusion

The findings provide a comprehensive understanding of digital transformation in the hospitality industry, highlighting a dual commitment to technological efficiency and human-centered service. Hotel managers universally recognized that while digital tools such as mobile applications, contactless payments, and smart room technologies enhance operational speed and alleviate routine burdens, they cannot replace the affective labor and cultural expectations inherent in hospitality. This duality aligns with socio-technical systems theory, which posits that technology serves not as a replacement for human roles but as a complement that reshapes service delivery. The human element retains significant symbolic and emotional value in the guest experience, reinforcing theories of emotional labor and service personalization. Practically, hotels are implementing hybrid service models that enable guests to choose between digital autonomy and personalized human interaction, thereby accommodating individual preferences and generational expectations. For example, providing both self-check-in kiosks and staffed reception desks allows properties to serve efficiency-driven business travelers while also catering to guests who appreciate traditional hospitality.

The transition to digital operations has redefined staff responsibilities, necessitating that employees possess both technological proficiency and emotional intelligence. This evolution of roles corresponds with job enrichment theories, whereby employees acquire new skills and autonomy, leading to enhanced engagement and performance. Digital literacy has emerged as a crucial hiring criterion, particularly for front-of-house positions, while specialized training programs enable staff to effectively navigate dual systems. As a result, employees are increasingly liberated from repetitive administrative tasks, allowing them to focus more on emotional engagement and personalized service delivery—both essential for guest satisfaction and loyalty. From a sectoral perspective, this indicates a broader shift towards "blended hospitality," where successful service relies on both technical infrastructure and human adaptability and soft skills.

Despite widespread optimism about digitalization, our findings reveal specific managerial challenges and complex decision-making processes that hotels face in its implementation. These include critical issues such as data security risks, system integration difficulties, and ethical concerns related to over-automation, which require managers to carefully balance technological advancement with guest privacy and service quality. Theoretical frameworks on digital ethics and the digital divide are particularly pertinent, as managers must navigate safeguarding sensitive guest data, addressing diverse technological competencies among staff and guests, and preventing the exclusion of less tech-savvy customers. Furthermore, infrastructure reliability problems and resistance to change—especially from older employees and guests—demand strategic leadership and adaptive change management. Notably, some properties have proactively developed contingency plans and resilience-building measures, illustrating managerial foresight grounded in organizational change theory. These insights contribute novel understanding by detailing how hotel managers actively negotiate the tensions between innovation, accessibility, and trust to sustain service excellence in a digitalizing environment.

Furthermore, it is prudent to acknowledge that corporate culture plays a crucial role in mediating this balance, as it shapes how employees internalize service values and integrate technology into personalized interactions. A strong service-oriented culture reinforces the importance of empathy, responsiveness, and authenticity, even as operations become increasingly digital. Thus, digital transformation is most effective when aligned with a corporate culture that prioritizes both innovation and the emotional essence of hospitality.

The most crucial connection between customers and employees lies in the ability to establish balance. A key element is achieving the right equilibrium between technology and the human touch. For example, while technology can facilitate check-ins and routine tasks, ensuring that staff are available for personalized interactions can foster a seamless and memorable guest experience. Managers should prioritize training, maintain flexibility, and continuously evaluate the impact of digital integration to ensure alignment with guest expectations and enhance overall service quality.

Looking ahead, hotel managers foresee that AI will enhance service personalization and backend efficiency, while remaining cautious about its limitations in high-touch contexts. AI is expected to manage bookings, inquiries, and room settings, whereas human staff will continue to oversee emotional and culturally sensitive

interactions. This trajectory aligns with augmentation theories in hospitality technology, which advocate for a partnership between AI and human service rather than a model of substitution. For practitioners, the implication is clear: investments in digital infrastructure must be complemented by investments in human capital and ethical frameworks. The findings suggest a future in hospitality characterized not by a dichotomy of human versus machine, but by a symbiotic integration where technology amplifies human warmth rather than displacing it.

While the purposive sampling method ensured that participants possessed relevant expertise and direct experience with digital service implementation, the study's findings are limited in their generalizability due to the relatively small and specific sample. The sample exclusively includes hotel managers with a minimum of five years' experience and active roles in digital management, which may exclude perspectives from other key stakeholders such as frontline staff, IT specialists, or guests, potentially narrowing the scope of insights. Additionally, the diversity of hotel types and categories represented, while broad, does not guarantee comprehensive coverage of the full spectrum of hospitality operations globally or regionally. This limitation restricts the applicability of results to other contexts, particularly smaller or independent hotels, emerging markets, or non-managerial viewpoints. Future research could benefit from larger, more varied samples and inclusion of multiple stakeholder perspectives to enhance representativeness and deepen understanding of digitalization impacts across the hospitality sector.

References

Anwar, F.A., Deliana, D., & Suyamto, S. (2024). Digital transformation in the hospitality industry: improving efficiency and guest experience. *International Journal of Management Science and Information Technology, 4*(2), 428-437.

Arora, H., Kiran, P.N., & Kumar, S. (2024). Recalibrating frontline service capabilities for five-star hospitality in a post-pandemic era. *Journal of System and Management Sciences, 14*(5), 31-51.

Avula, M., & Sithole, T. (2024). Artificial intelligence's potential to improve operational efficiency and customer experience in the hospitality and tourism sectors. In *Impact of ai and tech-driven solutions in hospitality and tourism (pp. 351-382)*. IGI Global.

Bhardwaj, S., Jain, V., Mahapatra, D., & Sindhwani, R. (2025). Exploring the dark side of ai and its influence on consumer emotion. *Journal of Consumer Behaviour, 24*(2), 529-544.

Bozkus, K. (2023). Organizational culture change and technology: Navigating the digital transformation. In *Organizational culture-cultural change and technology*. IntechOpen.

Buhalis, D., & Leung, D. (2018). Smart hospitality – Interconnectivity and interoperability towards an ecosystem. *International Journal of Hospitality Management,* 71, 41-50.

Castillo-Picon, J., Nagadeepa, C., Rani, I., Angulo-Cabanillas, L., Vílchez-Vásquez, R., Manrique-Cáceres, J., & Allauca-Castillo, W.J. (2023, May). Guest perception of technology vs. human interaction in hotel check-in process implication for service quality. In *International Conference on Business and Technology (pp. 81-95)*. Cham: Springer Nature Switzerland.

Davis, F.D. (1989). Technology acceptance model: TAM. *Al-Suqri, MN, Al-Aufi, AS: Information Seeking Behavior and Technology Adoption,* 205(219), 5.

Dega, S.C. (2024). *Influencing successful cloud technology adoption: the role of leadership styles in change management for SMEs* (Doctoral dissertation, University of Maryland University College).

Hole, Å.S., Mei, X.Y., Engh, B., & Engen, T.H. (2023). Self-Service Technologies (SSTs) and their implications on tourist experiences. In *Tourism and the experience economy in the digital era (pp. 69-82)*. Routledge.

Ivanov, S., & Webster, C. (2019). Adoption of robots, artificial intelligence and service automation by travel, tourism and hospitality companies – A cost-benefit analysis. In S. Ivanov & C. Webster (Eds.), *Robots, artificial intelligence and service automation in travel, tourism and hospitality (pp. 67-102)*. Emerald.

Kandampully, J., Zhang, T., & Jaakkola, E. (2018). Customer experience management in hospitality: A literature synthesis, new understanding and research agenda. *International Journal of Contemporary Hospitality Management, 30*(1), 21-56.

Kumar, M., Mamgain, P., Pasumarti, S.S., & Singh, P.K. (2024). Organizational IT support and knowledge sharing behaviour affecting service innovation performance: empirical evidence from the hospitality industry. *VINE Journal of Information and Knowledge Management Systems, 54*(2), 256-279.

Kotter, J.P. (1996). *Leading Change.* Harvard Business School Press, Boston.

Lusch, R.F., & Vargo, S.L. (2014). Service-dominant logic as a foundation for a general theory. In *The service-dominant logic of marketing (pp. 406-420).* Routledge.

Mandic, D., & Savic, I. (2025). The future of hospitality: Risks and challenges of implementing automated services. *SCIENCE International Journal, 4*(1), 79-85.

Naisbitt, J., & Bisesi, M. (1983). Megatrends: Ten new directions transforming our lives. *Sloan Management Review (pre-1986), 24*(4), 69.

Somera, F.A.R., & Petrova, K. (2024). A change management view on technology adoption in hotel organizations: a review and a conceptual framework. *Businesses, 4*(4), 791.

Tahar, A., Riyadh, H.A., Sofyani, H., & Purnomo, W.E. (2020). Perceived ease of use, perceived usefulness, perceived security and intention to use e-filing: The role of technology readiness. *The Journal of Asian Finance, Economics and Business, 7*(9), 537-547.

Tussyadiah, I. P. (2020). A review of research into automation in tourism: Launching the annals of tourism research curated collection on artificial intelligence and robotics in tourism. *Annals of Tourism Research,* 81, 102883.

Wirtz, J., Patterson, P.G., Kunz, W.H., Gruber, T., Lu, V.N., Paluch, S., & Martins, A. (2018). Brave new world: service robots in the frontline. *Journal of Service Management, 29*(5), 907-931.