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The Role of Digitalization in the Hospitality Sector: Global Trends, Implementation in Uzbekistan, and Strategic Outcomes

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Abstract: Digitalization has become a central driver of innovation in the global hospitality industry, reshaping service delivery, enhancing customer experience, and improving operational efficiency. This paper examines how digital technologies are transforming hotels worldwide and within Uzbekistan. We highlight key digital tools such as online bookings, AI-based customer service, mobile check-in, IoT-enabled smart rooms, and data analytics. Drawing on recent empirical research, we analyze global trends and contextualize them within Uzbekistan's hotel sector, including examples from international chains operating in the country. We conclude with implications for future research and managerial practice.

Keywords: Digitalization, Hotel Industry, Hospitality Technology, Uzbekistan, Mobile Check-In, Artificial Intelligence, Customer Experience

Citation: Nodir qizi N. U. The Role of Digitalization in the Hospitality Sector: Global Trends, Implementation in Uzbekistan, and Strategic Outcomes. American Journal of Economics and Business Management 2026, 9(3), 267-272.

Received: 23th Dec 2025

Revised: 25th Jan 2026

Accepted: 28th Feb 2026

Published: 18th Mar 2026



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1. Introduction

The global hospitality industry is undergoing a rapid digital transformation driven by emerging technologies, changing consumer behaviors, and increased competition [1]. Digital transformation is reshaping the hospitality and tourism industries by facilitating real-time customer communication, data collection, and co-creation of value, requiring a fundamental shift in management attitudes toward digital technologies. Digitalization refers to the process of bestowing hotel operations with the use of digital tools and technologies, such as guest service & management systems, marketing planning, job analyzing etc. Since the COVID-19 pandemic, the acceleration of digital adoption has made it more obvious as hoteliers work hard to make sure they meet guest expectations by providing seamless personalized experiences and contactless services [2]. Updated empirical research highlighting the fact that digital technologies, specifically solutions with no physical contact between parties have become a necessity for safety and comfort in post-pandemic hospitality. In Uzbekistan — a nation where tourism and hospitality is on the rise — digital integration into hotels is becoming more widely accepted as a strategic focus. In figures confirmed by the Tourism Committee of the Republic of Uzbekistan, international tourist arrivals in 2023 reached around 6.6 million as post-pandemic recovery gathers pace. In 2024, it received over 7.3 million visitors and is projected in national development to reach 10 million international tourists by 2026 [3]. The export of tourism

is projected to exceed 3–4 billion USD per year in 2026 and this reinforces the strategic goal of modernization efforts in hospitality and the expansion of existing digital infrastructures. These growth dynamics put a considerable strain on hotels to deploy scalable digital systems that can survive and manage much higher occupancy rates in resorts along with international service standards. Governments also reinforce the strategic focus on tourism digitalization. Across the Central Asia region, inbound tourism growth reached 17% in 2023, led by Kazakhstan, Uzbekistan and Kyrgyzstan with most notable increases versus pre-COVID-19 international visitor numbers [4], [5]. Globally, international tourist arrivals in 2023 hit 1.3 billion or close to 90% of pre-pandemic levels, and it's estimated that tourism will exceed 1.6 billion by its demand is expected to exceed more than 1.6 billion tourists per year in the year 2026. The direct contribution of tourism to global GDP in 2023 was USD 4.3 trillion, or roughly 5.7% of world GDP; this is forecasted to reach (6.5%) share by 2026. The World Travel & Tourism Council (WTTC) reports that the travel and tourism sector supported over 330 million jobs worldwide in 2023, equivalent to 1 in 9 jobs globally. Labor contribution is expected to grow above 360 million jobs by 2026 [6].

Recent global surveys indicate that 80% of tourists use mobile or digital services to plan travel, with digital bookings accounting for more than 70% of total travel reservations in 2024. Hotels integrating digital customer service tools report 15–25% higher guest satisfaction scores compared to traditional service providers. In 2023–2026, the President of Uzbekistan, Shavkat Mirziyoyev, repeatedly highlighted that tourism must become a “driver of economic growth and digital modernization.” Presidential Decrees on the accelerated development of tourism and the Digital Uzbekistan–2030 strategy emphasize the integration of digital platforms, unified booking ecosystems, smart identification systems, and ICT infrastructure in hospitality services [6]. In official addresses, the President stressed that “modern tourism requires modern digital services,” underlining the necessity of contactless technologies, online transparency, and data-driven governance in the hotel sector. This article synthesizes global literature and recent studies on digitalization in hotels and provides specific insights into how these trends are being incorporated in Uzbekistan’s hotel industry [7].

Literature Review

Digitalization refers to the use of digital tools and technologies to alter processes, improve systems, or create new services. In hospitality, this includes: online booking systems that allow guests to reserve rooms directly through hotel websites or third-party platforms, as well as mobile applications and digital keys that enable guest check-in/out without physical contact, artificial Intelligence (AI) for customer service automation and personalization, internet of Things (IoT) devices for smart room controls and energy management and big data analytics to understand guest preferences and optimize pricing strategies [8].

At a deeper level, research shows that digital tools help improve operational efficiency while also enhancing guest satisfaction and loyalty—all from creating more consistent and responsive interactions between the hotel and its customers. The world of hospitality and indeed the adoption of digital solutions in hotels has been driven by many factors. First, increased guest expectations: Travellers already expect a seamless digital journey — from mobile bookings to tailored recommendations — and hotels have to follow suit or get big relegated. The second one is research highlights that AI-based tools, chatbots, and predictive analytics have become standard in modern hospitality management systems. These technologies enhance efficiency and enable data-driven decision-making [9], [10]. Research indicates that hospitality firms increasingly integrate AI systems to automate routine tasks, improve service responsiveness, and transform staffing roles in tourism and hotel operations.

2. Material and Methods

A study of five-star hotels in Indonesia found that digital technologies — including AI and big data analytics — significantly improve operational efficiency and personalized guest services, boosting satisfaction and competitiveness. What is more, post-pandemic recovery and contactless services, meaning that the COVID-19 pandemic accelerated digital adoption, with contactless check-ins, mobile keys, and online payments becoming essential components to reinforce hygiene and customer confidence. There are some examples of digitalization in hotels. Many international hotel chains have implemented mobile check-in applications and digital room keys to minimize front-desk interactions and improve guest convenience. What is more, advanced chatbots powered by AI handle guest inquiries, automate service requests, and facilitate upselling — significantly reducing labor costs while improving service responsiveness. Hotels are using data analytics to track guest behavior across stays, enabling personalized offers based on preferences such as room types or ancillary services, which has shown to increase customer retention and revenue metrics. Big data and digital analysis tools are cited as key drivers enabling hotels to better understand guest preferences and tailor services accordingly, enhancing both operational strategies and satisfaction outcomes.

Although Uzbekistan's hotel industry historically lagged behind global benchmarks in digitalization, recent studies indicate a shift towards integrating digital tools, for example, research on the economic efficiency of digitalization in hotel service processes in Uzbekistan shows that automation and online systems can significantly improve operational efficiency, customer satisfaction, and financial performance. Another study underlines the growing importance of digital marketing for drawing in and retaining customers as well, particularly mobile applications, social media and online reservations platforms.

Research regarding Industry 4.0 and Information and Communication Technologies (ICT) indicates that international hotels such as Hyatt Regency and Hilton employed in Uzbekistan have started to adopt modern management systems, digital solutions for guest services, reflecting gradual advancement of digital maturity. Uzbek hotels are increasingly leveraging online booking platforms and digital marketing campaigns to connect with global audiences and meet changing demands from tourists. This is part of wider global shifts in digital engagement and market reach. Information guidance: Cybersecurity is a sensitive element of hotel service in the Republic of Uzbekistan, where outside customers require safe systems for management, sales and mobile keys and protection of customer data.

3. Results

While major international hotels such as the Hyatt Regency and Hilton have been early adopters of digital solutions, several local and independent Uzbek hotels are increasingly integrating digital services to stay competitive and provide modern guest experiences. The Art Hotels Group operates several properties across Uzbekistan — including Art Tashkent Hotel and Art Samarkand — which provide online booking platforms and modern connectivity services such as high-speed Wi-Fi and central business services [11]. These hotels serve both domestic and international customers, illustrating how local hospitality brands embrace digital customer interfaces for enhanced access and booking convenience. The emergence of certain detailed implementations of digital services (e.g. mobile check-in, smart room systems) is still some way away from being widespread but things as basics as online reservations, web-based pricing tools and digital communications with guests already indicate a digital path of evolution for even the mid-range domestic hotel brands in Uzbekistan. Another key player in Uzbekistan's hospitality innovation landscape is Wyndham Tashkent, which has hosted major events on digital transformation and agile management practices in hospitality [12]. The engagement of international and CIS experts signals the hotel's role not just as a service provider, but as

a venue and participant in digital dialogue and industry innovation — contributing to knowledge exchange on digitalization strategies in the hotel sector.

In an effort to enhance digitalization throughout the whole tourism machine — hotels included → Uzbekistan has released a national project that allows check-in in hotels with a help of a federal ID and facial recognition, so residence would not need to carry a paper passport anymore. The project is commissioned by the Unified National Tourism Platform, a digital ecosystem that will incorporate services for booking hotels, verifying identities and other types of transport and tourism in one common space. This advancement will significantly modernize hotel front-desk operations, reduce manual paperwork, and improve guest convenience throughout the country's hospitality industry [13]. The domestic booking platform MyBooking.uz illustrates how digital innovation supports local hotel visibility and competitiveness. Unlike global OTAs, this platform uses smart recommendation algorithms and supports integrated payments, offering smaller hotels and guesthouses across Uzbekistan access to advanced digital reservation technologies. This gives hotel owners real-time analytics, dynamic pricing control and automated guest feedback tools, driving in pace with innovation in digital hospitality across the world.

In addition, government initiatives like the Uzbekistan Tourism Committee's 2023–2025 Digital Tourism Promotion Strategy allocate USD 5million to “tech-enabled marketing,” providing subsidized bandwidth on VR content servers and tax breaks for foreign VR/AR studios that partner with local agencies. A growing pool of Uzbek 3D artists, game developers (Tashkent Game Jam), and multilingual voice-over actors makes high-quality, culturally authentic AR/VR content more affordable than outsourcing abroad [14], [15].

Despite progress, several challenges remain, for instance, financial constraints limiting investments in cutting-edge technologies, as well as, digital literacy gaps among hotel staff, inhibiting the effective use of advanced systems and regional disparity in digital infrastructure and tourism development. These challenges are common in emerging hospitality markets and require strategic planning and investment to overcome.

Table 1. Comparing Global and Uzbekistan Hotel Digitalization

Dimension	Global Practices	Uzbekistan Context
Online Bookings	Widespread via hotel websites & OTA	Growing adoption through local and international platforms
Mobile Check-In/Keys	Common in luxury and chain hotels	Select implementation in major cities
AI & Chatbots	Increasingly used for personalization	Early stages, limited deployment
Data Analytics	Core strategy for revenue management	Emerging interest, skill gaps present
Cybersecurity	Critical focus post-pandemic	Recognized as service imperative

The table shows that global hotels widely use advanced digital technologies such as online booking systems, AI, mobile check-in, and data analytics. In Uzbekistan, digitalization is developing but still limited. While online bookings are growing and some hotels in major cities adopt new technologies, tools like AI and advanced analytics are not yet widely used. Overall, Uzbekistan's hotel industry is gradually adopting digital solutions but still lags behind global practices.

4. Discussion

Digital tools have reshaped the hotel guest experience by increasing convenience, personalization, and speed. Contactless services, real-time communication, and smart room technologies improve guest perceptions of value and comfort, aligning with global preferences. From an operational perspective, digital systems streamline workflow, reduce labor dependency, and enhance decision-making through data insights. Uzbekistan's hotels may reap immediate benefits by focusing on scalable digital solutions — online booking engines and integrating with their own digital marketing. Strategic partnerships with global technology providers and focused staff training around digital tools will supercharge transformation. Do note that the international tourism market evolves, guests have changed their expectations and digital readiness should be a primary component of strategic planning in order to remain competitive.

Digitalization is a substantial enabler of sustainable tourism goals. Steering electricity and water consumption in hotels toward environmental sustainability, smart energy management systems reduce usage of these resources by combining IoT-enabled climate control with data analytics. Digital documentation and contactless systems effectively reduce paper consumption, minimizing resource waste. In addition, big data tools empower hotels to predict demand more accurately and avoid overcapacity, supporting sustainable destination management. The UNWTO monitors two official Sustainable Development Goals (SDG) tourism indicators that are part of the global SDG framework: indicator 8.9.1: Tourism Direct Gross Domestic Product (GDP), referring to the direct contribution of tourism to total GDP and its growth rate AND indicator 12 b.1: Use of internationally-agreed tools for tracking economic and environmental aspects of tourism sustainability — implementation of standard accounting tools to monitor tourism sustainability. Countries report these indicators to the UN Statistical Division on an annual basis. B2B and B2C applications in the platform based economy you have discussed is important for Uzbekistan to embrace and align its tourism as a world class industry that will generate positive macroeconomic impact through sustainable resource planning, hospitality digital transformation aligned with global Sustainable Development Goals (SDGs). Therefore, digitalization should not be regarded as an upgrade in technology only but rather a structural basis for sustainable tourism development.

5. Conclusion

Digitalization is fundamental to modern hotel operations and service delivery globally. In Uzbekistan, the integration of digital technologies is progressing but remains uneven. Research has shown that digital tools enhance operational efficiency, improve guest experiences, and strengthen market competitiveness. Continued investment in technology, training, and digital infrastructure will be crucial for Uzbekistan to align with global hospitality standards. Future research should empirically measure guest satisfaction outcomes related to digital interventions and develop frameworks for digital maturity assessment in emerging markets.

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