



Journal  
of Danubian  
Studies  
and Research

## The Digital Transformation in the Hospitality Industry: Realities, Trends, Perspectives

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**Abstract:** Today's trend is the digital economy. Digitization processes are particularly relevant for the services sector. Both large and small companies in the hotels, passenger transport, catering, leisure sectors use a varied set of communication tools (hardware and software) to organize the business process. The phenomenon of digitization is no stranger to the hospitality industry in Moldova. Hotels in Chisinau are exploiting the advantages of online presence and the tools that operating on the Internet and Web 2.0 platform brings.

**Keywords:** hospitality industry; digitalization; business ecosystem; communication tools; digital platform

**JEL Classification:** M11; Z30; Z32

### 1. Introduction

Post-industrial society is an information society, whose material and spiritual civilisation enshrines the decisive role of information and knowledge as sources of economic performance, rationality, coherence and synergy of social action. Typical for this society are the prevalence of activities related to digitization (the conversion of analogue technologies into digital), digitalization (the use of digital technologies and digitized data) and digital transformation (refers to cultural change). Today's trend is the digital economy, which is seen as directly linked to the development and implementation of digital technologies in all areas of economic production and consumption. Digitization processes are particularly relevant to the services sector. Trade and transport companies, the tourism and hospitality industry, catering

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companies have had the opportunity to expand their target audience and coverage, to improve the quality of their services, to grow at an accelerated pace, bearing in mind that in the global digital economy success will be on the side of those who will have more high-quality digital platforms in their arsenal.

## **2. The Main Objectives of the Research Are**

- to determine the main development trends of the hospitality industry, which are formed under the influence of global digitalization,
- to analyse the key changes taking place in business processes in terms of the application of digital technologies,
- determining how operators in the hospitality sector in the Republic of Moldova approach the virtual market, as well as the factors influencing digitalization,
- case study: assessing the degree of exploitation of the online presence of hotels in the city of Chisinau in the distribution of accommodation services (website functions, connection to new social media, booking engine, etc.).

## **3. Research methods applied**

In order to achieve the proposed aim, the research methodology is based on methodological tools specific to the social and economic sciences. To this end, the classic methodologies of academic research, namely the quantitative and qualitative method, were used. Furthermore, the author applied transversal research methods on theoretical issues, which were materialized through procedures of investigation, observation and testing of existing concepts, ideas and theories in this field. The techniques specific to the researched field included: critical literature review, synthesis, comparison, problematization, inquiry.

## **4. Results and discussions**

### **4.1. Approach to the researched topic in the literature**

One of the factors contributing to the introduction of digitalization in the hospitality industry is the wide access to the Internet and the ability of the population to work in the Internet environment. As a result, the main trend is the departure of the main customers to the Internet, which is associated with both the widespread use of

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Internet technologies and the generational change. This is confirmed by the steady growth in online sales. The main consumers of goods and services are people in Generation Y (millennials) and Generation Z, for whom modern digital communications are a norm.

The role of digital marketing communications in the hotel and restaurant industry is growing. The majority of purchases of accommodation, food services and travel in general have used mobile search on a smartphone. At the same time, the tourism needs of new generations are changing, these travellers demand a personalised product, so the service provider's website needs to be adaptable, accept payment by card and other electronic means of payment, and the time from search to purchase needs to be minimised.

A peculiarity of tourism and hotel services is that when a potential tourist chooses them, he not only uses the information posted on the official websites of tour operators and tourism industry companies, but also actively studies the reviews and comments of tourists who have visited the destination and the hotel. In other words, the successful promotion and sale of tourism products depends to a large extent on the users-tourists themselves, who become direct participants in the business processes. This explains the popularity of customer interaction methods via apps.

Under the influence of the computerisation process, the processes of running a business in the hospitality industry have changed a great deal. Marc-Éric Bobillier-Chaumon (2019) identifies three categories of digital technologies by purpose:

- generic technologies, which enhance the capabilities of individuals at work by optimising their actions in terms of speed, accuracy, responsiveness or reliability;
- substitute technologies, which replace all or part of human activity because they are considered more reliable, more rigorous and more efficient than individual human capabilities, and often less costly;
- palliative technologies, insofar as they attempt to compensate for a deficit or lack of the individual that has arisen as a result of various causes (Bobillier-Chaumon, 2019, pp. 420-424).

The introduction of information technology into the hospitality industry began in the mid-1960s (a process that has evolved into four digital eras: the GDS era; the Internet era; the SoLoMo era; the Hybrid era) (Thakran & Verma, 2013, pp. 240-249).

At the beginning, the use of digital technology focused on information transmission or mediation practices, and later (in the late 2000s) on customer loyalty,

administrative management, decision support, training and learning, and social networking (informational and collaborative). Both large and small companies in the hotel industry, passenger transport, catering and leisure sectors use a varied set of communication tools (hardware and software) to organise the business process. The latest digital technologies acting as the basis for the digitalization of tourism activities are:

- Big Data technology, blockchain,
- artificial intelligence (AI),
- Internet of Things (IoT),
- mobile devices and more.

These technologies are used for booking, e-commerce, image recognition, big data processing, development of cloud services and artificial intelligence (neural networks), location determination, Internet of Things, 3D printing. Artificial intelligence, especially recognition technology, is used for:

- room access using retina or fingerprint scanning,
- providing additional customer facilities,
- increasing the safety of the hotel stay (this technology is used, for example, in the Marriott China hotel),
- personalisation of services, which improves the quality of customer service, e.g. NEC NeoFace Express technology.

Generally, service customisation is now one of the most important competitive advantages that cannot be achieved without digital technologies. In order to understand the customer's needs and desires, it is necessary to collect and process a database related to their previous travel experience, hotel accommodation, etc. This enables the creation of a virtual image of the traveller, modelling their needs using artificial intelligence systems and providing remote consultancy services using chatbots. Advantages of providing services using artificial intelligence (AI) systems include the speed and accuracy of providing information to the customer. Artificial intelligence allows the service provider to process information quickly and prepare more options for a personalised offer, for example more accommodation options with personalised reviews. An example is the use of AI systems in Hilton hotels to provide customers with tourist information.

The most promising digital technologies are Big Data and blockchain. Blockchain technology is already widely used in the travel industry:

- collection and control of information on baggage movements between airports and between airlines;
- passenger identification using fingerprints or retina scans;
- organising payment for various services, including with bitcoins.

The most successful tourism projects using blockchain technology are the following:

- LockChain platform, which is a trading platform for a variety of accommodation facilities, for which there are no intermediaries and no fees;
- BeeToken and Beenest platforms, which are designed to pay for accommodation without charging a commission;
- the Winding Tree platform, which allows booking tourist services without intermediaries;
- the ShoCard & SITA platform allows service providers to manage customer identification;
- the TUI-TUI Bed-Swap platform offers real-time tracking of available room information in various hotels without the services of intermediaries;
- Amadeus' digital customer identity management platform enables the secure transfer of information along the entire travel chain in particular:
  - shares agreed travel information with all service providers in the travel chain,
  - one-time registration for all trips;
  - confirmation of identity with reference to passport information;
  - transfer of information in a proportionate way: at each point of tangency – strictly necessary information;
  - managing data transfers with a technology solution that helps travellers understand what data is shared with travel service providers.

Modern cognitive platforms make it possible to analyse a person's behaviour directly in the process of communicating with them and to deduce operational conclusions, presenting, for example, certain clues to the travel agent. In particular, the Amadeus

Alita software listens to the customer, takes into account all the nuances of the customer's request (destination, type of trip, trip duration and other factors) and displays on the travel agent's screen the travel options that suit this customer. The program differentiates intonations and can even determine the customer's mood. If the customer makes repeated requests, then the „smart assistants” refer to the booking history and analyse the customer's preferences.

Digital customer identification is being actively developed. Online identification allows the travel agent/tour service provider to focus on each customer individually, and blockchain technology simplifies many processes.

The Internet of Things (IoT) is a very promising direction in hotel management. In particular, the Smart Home programme allows you to save electricity, enhance security and save time during hotel operations (Кузяшев & Смолин, 2021).

Building Management Systems (BMS) are often installed in newly built hotels to ensure good control of internal comfort conditions, individual control of rooms, increased staff productivity, efficient monitoring of energy consumption and improved reliability of facilities. By linking the management of the different hotel functions, the BMS system enables: a high degree of guest comfort, better management of energy and operating costs, support for daily tasks, preventative security, as well as efficient and rapid responses to complaints. The main automation companies offering BMS solutions for hotels are Siemens (Hotel Site Cockpit system), Sauter (EY-modulo), Schneider and Mitsubishi.

Focusing on user needs and allowing them to receive various products and services through a single access point, the concept of a business ecosystem has been developed as part of the digitalization process.

Typically, a business ecosystem is seen as a group of suppliers, distributors, customers, competitors, participating in the creation, production and delivery of a particular product or service in a competitive and collaborative manner.

There are many different ecosystem concepts in the literature. An overview of the main definitions of an ecosystem is provided in V. Karpinskaya's work (2018) *Экосистема как единица экономического анализа* (Ecosystem as a unit of economic analysis). The common interpretation of the term „digital ecosystem” is of an interconnected and interdependent group of economic entities that share digital platforms for mutually beneficial purposes, such as commercial gain, innovation or common interests. Due to the synergistic effect of the interaction between companies

united in an ecosystem, a new quality of products and services is formed, based on the complementarity effect.

Depending on their functional purpose, digital platforms can be divided into three groups:

- instrumental, which are hardware and software solutions that perform technological operations of information processing, e.g. AmazonWeb Services, which is a leader in providing cloud services, Java, AndroidOS, iOS, Bitrix, Microsoft Azure, etc.,
- infrastructural, providing IT services, e.g. General Electric Predix, ESRI ArcGIS, ESIA, CoBrain-Analytics, etc.,
- applied, targeting specific markets, e.g. Uber, Facebook, Alibaba, AliExpress, Airbnb, Booking.com, Avito, Apple AppStore, AviaSales, etc.

Business models based on digital platforms make it possible to bring together producers and consumers of services, virtually levelling out the role of intermediaries. Uber (taxi services), Airbnb (short-term home rentals), Booking.com (hotel bookings), which work on the concept of „many service providers – many customers”, are all based on such applied digital platforms.

Applied digital platforms are built on the basis of instrumental and infrastructural ones, e.g. the applied digital platform Uber works on the basis of the instrumental Web GL platform and the infrastructural Google Maps platform. The largest digital ecosystems are Alibaba, Alphabet (Google), Amazon, Apple, Facebook, Microsoft, Tencent. They hold a significant share of global world markets, notably 90% of Internet searches are conducted through Google, 37% of the world's Internet commerce belongs to Amazon.

Usually, digital ecosystems are formed on the basis of a large company, which organises and manages the ecosystem, gathering around it other companies producing complementary products and services, making it possible to create a new complex product or service, more valuable for the end user.

In the hospitality industry, the digital ecosystem ensures the creation of a tourism market for the provision of information, booking and sale of tourism products (air tickets, accommodation services), which brings together a significant number of participants in the tourism services market. Examples of aggregators: Bravofly, Dohop, Kayak.com, JetRadar, Mobissimo, Momondo, CheapOair, Ixigo.com, SideStep, Wego.com, Webjet, kiwi.com, etc.

The phenomenon of digitalization is no stranger to the hospitality industry in Moldova. Studies show three directions of digitalization materialization in the activity of institutions and companies:

- launching digital platforms and mobile applications to promote tourist destinations;
- use of electronic mail;
- development and use of websites by companies operating in the hotel, catering, travel, passenger transport, car rental, etc.;
- linking to international digital platforms: Expedia, Amadeus, Booking, etc.;
- the use of digital software in the administrative management of companies in the tourism, catering and hotel industries (e.g. Fidelio).

The first mobile application with the new tourism brand Moldova Holiday was launched in 2015 by the National Inbound and Domestic Tourism Association of Moldova (ANTRIM) with the support of the USAID project. Another mobile app – Moldova Wine Route – was presented to the public in 2017, being a guide to local wines and wineries, created with the support of the German Federal Ministry for Economic Cooperation and Development. The information provided by Google and Yandex search engines shows the presence of blogs of authors from Moldova, who promote their country as a tourist destination (Antoni & Bulican, 2019, pp. 85-86), such as Svetlana Matvievici's blog, [www.Orheianca.eu](http://www.Orheianca.eu), or Ana Maria Ursu's blog, [www.anamariaursublog.wordpress.com](http://www.anamariaursublog.wordpress.com).

Among the factors hindering the development of digital technologies in the Moldovan hospitality industry are:

- financial and economic factors (it is quite difficult for small and medium-sized enterprises in the hospitality sector to invest massively in digitalization of activities, while benefits and programs to support and stimulate them in this direction are not provided);
- legal and regulatory factors (lack of a clear regulatory framework governing the interaction of subjects in the transition to the digital space, including the protection of personal data, control of the accuracy of accounts and information provided);
- lack of investment in high-tech industries;
- the low standard of living of the country's population (lack of possibility to purchase modern gadgets, to use paid content and internet roaming services while travelling);



- digital illiteracy of the population (some people do not know about the possibilities of digital technologies or know very superficially).

Factors underpinning the development of this industry and the processes of digitalization within it:

- „low base” effect, which can suddenly optimize business processes by upgrading and implementing information technologies;
- the prospect of changing business models, leading to the creation of new services;
- the awareness of the situation „Companies either adapt or disappear from the market”.

#### **4.2. Results of the case study: hotels in Chisinau**

The study conducted on hotels in Chisinau was part of a research project carried out with the participation of third-year students, specializing in hotel services, tourism and leisure, from the Academy of Economic Studies of Moldova in October-December 2022. The aim of this study was to determine how hotels in Chisinau approach the virtual market of tourism distribution (website functions, connection to new social media, booking engine, etc.).

According to data from the General Directorate of Economy, Trade and Tourism of the City Hall of Chisinau, in 2021, in Chisinau 1354 hotels and restaurants were operating, including 78 hotels, of which 70 were approved hotels (89.85%). In the first stage of the study, an inventory was made of all approved hotels in operation in 2022 (i.e. 60 hotels) under the following aspects: comfort category, year of establishment, website ownership, website functions, presence on Facebook and other social media.

The websites were analysed to identify the functions that hotels have assigned to their websites:

- the function of presenting the offer, grouped by service category (updated, dynamic);
- the function of customer communication interface/engine allowing search and/or booking and/or payment and how this engine works;
- online customer advice function (chatbot);
- the function of recording consumer opinions (feedback).

In the second stage, a qualitative exploratory research was conducted in the form of an interview among a representative sample of hotels in Chisinau. Decision-makers from 19 hotels (31.66%) were interviewed. The instrument used was a semi-structured questionnaire with four sections: data about the respondent, evaluation of the hotel's current activity, connection to new distribution channels, strengths and weaknesses of the hotel in relation to competitors.

The research methods and tools used in the first stage were: questionnaire survey applied to the whole study population, content analysis of websites with observation guide. The online presence of the hotels was evaluated in the following aspects: hotel websites and the content elements they include, aspects related to interactivity in the online environment (e-mail marketing, social media marketing, search engine marketing, etc.) and elements from the search engine marketing category (SEO – Search Engine Optimization; PPC – Pay per Click). The research method used was observation, based on an observation guide.

The analysis of the functions of the websites of all hotels in Chisinau led to the following results:

- the way of presenting the offer: out of 60 functional hotels, 53 have a functional website and present their offer on it;
- existence of a customer interface/engine allowing search and/or booking and/or payment and how this engine works: 73.62% of hotels have a search and booking engine with customer interface, in 95.47% of hotels reservations are not restricted (example of restrictions: reservations can be made only two days before the arrival date or bank card is not accepted);
- online advice (chatbot): only 20.28% of hotels offer online customer support;
- hosting feedback: 21.44% of hotels offer the possibility to record visitors' opinions;
- content of pages: the vast majority (87.5%) limit themselves to providing general information about the hotel, 2 hotels offer the possibility to view rooms virtually.

Only 8.93% of hotels do not use social media channels to make their online presence known, i.e. to communicate with customers or potential customers, and 82.5% only use Facebook. At the same time, 14.29% use two social media channels, one of which is Facebook. Apart from Facebook, Instagram, Odnoklassniki, Telegram, Vk, Tik-Tok are used (in order of decreasing preference). The conclusions about the hotel's relationship with social networks were:

- this relationship developed mainly through posting information related to the offer on Facebook (83.61%), Instagram (16.39%), Odnoklassniki (12.14%) and VK (2.14%);

- 83.15% of the surveyed hotels (19 hotels) claim that they do paid promotion online, and 81% of them claim that they are concerned with search engine optimization (SEO).

When investigating the reason for setting up a website, 97.73% agreed that the website is important to facilitate interaction with customers.

Of the hotels surveyed, all are connected to at least one digital online distribution platform (100%) and the vast majority (98.14%) are connected to booking.com and 3.15% to other systems.

The conclusion of the presented study is that hotels in Chisinau are taking advantage of the benefits of online presence and the tools that operating on the Internet and Web 2.0 platform brings.

## **5. Conclusions**

Digital transformation opens up new development opportunities in the tourism and hospitality sphere. In the short term, the tourism and hospitality industries will be characterised by significant transformations, associated with general economic and social instability, changing business models, changing leadership, cutting-edge innovations, large-scale digitalization (of everything) and the use of digital platforms. The battle for the customer, including in the digital space, is a consequence of global digitalization and asks the question directly: “Companies either adapt or disappear from the market”. For small companies, the options are either to leave the market, or to go online and integrate into global sales channels, for large companies – to concentrate as many hotels or airlines as possible in their hands as assets, thus securing competitive advantages. When consolidating a business, it is prospective to use new technological solutions, to use dynamic real-time service packaging systems, new booking services, online services for direct sales to customers of individual services with the possibility to independently design the architecture of a service, robotic working systems in hotels, Big Data-based solutions on demand forecasting and price management. This is the only way to maintain customer loyalty and business profits, increase conversion rates and increase safety level.

It will undergo significant changes in staff infrastructure, driven by the training and development of new digital skills among employees in the tourism industry, which will become absolutely necessary for the execution of all business processes.

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