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DIGITALIZATION OF THE TOURISM AND HOSPITALITY SECTOR

Abstract. *The article examines the impact of digitalization on the tourism and hospitality sector, particularly in the face of modern challenges. The state of the industry in Ukraine in 2024 is analyzed, when, amid economic instability and the aftermath of the war, there was an increase in tax revenues and a gradual recovery of the tourism business. The key obstacles to the development of the tourism and hospitality sector in Ukraine are outlined, including the low level of digital technologies and insufficient infrastructure. The purpose of the study is to analyze the main benefits and barriers associated with the implementation of digital technologies in the tourism and hospitality sector. The task is to highlight the main prospects and challenges of using digital technologies, as well as to formulate a strategy for applying these technologies in the tourism market as a means of revitalizing the tourism and hospitality industry. To this end, theoretical, methodological and systemic approaches to the analysis of the source base, in particular, statistical data and scientific publications, are applied. The role of digitalization is considered, including the application of artificial intelligence, VR, AR, blockchain, Internet of Things and big data, green technologies and sustainable development technologies to the tourism and hospitality sector. A descriptive analysis of the level of digitalization of tourism and the possibilities of its further development was performed. The study identified key areas for implementing digital technologies in tourism and hospitality and their impact on the formation of more diverse and flexible offers in the tourism services market. It was concluded that the implementation of digital technologies contributes to the transparency and quality of tourism services, increasing the security of the industry, which has a positive effect on its profitability.*

Keywords: *digitalization, digital technologies, AI, virtual and augmented reality, blockchain, cloud technologies, green technologies, sustainable development.*

1. Introduction

At a time of deep uncertainty for the entire world and for many industries, in particular, the field of tourism and hospitality, one simple question arises: where to go next?

After several years of decline, the Ukrainian tourism business has begun to actively recover, despite numerous challenges. The tourism and hospitality sector in Ukraine consists of many industries that are closely linked to other sectors of the economy (industry, transport, construction, services, etc.), and is mainly represented by small and medium-sized businesses. 2024 was a turning point for the tourism industry, which suffered serious losses due to hostilities,

energy problems, and infrastructure destruction. In spite of public debates about the appropriateness of vacation during wartime, hotels and resorts became not only a place to restore strength, but also an important source of taxes. According to State Tourism Development Agency, in 2024, tourism activities contributed to the state budget UAH 2 billion 938 million in taxes. This is 43% more than in 2023, when revenues amounted to about UAH 2.049 billion. Compared to 2021, tourism revenue increased by 32%, which indicates a gradual return of the industry to pre-war indicators. In particular, the growth in tax revenues was provided by hotels, which paid UAH 1.954 billion, which is 66.5% of the total amount of taxes. In 2023,



this amount was UAH 1.304 billion, and in 2021 — UAH 1.289 billion [1; 2].

Thus, the tourism industry demonstrates remarkable resilience and has the potential to become an important source of financial revenue for the state in the future.

After the war, Ukraine has the potential to become a major tourist destination, but this will depend on stability in the country and the market. The post-war recovery of Ukraine's tourism and hospitality sector looks like a powerful challenge, but at the same time an opportunity for innovation and development of the country. All development scenarios — from rapid recovery to prolonged instability — require different approaches to investment, digital technology development, infrastructure and adaptation to new conditions [2].

Some of the key obstacles to the restoration and functioning of the tourism sector are: insufficient development of high-quality modern infrastructure, transport, hotel, MICE (meetings, conferences, other events; mainly concerns business tourism) and exhibition, etc.; insufficient development of information, digital technologies and communications and insufficient level of digitalization.

Digitalization is an important trend for modern business. After all, with and according to Gartner's definition, digitalization is the use of digital technologies to change the business model and create new opportunities for profit [3]. Businesses that do not implement digital technologies risk falling behind competitors and losing competitiveness.

Digitalization is the process of introducing digital technologies into all aspects of the tourism and hospitality industry. This includes the use of technologies such as the Internet, artificial intelligence (AI), machine learning and data analytics, etc.

Sector tourism and hospitality industry is experiencing an era of rapid transformation. Innovation, technology and sustainability play a vital role in creating a thriving and resilient industry. It is also worth highlighting the importance of tourism as a driver of cultural exchange, economic prosperity and environmental stewardship.

The travel and hospitality industries are among those industries that are already actively using innovative technologies, including AI, chatbots, VR and AR, blockchain, CleanTech, communication technologies, Internet of Things, BigData, sustainable development technologies and, according to experts, can get incredibly cool benefits from it.

Researchers often discuss: the potential benefits and challenges of the aforementioned technologies in this field; addressing security issues, in particular blockchain; increasing the efficiency and reliability of financial transactions; fostering innovation and improvement; creating new markets and opportunities in the tourism and hospitality industry; the state and implementation of digital technologies for tourism and hospitality in times of crisis and the era of digitalization; aligning digitalization with tourism and

hospitality business goals; customer expectations and market demands.

With the advent of digital technologies, the relationship between the tourism and hospitality sector and digitalization has become a hot research topic. As a result, a number of literature reviews on digitalization in tourism have been published, for example on: AI — Schorn K. [4] and Barten M. [5]; robotics — Barten M. [6] and Webster C. and Ivanov S. [7]; big data — Belias D., Malik S., Mantas C., [Rossidis I.](#) [8]; blockchain — Barten M. [9] and Gaponenko G. and Vasylenko V. [10]; VR — Barten M. [11] and Denzon D. [12]; AR — Barten M. [13]; IoT — Barten M. [14] and Tsukanova T. [15].

The proliferation of research related to digitalization and sustainable development in the tourism and hospitality sector has led to the emergence of a significant number of review articles: Sharpley R. [16]; [Rodrigues V.](#), Eusebio C. and Breda Z. [17]. Sharpley R. [16], reviewing recent changes in the understanding of the concept of sustainable development, as well as modern approaches to sustainable development, he highlighted the controversies surrounding the continued adherence to the principles of economic growth in development policy in general and tourism development; sustainable growth reduction as an alternative approach to development and specific implications for tourism. In particular, [Rodrigues V.](#), Eusebio C. and Breda Z. [17] conducted a review of multiple articles aimed at expanding knowledge on the opportunities presented by digital technologies, the impact of digital transformation in tourism as a driver of sustainable development, and identifying research gaps while suggesting future directions. The findings indicate that the tourism industry has yet to fully integrate the fundamental principles of sustainable development. Although digital technologies serve as valuable management tools, helping to bridge gaps and connect people and places — both physically and virtually — their adoption in tourism destinations and businesses remains in its early stages. This challenge is particularly evident in the sector's dominance by small and medium-sized enterprises, which often face limitations in human, financial, and investment resources, making it difficult for them to engage in the digital transformation process.

It is important to note that the digitalization of the tourism and hospitality sector remains a topic of debate, particularly regarding the opportunities and risks associated with the use of digital technologies. This study specifically aims to examine the perceived benefits and challenges of implementing digital technologies in the industry and to highlight potential directions for future research.

2. Materials and Methods

The main objective of the study is to improve our understanding of the impact of digitalization on the tourism and hospitality sector. The focus is mainly on the potential of digital technologies to create new

values and innovative processes in the digital landscape of tourism and hospitality. To achieve this, the study used methods such as: abstraction (to highlight the most essential aspects of technologies; to focus on key processes); analysis and synthesis (to study individual technologies and synthesize their cumulative impact; to identify the most effective technologies; as well as for decision-making on the effective application of digital technologies and effective investment in innovative technologies); grouping (to identify groups of enterprises implementing innovations). In this sense, the driving motivation is the potential of digitalization to improve business efficiency.

3. Results and Discussion

In 2023, the world witnessed the rapid growth of AI. Everyone is talking about AI these days, and it seems that if a company isn't into it, it's not trendy. The British dictionary Collins has named "artificial intelligence" the word of the year for 2023 [18].

According to GlobalData, the AI market is projected to reach \$383.3 billion in revenue by 2030. In the hospitality sector, the adoption of generative AI is becoming increasingly prominent among industry players. This trend is reflected in a report by SITA, which revealed that 97% of airlines are actively planning initiatives to integrate this technology. Artificial intelligence has significant potential to enhance the customer experience. IDC reports that hoteliers anticipate allocating over 40% of their AI investments next year to predictive AI. Additionally, 86% of airlines, in collaboration with innovation partners, have begun developing AI, machine learning, and computer vision technologies. Among them, 39% have already implemented these technologies, while another 47% plan to do so in the near future [15, 19].

For example, American consulting firm McKinsey recently stated in a report that artificial intelligence has the potential to add \$2–4 trillion in value added per year across various sectors. As for the tourism sector, it will grow by an average of 6% annually over the next 5–7 years thanks to AI. As proof: the share of travel companies' revenues impacted by AI worldwide increased from 9% in 2018 to 21% in 2021. And in 2024, it reached 32%. 25% of companies in the tourism and hospitality sector are already using various innovative technologies. According to report, the AI and hospitality market is expected to grow to over \$1.2 billion by 2026, with a growth rate of over 9.7% [19]. The expansion of this market is driven by several factors, including the swift advancement of infrastructure in airports, seaports, railways, hotels, highways, etc., combined with the introduction of advanced technologies.

The ability of artificial intelligence to perform tasks that traditionally required human cognitive functions has made it particularly useful for those working in the tourism and hospitality industry.

The adoption of AI offers businesses significant time and cost savings while reducing the risk of

human error and enabling tasks to be performed efficiently around the clock. Since exceptional customer service is crucial for hotels and resorts to maintain their reputation, AI can play a key role in enhancing personalization, tailoring recommendations, and ensuring prompt responses — even in the absence of staff. These include:

- Personalized travel recommendations. AI analyzes tourists' preferences and offers personalized options for activities, restaurants, and attractions;
- dynamic pricing: artificial intelligence algorithms monitor data in real time and adjust fares for flights and accommodation;
- Customer service chatbots handle inquiries, facilitate bookings, and offer support. This increases service efficiency and customer satisfaction;
- using AI in transportation to improve passenger safety, reduce road congestion and accidents, reduce carbon emissions, and minimize overall financial costs;
- implementation of artificial intelligence in the hotel sector goes beyond customer service chatbots and encompasses predictive analytics for demand forecasting and personalized guest experience.

The growth of AI-driven travel planning tools from leading companies such as Google, Meta, Expedia, Kayak, Booking.com, and WhatsApp is expected to persist. In July 2023, TUI Group introduced a ChatGPT-powered chatbot in its UK app, taking an initial step toward incorporating generative AI into its technology framework. Likewise, other hotel companies are adopting a similar strategy [15].

For example:

- Hilton has implemented AI-powered chatbots and virtual assistants to offer round-the-clock automated guest support, handling routine inquiries, personalized recommendations, and reservations. This innovation enhances convenience and contributes to a more seamless and autonomous guest experience;
- Additionally, in collaboration with IBM, Hilton introduced Connie, the first AI-powered concierge robot. Connie interacts with guests by providing information on hotel amenities, local attractions, and dining options. With each interaction, she learns and improves, enhancing guest engagement while also helping to reduce staff workload. Connie can answer over 10,000 frequently asked questions about reservations, hotel amenities, maintenance requests, local attractions, restaurant recommendations, and more. She can also alert hotel staff when she is unable to answer a request so they can respond [4];
- Hyatt has integrated AI-powered conversational interfaces into its contact centers, handling over 7 million calls annually. This advancement has significantly improved call processing efficiency, reducing operating costs by \$4.4 million per year while enhancing customer interactions through faster and more accurate responses;

- Additionally, Hyatt leverages AI to analyze guest data, enabling personalized recommendations and services. This technology helps tailor guest experiences — such as room preferences, dining options, and activity suggestions — enhancing satisfaction and fostering loyalty;
- Wyndham Hotels has incorporated an AI-driven messaging system into its operations, allowing guests to receive immediate responses to common inquiries during their stay. This enhances the guest experience while allowing staff to focus on more critical tasks;
- Furthermore, Wyndham's AI-powered guest engagement platform features intelligent mobile check-in and check-out, streamlining the process by verifying credit cards and IDs before arrival. This not only reduces wait times and minimizes fraud risk but also improves housekeeping efficiency by notifying staff when rooms are ready for cleaning. The system has also contributed to a 25% increase in positive reviews at pilot locations;
- Wyndham's AI-driven solutions incorporate predictive analytics for revenue management, leveraging market trends, competitor pricing, and demand forecasts to dynamically adjust room rates, maximize revenue, and enhance overall performance;
- Marriott tested concierge assistants with artificial intelligence, which can have natural conversations with guests in multiple languages. Bots can book services, provide suggestions for destinations based on guests' interests, explain loyalty programs, and much more [4].

Through the integration of AI across various aspects of their operations, these hotel brands have successfully: delivered highly personalized experiences (recommendations and services) to guests and hyperpersonalized marketing based on individual preferences, which is becoming increasingly sophisticated; reduced dependence on physical staff, taking pressure off overburdened customer service agents, enhanced operational efficiency, accelerated revenue growth, and established themselves as pioneers in the digital transformation of the hospitality industry.

According to a study by Revinate, 86% of consumers report that personalization in hospitality influences their purchasing decisions. This level of personalization can significantly increase guest satisfaction and loyalty [20]. As integration deepens, experts predict that it will allow even small hospitality providers to offer customized services.

The growing use of AI-based incentives, along with the use of advanced machine learning (ML) and behavioral science technologies, is helping managers make informed, better, and objective investment decisions, deliver value-added services with greater customer engagement and satisfaction worldwide. AI-driven prompts, which work as cybersecurity prompts in various industries, including tourism, help customers make better security decisions when visiting websites that are experiencing phishing attempts, malicious

content, frequent cyberattacks, or outdated software, and provide personalized recommendations for product selection in the tourism and hospitality industry [19].

For several years now, virtual reality (VR) has been playing an important role in tourism. There is a significant gap between the perception of service consumers and the current service offered by service providers. Customers at a distance are obviously not interested in tourist destinations and the travel experience in that destination. Hotel customers will observe the travel and discovery of tourist destinations before going to the tourist destinations. This is achieved by searching for useful information on the Internet in the form of user reviews, among others. VR technology creates a simulated world that provides a virtual reality experience. In the interactive realm, the 3D customer encounters the environment. The main limitations between the customer and the service provider are solved with this technology. Customers can enjoy the scenic beauty of natural resources, general infrastructure services, and tourist infrastructure destinations by watching augmented reality videos. In order to evaluate the choice of tourist destinations, users can gain detailed first-hand knowledge through VR technology. Travelers use virtual reality headsets to see themselves in specific cities, hotels, or resorts. They can research almost any destination in the world in advance before making a decision about whether to go there or not. VR also helps travelers explore hotel rooms and amenities before booking, making them more confident in their choice.

Augmented reality (AR) has a slightly different effect. Virtual reality seems to transport the user to another place, while augmented reality allows a person to get more detailed information about a particular place using applications on their smartphone. For example, you can point your smartphone at the door of a chosen restaurant and get reviews about it, or you can watch a video of a chef preparing your favorite dish.

AR also allows travelers to take virtual tours of hotels, resorts, museums, etc. to help them decide on their preferred vacation spot. With virtual tours, travelers can explore places without leaving their homes. This allows them to get a realistic idea of the attractions before booking. AR guides provide real-time information via smartphones. They enrich the sightseeing experience by adding cultural knowledge, historical facts, and navigational details to physical landmarks.

If a traveler is in a country whose language they have never even heard in their life, they can use a mobile application that can automatically translate all printed materials — menus, signs, newspapers.

The advantage of VR and AR in the travel industry is that they still have room to grow. The faster the technology develops, the more benefits it will offer users.

Travel companies analyze market trends using big data and analytics to forecast demand, optimize prices, adapt offerings to changing traveler preferences, and increase competitiveness.

Through big data analysis, companies learn who their customers prefer and why. For example, hotels can tailor their offerings to individual needs, such as room temperature, dietary requirements, or entertainment preferences. This allows you to provide personalized service and make customers more satisfied.

Big data and analytics are also used to optimize tourism: finding inefficiencies and improving resource utilization help reduce costs and improve the quality of services.

With the increasing number of travelers, it is important for service providers to differentiate themselves from overly personalized offerings by considering the tastes of visitors. The dynamic method of understanding guest expectations and monetizing the provision of personalized services to guests has progressed with the advent of data analytics. ML (Machine Learning) is an ideal environment for travel businesses to gain basic knowledge and improve operational productivity, meeting consumer needs with cost-effectiveness. A deep understanding of specific consumer needs allows customer service agents or communication staff to recommend products and services that are sure to appeal to the customer. This also contributes to the growth of the market.

Strategic use of data analytics to personalize guest experiences and dynamic pricing strategies is becoming a cornerstone of competitive differentiation in the hospitality industry. Technology packages, which combine AI and data analytics, will enable providers to optimize pricing, more accurately forecast demand, and tailor marketing strategies to individual guest preferences, paving the way for a more personalized and engaging guest journey. A 2023 Deloitte survey found that 85% of hotels using data analytics reported improved customer satisfaction and revenue [20]. According to a Workday report, 51% of hospitality leaders work with data that is at least somewhat siloed within their organization, underscoring the importance of integrated data systems [20].

With facial recognition and fingerprint scanning, travelers can bypass traditional check-in, reducing wait times and simplifying identity verification.

Biometric systems increase security: only authorized persons gain access to restricted areas, and the risk of identity fraud is minimal.

Hotels recognize repeat customers using biometric data and provide personalized service.

In recent years, blockchain technology has gained significant attention across various industries due to its potential to transform the way data is stored and utilized. It enhances transparency, security, and transaction efficiency. Blockchain functions as a public ledger where transactions between participants are recorded. Each entry, known as a “block,” is secured through cryptographic methods.

A key feature of blockchain is decentralization, meaning that information is transmitted through a peer-to-peer (P2P) network. Each block contains transaction details and a timestamp, and once

recorded, the data cannot be altered without the consensus of the entire network and modifying all subsequent blocks. These characteristics — decentralization, immutability, tamper resistance, and transparency — make blockchain more secure, reliable, and resilient against external interference, eliminating a single point of vulnerability [9]. According to a report on the blockchain technology market by Fortune Business Insights, the global market is expected to expand by 59.9% by 2030. In 2023, the market was valued at \$17.57 billion, rising to an estimated \$27.84 billion in 2024. By 2032, it is projected to reach \$825.93 billion, demonstrating a compound annual growth rate (CAGR) of 52.8% from 2024 to 2032 [19].

When it comes to the benefits of blockchain technology in the travel industry, stability and security play a crucial role. Due to its decentralized structure, blockchain ensures that information is never lost, whether due to accidental deletion or cyberattacks. This guarantees continuous availability and traceability of transactions [9]. Under normal circumstances, distinguishing fake passports from genuine ones remains a challenging task. However, with the introduction of blockchain technology, the fear of immutable records has been eliminated. Document verification on blockchain has proven itself with many features such as: immutable records, highest level of security, cheaper transactions, traceability, ownership verification, integrity verification, etc. The document verification process, which uses blockchain innovations and smart contracts, will simply allow the government and other authorized bodies to confirm that the identification process is valid and reliable.

The travel industry depends on seamless information sharing between various companies. For instance, travel agents exchange customer details with airlines and hotels, while travelers’ personal belongings are frequently transferred and tracked across multiple providers. Blockchain enhances the security and accessibility of this data by distributing storage responsibilities across the network, ensuring safer and more efficient management of essential information [9].

Blockchain serves as a guarantee of booking and payment security using smart contracts, reducing the risk of fraud. The booking process takes place transparently in real time without intermediaries.

Blockchain-based loyalty programs provide customers with a secure and transparent way to earn rewards and redeem them across platforms. Such programs increase customer engagement.

Identity services are extremely important to the travel industry. And blockchain could become the industry standard for storing this information, significantly reducing check-in times or queues at the airport, as a simple fingerprint or retina scan could replace showing documents.

Blockchain stores traveler data. This allows for real-time identity verification at checkpoints. Blockchain technologies that incorporate facial recognition offer seamless check-in at airports and all other stations

without any document verification by immigration, customs, etc. Facial recognition software not only offers seamless check-in but also provides digital privacy to visitors and ensures compliance with regulations through blockchain technology. This technology helps travelers avoid queues and fill out the check-in form at the check-in counter. With the help of such terminals, check-in, which usually takes three minutes or more, can be completed in less than a minute. Airlines are not only improving customer service through self-service options. The customer journey process supported by these technologies is positively influencing the growth of the market.

Therefore, the use of blockchain allows:

- during digital identity verification by secure storage of biometric data (e.g. fingerprints, retinal scans) to simplify the verification process, reduce check-in time and queues at the airport;
- securely manage documents (eliminates the need for physical documents, reducing the risks of loss and fraud) by keeping travel documents, visas and identity documents intact;
- during automatic check-in through integration with seamless traveler identification systems in hotels, airports, etc., improve customer interaction through faster and more seamless check-in, securely manage guest data and ensure clear transaction records. Technologies such as mobile check-in, digital room keys, and personalized services have made stays more convenient and enjoyable. According to the 2023 Hospitality Technology Report, 70% of guests prefer hotels that offer digital check-in [20];
- at border control through promoting secure, transparent cross-border identification processes to expedite immigration processes, increasing security and efficiency;
- personalize travel experiences and simplify loyalty program management by creating secure, immutable records of traveler preferences and loyalty points;
- facilitate safe travel and entry into different jurisdictions through health data that can be verified through the secure storage of medical records and vaccination statuses, for example against COVID-19 [9].

It's also quick to use a checkout using facial recognition technology. Travelers identify themselves by scanning their ID, taking a screenshot, and adding their contact information. The computer verifies their knowledge of identification and booking, and issues a room key. For example, Marriott has installed self-service kiosks in its Moxy brand hotels where guests are asked to swipe their credit card, after which the kiosk issues a key to their room.

Blockchain technology could be highly beneficial for monitoring luggage transfers, particularly on international trips. All of a traveler's personal belongings travel with them. Therefore, they are constantly being moved and transported from place to place. Thanks to blockchain, information about all luggage movements

will be available and up-to-date at any time. The use of a decentralized database greatly facilitates the exchange of tracking data between companies.

The Winding Tree platform is a prime example of blockchain-based luggage tracking that also incorporates a booking system. By eliminating third-party involvement, it enables seamless, secure booking and tracking while enhancing transparency [9].

One of the most significant applications of blockchain in the hospitality, tourism, and travel industries is in payments. Its versatility allows it to function as a global ledger, simplifying and securing bank transactions while also enabling travel companies to accept Bitcoin and other cryptocurrencies. A notable example is the BeeToken (Beenest) platform, which connects customers with hosts, facilitating seamless booking and payments without commissions. It also incorporates payment, reputation, and arbitration protocols to enhance user security. Similarly, the LockChain platform serves as a decentralized marketplace for hotels and hospitality businesses, managing payments, property listings, and other booking-related aspects while eliminating intermediaries and commission fees [9].

Additionally, many travel companies are adopting customer loyalty programs to encourage repeat business. Blockchain can streamline these initiatives by making loyalty points more accessible to customers and facilitating the distribution of digital tokens. Moreover, it enhances security by reducing the risk of fraud in loyalty programs.

Therefore, the application of Blockchain technology can help reduce fraud, human error, and provide an efficient and reliable platform for bookings, payments, rewards, and loyalty programs.

It is also worth mentioning the use of CleanTech technologies in tourism:

- the use of solar panels and waste recycling make the premises environmentally friendly, comfortable and do not harm nature;
- the use of environmentally friendly transport, in particular electric vehicles and alternative fuels, reduces carbon dioxide emissions, making travel safe for the environment;
- Intelligent energy management systems (EMS) at tourist facilities optimize energy consumption, reduce costs and environmental impact, i.e. energy-efficient tourism.

Cloud technologies allow businesses to store and process large amounts of data, as well as increase efficiency by automating business processes and expanding opportunities for customer interaction. In particular, integration with tour operators with cloud platforms allows for fast and accurate order processing, allowing customers to book rooms and tables online and receive confirmation in real time.

Cloud computing is enhancing travel companies' CRM systems, enabling them to analyze customer data and provide personalized marketing and services. Property management systems (PMS) integrate various functions such as reservations, billing, and

housekeeping, ensuring seamless operations. In 2023, a McKinsey study found that hotels using an advanced PMS reported a 30% increase in operational efficiency [20].

With cloud-based data analytics, travel companies can tailor travel packages and offer recommendations based on customer preferences.

Using communication technologies:

- tourists can quickly and securely pay for purchases using NFC technology;
- Wi-Fi in tourist destinations allows visitors to receive information and collect data for managing people flows and marketing strategies;
- Travel apps are leveraging 5G networks, private wireless infrastructure, beacon technology, and other tools to provide updates, location-based services, and personalized recommendations.

The tourism and hospitality industry's shift to digital, accelerated by ongoing staff shortages, is driving a surge in contactless services and the adoption of mobile technologies. Mobile apps allow guests to conveniently access services and amenities, from self-service kiosks to digital check-in counters. A significant number of hospitality businesses are adopting a no-staff or minimal-contact model to improve efficiency and guest satisfaction. This digital transformation is helping to create a smoother and more streamlined guest journey from booking to check-out.

Mobile innovation will continue to advance. The growing success of travel-focused mobile tools like Emburse Go, designed to simplify the travel experience, is likely to attract more players to the market. DeepMind co-founder Mustafa Suleiman highlighted that the next phase after generative AI will be interactive AI. Unlike generative AI, which generates content based on input data, interactive AI will enable robots to carry out assigned tasks by collaborating with other programs and individuals. This shift is expected to drive further advancements in mobile concierge technologies, which have been gaining traction in recent years. By 2025 and beyond, we can anticipate a broader range of AI applications and the emergence of new, innovative sectors [15].

For instance, the United mobile app delivers a seamless user experience with features like customized departure times, intuitive baggage tracking, and personalized rebooking options. Skift praised the app for its standout design, calling it “the best digital experience” in a landscape often marked by mediocrity [15].

The term “Internet of Things” more commonly used to refer to everyday physical devices, appliances, and other “things” that are connected to the Internet. The technology allows devices to be remotely controlled or monitored and perform actions automatically [14]. A hotel can become a “smart hotel” with the help of IoT technology. Essentially, a smart hotel is a hotel that uses Internet-connected electronic devices and appliances that are able to communicate or interact with each other by sending or receiving data, which makes them “smart” [21]. The ability of these devices to interact with each other could allow users greater control

and access to information through their phones, as well as control multiple devices from a single control point.

The use of smart devices can help optimize the physical condition of a hotel and its rooms: allows you to manage the room using a mobile application, namely, to adjust lighting, temperature and security; enables personalization by collecting data on guest preferences and adapting services to their needs; enables reduction of electricity costs. It is also worth mentioning about seamless travel: in airports, this could mean using sensors and sending information to passengers' smartphones, alerting them when their luggage is nearby and allowing them to find it more quickly; sensors on planes could alert staff when the alarm level rises above a certain level; hotel check-in could be made seamless (hotels send electronic key cards to guests' phones, which automatically check them in when used, without stopping at the reception desk); sensors could also notify restaurant staff of a guest's arrival, automatically sending them the correct table number; IoT can also be used to collect accurate data on the number of people using certain hotel facilities at different times to optimize staffing [14].

Companies in the travel industry can also use IoT to send location information to customers and collect valuable data. By combining smartphone capabilities with beacon technology or other sensors, it is possible to send messages to tourists at the point where they are most relevant, depending on where they are. For example, this could mean sending messages about: local attractions and tours and the times when they are least busy, which reduces wait times and improves the overall experience of the trip; or real-time recommendations about public transportation.

The Internet of Things can also directly benefit IoT devices by providing valuable real-time information about their current status. This could be vital in the travel and tourism, as it allows major devices to be repaired or replaced before they stop working. For example, hotel staff can be alerted if a radiator or light bulb breaks. Outside of hotels, the Internet of Things can also be deployed to airlines could refuel aircraft more efficiently or replace spare parts in a timely manner, striking the perfect balance between maximizing value and maintaining safety [14].

The trend towards smart rooms is accelerating. Properties like Raus are implementing cutting-edge IoT solutions to offer guests unprecedented control over their stay. These smart home mobile apps, voice controls, and connected devices allow guests to adjust room settings to their preferences, from lighting and temperature to entertainment systems, to create a unique and personalized experience. This level of personalization is becoming the new standard for luxury hospitality:

- apps like Marriott allow guests to customize their ideal room setting before arrival;
- connected Hilton room allows guests to control over 100 features, including streaming their own content to their TV;

- voice control via Amazon Alexa or Google Home allows for hands-free setup;
- smart sensors also detect room occupancy to optimize cleaning and maintenance [22].

Smart technology and the Internet of Things are continuously advancing, leading to the emergence of an increasing number of solutions for smart rooms and smart homes.

For example, SALTO has introduced Smart Locks, an advanced system that enhances traditional mechanical locks by enabling secure, keyless, and mobile access to apartment doors via a smartphone. The system is also compatible with Apple Wallet, offering seamless integration and convenience [15].

Smart bed technology is gaining popularity and receiving higher ratings. At the Lake Nona Wave Hotel in the U.S., guests can experience smart beds that automatically adjust to optimize sleep conditions. These beds monitor and regulate temperature while adapting to relieve pressure points, providing a comfortable and restful night's sleep [15].

These are just a few examples of how IoT solutions provide a high level of convenience and personalization.

A robot is a machine designed to perform specific tasks accurately and automatically. These can be physical tasks, or tasks related to text or speech. They can be fully autonomous or semi-autonomous, working with some human assistance. Modern robots use a variety of technologies: from collision detection to speech recognition and artificial intelligence. According to Global Travel Technologies Business Analysis Report, conducted by Research and Markets, the size of the global hospitality robot market is projected to grow by 25.51% by 2030 [9].

Advanced robotics is constantly improving customer loyalty and customer service quality by providing innovative services and offering assistance in the tourism and hospitality sectors:

- In hotels and airports, robots help navigate: check in customers, answer their questions about help desks, hotel rooms, restaurants and hours, hotel maps, flights, and other related tasks. This provides 24/7 support and improves the guest experience;
- Robot guides conduct interactive tours of museums and tourist attractions: they provide information and engage visitors with dynamic presentations;
- automated transportation: self-driving shuttles and baggage handling robots reduce waiting times, increase safety, and simplify trips for passengers;
- Butler robots and porter robots in hotels assist customers by escorting them to their hotel rooms, delivering luggage to their rooms, maintaining cleanliness, and serving food and snacks;
- customer service chatbots: automatic responses to customer inquiries are available on websites or in applications;
- registration/deregistration work: automated kiosks for self-service check-in and check-out at hotels;

- cleaning robots: automatic machines for washing floors, windows, and public places;
- security work: robots patrol premises to detect and report unusual activity [6].

In particular, brands such as Hilton, Marriott, Henn-na are examples of the implementation of this technology.

Thus, robots delight consumers by offering unexpected services, maintaining constant customer engagement, creating a fresh and exciting atmosphere in their minds. This has a positive impact on the positioning of brands in the market.

Overall, robots offer greater consistency and precision than humans and often perform tasks more quickly, particularly those involving calculations. Unlike employees, robots never experience fatigue or boredom, require no motivation or salary, are not bound by labor regulations, and can operate 24/7, year-round, without breaks or holidays. However, there are also disadvantages: overreliance on robots can lead to "automation crises", when robots will replace humans, leading to a shortage of jobs; robots cannot adapt to unforeseen events, malfunctions, and have high initial and long-term maintenance costs. But there are situations where robots are necessary. A great advantage of their use is their ability to work in dangerous conditions where humans cannot work safely [6].

Automation tools, robotics, and smart home solutions increase work efficiency by:

- reducing dependence on human labor to perform repetitive tasks;
- simplify maintenance with predictive analytics powered by the Internet of Things;
- optimizing utility costs through resource-efficient systems.

These savings allow hotels to invest in improving guest amenities, creating a better overall experience [21].

Digital marketing tools allow hotels to reach a wider audience and personalize their marketing efforts. Social media, email campaigns, and targeted advertising can attract more guests and build brand loyalty. According to a 2023 Statista report, hotels that invested in digital marketing saw a 25% increase in bookings.

Sustainable tourism is a form of tourism that takes into account its economic, social, and environmental impacts, both in the present and the future, while meeting the needs of travelers, the industry, the environment, and local communities. Its core principles focus on balancing environmental, economic, and socio-cultural aspects to ensure long-term sustainability [23].

Green technologies and sustainability include advanced environmental solutions that are applied to protect natural resources and the atmosphere, mitigate or minimize the undesirable impact of anthropogenic activities on the environment, and enhance sustainable development. The main goal of implementing these technologies is to protect and sustain the environment and restore past damage. In 2023, the

global green technologies and sustainability market was estimated at \$17.21 billion.

The market is projected to expand from \$20.90 billion in 2024 to \$105.26 billion by 2032, with an expected CAGR of 22.4% throughout the forecast period [24]. “Digital technologies can accelerate progress towards achieving sustainable development goals, going beyond compliance to help enterprises achieve goals, create new business models, and unlock revenue streams”, said Moyer [3]. According to Gartner, digital technologies play a critical role in achieving both financial and sustainability outcomes.

Now sustainable development is a key part of brand identity and strategy in the tourism and hospitality industry. The use of smart thermostats and lighting to save energy, artificial intelligence and the Internet of Things to reduce food loss and waste, plastic-free policies and digital tools such as apps are helping to make accommodation, restaurants and travel more sustainable, while the closed economy market can create new revenue and reduce waste.

These efforts reduce the industry’s environmental impact and support important ESG goals. Embracing sustainability responds to growing consumer demand for environmentally friendly practices and positions brands as responsible, forward-thinking leaders [21].

While the initial investment in digital technology can be high, the long-term savings are significant. Automation reduces labor costs, and energy-efficient systems reduce utility bills. For example, according to a 2024 report by the International Energy Agency, smart thermostats and lighting systems could reduce energy consumption by up to 20% [20].

Digitalization can also contribute to the sustainability efforts of the hotel industry. Smart technologies, such as energy-efficient lighting and heating systems, help reduce energy consumption and operating costs. For example, hotels can monitor and optimize energy use through smart sensors and automation. This not only reduces costs, but also attracts environmentally conscious guests. According to ABI Research, 6.4 million smart hotel room devices are expected to be shipped worldwide by 2027, more than double the 3.2 million shipped in 2022 [20].

Green technologies refer to environmentally friendly technologies and tools that improve business operations. These technologies also facilitate the use of consumer applications such as charging systems, electric vehicles, smart homes, and other applications powered by IoT sensors. The Internet of Things is an important aspect of the green technology industry and sustainable development. IoT in green technologies enables sensor-based solutions, minimizes the need for human intervention, and provides rich analytical information so that service providers can continuously improve their services. In recent years, the combination of IoT and green technologies has promoted the use of renewable energy. Ecological networks in IoT can provide emission and pollution reduction by using observations and minimizing operational costs and

consumption. The Green Internet of Things (G-IoT) is expected to initiate significant changes that will contribute to the realization of the idea of a green intelligent environment. For example, according to GSMA Intelligence, the tourism and hospitality industry is expected to see massive clusters of sensors, devices and things communicating via high-speed technologies such as 5G within a few years. This growing adoption of IoT technology is likely to propel the green and sustainability market onto a higher growth trajectory.

But traditional technologies are cheaper than green technologies. The high cost of green technology solutions is the environmental cost that is externalized in many conventional manufacturing procedures. In addition, since the technology is still new, training and development costs are expected to be higher compared to existing technologies. High initial deployment costs are likely to limit the adoption of green technologies among enterprises. For example, when using air quality monitoring instruments to analyze and test air quality indicators, detecting biological and chemical parameters in the air requires the use of advanced technologies such as gas sensors, radio frequency identification, and PCR-based biosensors, all of which are expensive.

Furthermore, the estimated benefits of green technologies depend on factors such as technological readiness, human resource capacity, geographical elements, and the availability of supporting infrastructure. Therefore, to deploy green technologies, tourism and hospitality enterprises must satisfy all the requirements mentioned above. However, inadequate infrastructure is likely to hinder the growth of the market [24]. The surge in demand for green and sustainable technologies is attributed to the desire of consumers to be more environmentally conscious. The segmental growth is also significantly driven by government efforts to promote green technologies.

As for customers, the bar for capabilities and service requirements is higher than ever. They demand immediate, fast, and hassle-free service. This trend is sometimes described as the “Amazonization” of the consumer, as Amazon has established high standards for fast delivery, leading to disappointment when other companies fail to meet those expectations. Reflecting on this shift in priorities, Salesforce research highlighted in Tiffany Rowe’s book *The Experience Mindset* found that “88% of customers believe that the experience a company provides is as important as its product or service. In a world where there are many “things”, experience becomes a more valuable currency [25].

It is also worth taking a closer look at the difficulties and obstacles to digitalization in the tourism and hospitality sector:

- high initial investment: Implementing digital solutions requires significant upfront investments in technology and infrastructure. Hotels need to invest in software and hardware, and train staff to effectively use these new systems. This can be

a financial burden, especially for small and independent hotels with limited budgets. A 2023 PwC report found that 40% of small hotels cited financial constraints as a barrier to digitalization. However, the long-term benefits of increased efficiency and guest satisfaction often outweigh the initial costs. As noted Jennifer Kosar — PwC Head of AI Assurance — “Successful AI governance will increasingly be defined not only by reducing risk, but also by achieving strategic objectives and high return on investment” [26; 27];

- Security and privacy concerns: The growing reliance on digital tools increases the risk of data breaches and cyberattacks. Hotels handle vast amounts of personal data, making them prime targets for cybercriminals. Implementing strong cybersecurity measures and adhering to data protection regulations are essential for safeguarding guest information. According to a SiteMinder report, 45% of hotels acknowledge that fragmented technology and data hinder their ability to gain a comprehensive view of customers and operations, emphasizing the importance of integrated and secure systems [28];
- With the increase in digital transactions and data collection, hotels are becoming more vulnerable to cyberattacks. A 2024 study by Cybersecurity Ventures forecasts that cybercrime losses will amount to \$10.5 trillion per year by 2025, emphasizing the critical need for strong security measures. Therefore Enterprises should: develop and systematically update a comprehensive cybersecurity strategy that includes both technical and organizational security measures; use AI technologies to increase the effectiveness of protection and identify potential threats; use blockchain technologies, in particular, to protect confidential and important business data; conduct ongoing professional training of personnel on cybersecurity issues [29];
- reduction in human interaction: While digitalization can increase efficiency, it can also reduce human interaction. This is a key aspect of the hospitality industry. Automated check-ins, chatbots, and smart rooms can lead to fewer face-to-face interactions between guests and staff. This can impact the personalized approach that many guests value in their hotel. Hotels need to find a balance between automation and personalized service to maintain guest satisfaction;
- technological dependence: The adoption of digital technologies can make hotels vulnerable to system failures and technical issues. Any disruptions to digital services can lead to operational issues and negatively impact the guest experience. A 2023 Gartner survey found that 60% of hotels experienced at least one major system failure each year [3]. Hotels should have contingency plans in place to address potential technical issues and ensure smooth operations;
- moving work: Automation and digital tools can lead to job displacement, especially for jobs that

involve repetitive and routine tasks. While digitalization creates new opportunities, it also requires workers to adapt and acquire new skills. According to a 2023 World Economic Forum report, 50% of all workers will need to be retrained by 2025 due to technological advances [30];

- digital divide: Not all travelers are comfortable with digital technology. Some may prefer traditional service methods, and hotels need to accommodate these preferences to avoid alienating a certain demographic. A 2023 PeW Research Center study found that 25% of adults over 65 don't feel comfortable using digital services [30].

4. Conclusions

So, digitalization is a key trend in the modern tourism business. The tourism and hospitality industry is rapidly changing under the influence of technological progress. The latest developments in software and hardware, as well as digital solutions, are fundamentally transforming the guest experience and facilitating the management of hotels, resorts, restaurants and tourism.

The industry is becoming more efficient and guest-centric with the introduction of travel and hospitality software, artificial intelligence, and smart devices. From contactless service to personalized services based on data analytics, these innovations are changing the way we do business. Companies that do not implement digital technologies risk losing their competitive advantage and losing their market position. The range of applications of technology in tourism and hospitality is huge.

Digitalization of the tourism and hospitality industry offers numerous benefits:

- enhancing efficiency and productivity: Automating tasks frees up time and resources for more strategic activities. This includes streamlining HR processes such as recruitment, training, and performance evaluation, allowing employees to focus on creative and high-level tasks. Automation also improves task accuracy, minimizes errors, optimizes workflows, and increases overall operational speed;
- boosting sales and revenue: Digital technologies enable businesses to offer unique and enhanced experiences that set them apart from competitors. By maintaining high customer service standards, leveraging technology to complement rather than replace human strengths, and adopting a personalized approach, businesses can improve service quality and strengthen their competitive edge;
- reducing costs: Automation and optimization help cut unnecessary expenses caused by errors and inefficiencies. By lowering operational costs, improving resource utilization, and uncovering new cost-saving opportunities, businesses can achieve greater financial efficiency;
- informed decision-making: Data collection and analysis provide businesses with deeper insights into customer behavior and market trends, enabling smarter, data-driven decisions;

- improving customer interactions: simplifying access to information, i.e. the ease with which companies and customers can communicate with each other; providing customers with access to information and services 24/7; creating a personalized experience for each customer; collecting and analyzing information about customers to better understand their needs.
- creating new business opportunities: for doing business online; entering new markets; creating new products and services, in particular, those that meet the needs of digital consumers; Attracting tech-savvy guests who value convenience and innovation; Increasing market share and ensuring strong customer loyalty through, for example, investing in user-friendly design, fast professional support and early, flexible adoption of digital technologies; Increasing competitiveness.

But digitalization also creates problems, such as: high initial costs, security issues and confidentiality, job relocation, ongoing staff training, digital divide, reduction of human interaction, technological dependence.

In such a competitive industry, it is crucial to carefully weigh the cost of investing in digital technologies against their long-term benefits or ROI. These innovations come with significant upfront costs

but promise significant operational efficiencies and savings.

By understanding both the benefits and drawbacks of digitalization, tourism and hospitality businesses can better develop business strategies and implement technologies that improve their services while reducing potential risks.

Thus, the digitalization of the tourism and hospitality sector is an important process in the modern world, which allows enterprises in this sector to achieve greater efficiency, reduce costs, improve customer service and occupy a larger market share. The implementation of digital technologies can be a key factor in the success of a business in the face of constant changes in the market. Therefore, it is important to prepare for digital transformation by using new technologies to improve business processes and ensure competitiveness. In 2025 and beyond, the key challenge for the Ukrainian tourism and hospitality sector will be to combine safety, service quality, and digital technologies, which will allow the industry to develop even in conditions of instability.

In the tourism and hospitality sector, companies are also actively testing other innovative technologies that will help them better meet the needs of travelers, generate financial benefits for themselves, and contribute to sustainable development.

5. References

- [1] In 2024, the tourism sector of Ukraine brought almost 3 billion UAH to the budget. <https://www.tourism.gov.ua/blog/u-2024-turistichna-sfera-ukrayini-prinesla-v-byudzheth-mayzhe-3-mlrd-grn>.
- [2] Azovskyi, D. (2025). Tourism in recovery mode: how Ukrainians' vacations save the country's economy. <https://business.rayon.in.ua/topics/774368-turizm-u-rezhimi-vidnovlennya-yak-vidpochinok-ukraintsiv-ryatue-ekonomiku-kraini>.
- [3] Gartner Survey Reveals 69% of CEOs View Sustainability as a Growth Opportunity. <https://www.gartner.com/en/newsroom/press-releases/2024-06-05-gartner-survey-reveals-69-percent-of-ceos-view-sustainability-as-a-growth-opportunity>.
- [4] Schorn, K. (2024). Transforming Hospitality: AI's Game-Changing Role in Hotels. <https://transformhospitality.com/blog/transforming-hospitality-ais-game-changing-role-in-hotels/>.
- [5] Barten, M. (2024). How Artificial Intelligence is Changing the Travel Industry. <https://www.revfine.com/artificial-intelligence-travel-industry/>.
- [6] Barten, M. (2024). Robots in the Travel Industry: 8 Real-World Examples. <https://www.revfine.com/robots-travel-industry/>.
- [7] Ivanov, S., & Webster, C. (2019). Robots in tourism: A research agenda for tourism economics. <https://doi.org/10.1177/1354816619879583>.
- [8] Belias, D., Malik, S., Mantas, C., & Rossidis, I. (2021). The Use of Big Data in Tourism: Current Trends and Directions for Future Research. DOI: <https://doi.org/10.36941/ajis-2021-0144>.
- [9] Barten, M. (2019). How Blockchain Technology is Transforming the Travel Industry. <https://www.revfine.com/blockchain-technology-travel-industry/>.
- [10] Haponenko, H., & Vasylenko, V. (2019). Prospects for the use of blockchain technology in the tourism industry. *International Relations. Economics. Country Studies. Tourism (IRECST)*, (10), 193–199. [in Ukrainian].
- [11] Barten, M. (2024). How Virtual Reality is Transforming the Travel Industry. <https://www.revfine.com/virtual-reality-travel-industry/>.
- [12] Denzon, G. (2024). Virtual Reality in Tourism: A Revolution in Travel Experiences. <https://en.ticketinghub.com/blog/virtual-reality-in-tourism>.
- [13] Barten, M. (2024). How Augmented Reality is Revolutionizing the Travel Industry. <https://www.revfine.com/augmented-reality-travel-industry/>.
- [14] Barten, M. (2024). How the Internet of Things (IoT) can Benefit the Travel Industry. <https://www.revfine.com/internet-of-things-travel-industry/>.

- [15] Tsukanova, T. (2024). The future of tech in hospitality. <https://hospitalityinsights.ehl.edu/future-tech-hospitality>.
- [16] Sharpley, R. (2020). Tourism, sustainable development and the theoretical divide: 20 years on. *Journal of Sustainable Tourism*, 28(2), 1–15. <https://doi.org/10.1080/09669582.2020.1779732>.
- [17] Rodrigues, V., Eusébio, C. & Breda, Z. (2023). Enhancing sustainable development through tourism digitalisation: a systematic literature review. *Inf Technol Tourism*, 25, 13–45. <https://doi.org/10.1007/s40558-022-00241-w>.
- [18] The Collins word of the year 2023 is... <https://www.collinsdictionary.com/dictionary/english/ai>.
- [19] Fortune. Business insights. Technology / Blockchain Market. <https://www.fortunebusinessinsights.com/industry-reports/blockchain-market-100072>.
- [20] The Pros and Cons of Digitalisation in the Hotel Industry. <https://www.breakingtravelnews.com/focus/article/the-pros-and-cons-of-digitalisation-in-the-hotel-industry>.
- [21] Key Digital Trends in the Hospitality Industry. <https://www.revfine.com/digital-trends-hospitality-industry/>.
- [22] Key Hospitality Technology Trends to Watch in 2025. <https://hospitalityinsights.ehl.edu/technology-trends-hospitality-industry>.
- [23] Sustainable development. <https://www.unwto.org/sustainable-development>.
- [24] Fortune. Business insights. Hardware & Software IT Services / Green Technology and Sustainability Market. <https://www.fortunebusinessinsights.com/green-technology-and-sustainability-market-102221><https://www.fortunebusinessinsights.com/green-technology-and-sustainability-market-102221>.
- [25] Bova, T. (2018). The Experience Mindset: Changing the Way You Think About Growth. <https://www.tiffanibova.com/the-experience-mindset/>.
- [26] 2025 AI Business Predictions. <https://www.pwc.com/us/en/tech-effect/ai-analytics/ai-predictions.html>.
- [27] 6 generative AI business myths that will make you rethink everything. <https://www.pwc.com/us/en/tech-effect/ai-analytics/six-generative-ai-business-myths.html>.
- [28] Kuching Park Hotel by Infinite Hospitality Group compliments smart guest experience with addition of Site-Minder's platform. <https://www.siteminder.com/case-studies/kuching-park-hotel-infinite-hospitality-group-siteminders-platform/>.
- [29] Morgan, St. (2024). Top 10 Cybersecurity Predictions and Statistics For 2024. <https://cybersecurityventures.com/top-5-cybersecurity-facts-figures-predictions-and-statistics-for-2021-to-2025/>.
- [30] Prasad, A. (2023). Technology and AI will change the jobs of almost a quarter of the world's workers — World Economic Forum report. <https://forbes.ua/news/tekhnologii-ta-shi-zminyati-robotu-mayzhe-chverti-pratsivnikiv-u-sviti-zvitsivsitnogo-ekonomichnogo-forumu-01052023-13375>.

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ДИДЖИТАЛІЗАЦІЯ СФЕРИ ТУРИЗМУ ТА ГОСТИННОСТІ

Анотація. У статті досліджено вплив цифровізації на сферу туризму та гостинності, зокрема в умовах сучасних викликів. Проаналізовано стан галузі в Україні у 2024 році, коли, при економічній нестабільності та наслідках війни, спостерігалось збільшення податкових надходжень та поступове відновлення туристичного бізнесу. Окреслено ключові перешкоди розвитку сфери туризму та гостинності в Україні, серед яких низький рівень цифрових технологій та недостатня інфраструктура. Мета дослідження — аналіз основних переваг і бар'єрів, пов'язаних із упровадженням цифрових технологій у сферу туризму та гостинності. Завдання полягає у висвітленні основних перспектив та викликів використання цифрових технологій, а також у формулюванні стратегії застосування цих технологій на туристичному ринку як засобу відновлення індустрії туризму та гостинності. Для цього застосовуються теоретичні, методологічні та системні підходи до аналізу джерельної бази, зокрема, статистичних даних і наукових публікацій. Розглянуто роль диджиталізації, зокрема застосування штучного інтелекту, VR, AR, блокчейну, Інтернет-речей та великих даних, зелених технологій та технологій сталого розвитку на сферу туризму та гостинності. Виконано описовий аналіз рівня цифровізації туризму та можливостей її подальшого розвитку. У результаті дослідження визначено ключові напрямки упровадження цифрових технологій у туризм і гостинність та їх вплив на формування різноманітніших і гнучкіших пропозицій на ринку туристичних послуг. Дійшли висновку, що упровадження цифрових технологій сприяє прозорості та якості туристичних послуг, підвищенню безпеки галузі, що сприятливо позначається на її прибутковості.

Ключові слова: диджиталізація, цифрові технології, III, віртуальна та доповнена реальність, блокчейн, хмарні технології, зелені технології, сталий розвиток.