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CONCEPTUAL FOUNDATIONS AND PRACTICAL ASPECTS OF INFORMATION AND COMMUNICATION PROVISION OF TOURIST ENTERPRISES

КОНЦЕПТУАЛЬНІ ЗАСАДИ ТА ПРАКТИЧНІ АСПЕКТИ ІНФОРМАЦІЙНО-КОМУНІКАЦІЙНОГО ЗАБЕЗПЕЧЕННЯ ТУРИСТИЧНИХ ПІДПРИЄМСТВ

Summary. *The article is devoted to the study of the conceptual foundations of information and communication support for tourism enterprises and consideration of practical aspects of the use of information and communication technologies by tourism enterprises. Attention is focused on the theoretical study of the problems of information and communication technologies in tourism with the identification of the most important scientific achievements and researchers in this field. Scientific and practical approaches to information and communication technologies as part of information and communication support of a tourist enterprise are summarized, in particular, economic, technical, social, psychological and interdisciplinary approaches. The main ones have been considered stages in the implementation of ICT with a brief description of each of them. The grouping of the most significant and popular types of ICT by tourism enterprises was carried out, where for each of the types, the main ICTs that are*

specific to them, as well as common ones that can be used by several, are considered. The work focuses on the types of ICT used in practical activities by airlines, accommodation establishments, catering establishments, travel operators and travel agencies. In order to achieve strategic goals, a tourist enterprise has proposed a methodological approach to information and communication support, which provides for the implementation of five basic stages with the selection of relevant goals for each of them in order to form a comprehensive approach that will allow not only to identify problematic issues, but also to find reserves for their solution . It is proposed to evaluate the effectiveness of the website of a tourist enterprise using cohort analysis, which allows to group consumers according to certain characteristics and to form appropriate strategies for improving operational activities. The main stages of working with cohort analysis to achieve the strategic goals of a tourism enterprise are given. To justify the effectiveness of software implementation, it is proposed to use cognitive modelling, which allows combining subjective and objective assessments. The use of the proposed approaches to the use of various types of ICT by tourist enterprises will allow to achieve the specified tasks not only in the long-term, but also in the short-term perspective.

Key words: *information and communication technologies, information and communication support, tourism enterprise, reservation systems, website, cohort analysis, cognitive modelling*

Анотація. *Стаття присвячена дослідженню концептуальних засад інформаційно-комунікаційного забезпечення туристичних підприємств та розгляду практичних аспектів використання інформаційно-комунікаційних технологій підприємствами туризму. Акцентовано увагу на теоретичному дослідженні проблематики інформаційно-комунікаційних технологій у туризмі із визначенням найбільших вагомих наукових здобутків та дослідників у цій сфері. Узагальнено наукові та практичні підходи до*

інформаційно-комунікаційних технологій, як частини інформаційно-комунікаційного забезпечення туристичного підприємства, зокрема, економічний, технічний, соціальний, психологічний та міждисциплінарний підходи. Розглянуто основні етапи у впровадженні ІКТ із короткою характеристикою кожного із них. Здійснено групування найбільш значущих та популярних видів ІКТ підприємствами туризму, де для кожного із видів розглянуто основні ІКТ, що характерні саме для них, а також спільні, які можуть використовуватися декількома. У роботі акцентовано увагу на видах ІКТ, що використовуються у практичній діяльності авіакомпаніями, закладами розміщення, закладами харчування, туристичними операторами та туристичними агентствами. Для досягнення стратегічних цілей туристичним підприємством запропоновано методологічний щодо інформаційно-комунікаційного забезпечення, який передбачає реалізація п'яти базових етапів із виокремленням відповідних цілей на кожному із них для формування комплексного підходу, який дозволить виявити не лише проблемні питання, але й знайти резерви для їх вирішення. Запропоновано для оцінки ефективності вебсайту туристичного підприємства використання когортного аналізу, що дозволяє групувати споживачів за визначеними ознаками та формувати відповідні стратегії для покращення операційної діяльності. Наведено основні етапи роботи з когортним аналізом для досягнення стратегічних цілей туристичного підприємства. Для обгрунтування ефективності впровадження програмного забезпечення запропоновано застосовувати когнітивне моделювання, що дозволяє поєднувати суб'єктивні та об'єктивні оцінки. Використання запропонованих підходів до використання різних видів ІКТ туристичними підприємствами дозволятиме досягнути визначених завдань не лише у довгостроковій, але й короткостроковій перспективах.

Ключові слова: *інформаційно-комунікаційні технології, інформаційно-комунікаційне забезпечення, туристичне підприємство, системи бронювання, вебсайт, когортний аналіз, когнітивне моделювання*

Formulation of the problem. Tourism is a field of activity designed to satisfy the tourist's desire for rest, recovery and acquisition of new experiences. The development of tourism, its forms and types significantly influenced consumer behavior, as well as directly, the tourist himself changed tourism. That is, there was always communication between the tourist and the representatives of the tourist business, which allowed to satisfy the tourist demand with the corresponding tourist offers, or the offer produced demand from tourists. After the pandemic, the format of communication, as well as the actions of stakeholders, transformed to the O2O format – from offline to online. It is worth noting that the transition to this option of interaction was gradually gaining momentum [1], but it was the COVID-19 pandemic that became the catalyst [2; 3; 4], accelerating the transition of various spheres and branches of the economy in order to be able to hold on and, in the future , to develop Tourism enterprises, as one of those who led the first positions in the use of modern technologies, with the beginning and after the pandemic continue to take the lead in the application of modern ICT and the achievement of the set goals [5; 6], including the Sustainable Development Goals [7] .

Analysis of recent research and publications. Tourism and travel are innovative and constantly introducing the latest technologies, which are based on the combination of communication and information technologies. Since communication is the basis of interaction in tourism, and information technologies ensure their effectiveness, accordingly, this issue is in the center of attention of researchers from different countries of the world. According to Murphy P. [8], tourism is created on resources, where ignoring its social and ecological consequences creates risks for further existence. In the study of Bruce

M. [9], it was determined that the tourism business became an active user of information technologies that transformed the entire industry, creating competitive advantages for it that significantly distinguished tourism from others. We believe that Bruce M. successfully focused the research on the identification of consequences in the tourism sector from the introduction of information technologies, such as changes in the level of employment or personnel hiring policy, communication and sales processes.

Information technology (IT), as a component of ICT, is decisive among all tasks at the level of tactical or strategic management of a tourist enterprise [10]. According to Buhalis D., information is the basis of tourism, creating opportunities and challenges for the tourism sector. Therefore, the development of IT will always be conditioned by the changes that occur in this area, that is, this process is not static, but will be in a dynamic state. If we consider the use of ICT in tourism, then from a scientific point of view, many scientific works are devoted to this field of research both among foreign researchers – Buhalis D. [10], Bethapudi A. [11], Gonzalez R. [12], Law R. [13], as well as domestic ones – Boyko M. [14], Dyachenko Yu. [15], Melnychenko S. [16], Mykhailichenko G. [17], Podzigun S. [18], Sushchenko O. [19], Trunina I. [20] and others. At the same time, despite the significant scientific research of information and communication technologies in the field of tourism, it is insufficient to consider the issues related to the formation and components of information and communication support of tourist enterprises.

The purpose of the article is the disclosure of the conceptual foundations of information and communication technologies and practical aspects of information and communication provision of tourist enterprises, with the aim of highlighting the most significant types of ICT and tools for determining such influence on the activities of tourist enterprises.

Presenting main material. The issue of the use of information and communication technologies by tourist enterprises actively began to gain

popularity from the mid-90s to the beginning of 2000, which was reflected in the issue of automation of the tourist business, the use of computer reservation systems, strategies of tourist enterprises, based on the introduction of ICT. According to the results of the study [21], Werthner H. and Klein S. evaluated the main strategies of tourism enterprises that use ICT, highlighting the structural changes that the introduction of ICT led to, and Bennett M. [22] conducted a study of the impact of information technologies in the activities travel agents for customer service, which resulted in highlighting both positive practices and negative results.

The issue of information and communication technologies and the formation of their support is in the center of attention of scientific researchers and professional practitioners. In the context of tourism and the use of innovative technologies, it is worth mentioning the approaches in the study of the relevant issues. In particular, it is possible to single out those that consider ICT multifunctionally, namely:

- a technical approach in which ICT is considered in terms of technological aspects such as hardware, software, networks, etc. The main task is the development, implementation and support of technical solutions for information processing and transmission.
- an economic approach, where ICT is considered as an economic resource that affects the productivity and competitiveness of enterprises, and, accordingly, also spheres and branches of the economy. According to this approach, the main purpose of ICT is to focus on its value, functionality and creation of competitive advantages.
- a social approach, where ICTs are considered from the point of view of their impact on society and people. The main task is effective communication between different participants.

- the psychological approach focuses on how ICT affects user behavior, how gadgets and computers are used from the point of view of psychology, and the level of information perception.
- an interdisciplinary approach that encompasses elements such as environmental, cultural, political for a deeper understanding of ICTs and their impact.

Interpretation of ICT by different organizations and researchers is carried out differently, distinguishing specific features and providing common characteristics. Accordingly, in our opinion, information and communication technologies in tourism are technologies that work with information at all its stages and create opportunities for further use for the purposes of the tourism enterprise and other interested participants, as well as promote effective communication between all stakeholders in tourism.

The evolution of information and communication technologies has been their gradual development in the travel industry, where the Internet has had a profound impact on how people plan, book, experience and share their travel experiences, and travel companies create and promote travel services in the market. Based on the approach proposed by Gössling S. [23], tourism went through certain stages in the implementation of ICT, where, in our opinion, the most important events were: the emergence and development of the Internet, which was characterized by the emergence of the first websites for booking hotels and airline tickets, online sale of package tours, online registration; the development of mobile technologies that have transformed the use of ICT; social networks, the contribution of which was reflected through photo and video content and reviews and recommendations; new technologies that contributed to the creation of additional demand by involving VR, AR, MR technologies and other innovative technologies; artificial intelligence, which has the potential for a new transformation of tourism and other areas of the economy.

Since information and communication technologies are actively implemented by tourism enterprises, therefore, it is advisable to group the most significant and popular types of them (Table 1).

Information and communication technologies laid the foundation for the information society and informatization of all spheres of life. At the global and regional levels, the importance of informatization, and in modern conditions, digitalization have become extremely important, and therefore, urgent issues. The business also adheres to the concept of digitalization, which is implemented by appropriate digital tools, the basis of which is ICT.

The conceptual foundations of the introduction of information and communication technologies in Ukraine in the field of tourism were laid down in the Strategy for the Development of the Information Society in Ukraine [24], the Basic Principles of the Development of the Information Society in Ukraine 2007-2015 [25], the Concept of the Development of the Digital Economy and Society of Ukraine 2018-2020 [26].

In connection with the use of the Internet, the traditional economy has changed to an electronic format, so the use of ICT helps to stimulate the development of e-business. With the emergence of new types of technologies, in particular digital ones, the question arose of using this type to increase competitiveness both at the global and local levels. Digitalization of business is an important part of the transformation process, as well as a factor in the growth of the country's economy.

Table 1

Key types of information and communication technologies at tourism enterprises

<table>
<tr><th>Airlines</th><th>Hotels and other accommodation facilities</th><th>Restaurants and other food establishments</th><th>Tourist operators</th><th>Travel agencies</th></tr>
<tr><td>Reservation systems
Flight management systems
Passenger service systems
On-board entertainment systems.
Monitoring of flight data
Maintenance, repair and overhaul systems
Baggage tracking systems
Electronic ticket sales
Airline flight management systems</td><td>Property management systems
Hotel management systems
Systems of channel managers
Room technologies
Energy management systems</td><td>Restaurant management systems
Digital menu panels.
Online delivery platforms.
Inventory management systems
Systems of kitchen showcases
Food waste management</td><td>Travel operator software.
Geoinformation systems.
Electronic ticket sales</td><td>Electronic ticket sales
Platforms for booking individual components of the tourist product.</td></tr>
<tr><td></td><td colspan="2">Point of sale systems</td><td></td><td></td></tr>
<tr><td colspan="4">Technologies of augmented reality (VR, AR, MR).</td><td></td></tr>
<tr><td colspan="5">Customer relationship management, online booking systems, communication platforms, guest feedback and survey systems, loyalty systems and bonus programs, revenue management systems, human resource management, websites, social media and online marketing, mobile payment systems, processing systems payments, security and surveillance systems, data analysis and business intelligence for strategic decision-making</td></tr>
</table>

Source: author's development

The importance of information and communication support for tourist enterprises is actualized in its development, which is explained by a strategic approach to the functioning of the enterprise. Therefore, a methodological approach (Fig. 1) is important, the purpose of which is a comprehensive vision of the necessary availability and effective use of all information and communication support to achieve the strategic goals of the tourist enterprise. Successive implementation of all the necessary steps united by the common goal of ensuring the operation and development of the enterprise will reveal not only problems, but also reserves and opportunities for more successful operation.

Among the wide variety of information and communication technologies used by tourism enterprises in order to achieve competitive advantages in the strategic development of tourism enterprises, both the website and specialized software play an important role. To study the influence of the website on the activities of tourist enterprises, it is proposed to use cohort analysis – the purpose of which is to study the behavior and interaction of users on the websites of tourist enterprises. This analysis allows users to be grouped by common characteristics and to observe their activities over a defined period of time [27].

The research methodology for conducting cohort analysis involves the implementation of successive stages (Fig. 2).

The purpose of conducting cohort analysis is to increase the effectiveness of the website of a tourist enterprise, which allows creating the most optimal models (framing) for appropriate actions with defined cohorts. Based on the results of the cohort analysis, the tourism enterprise can implement effective marketing strategies, optimizing those stages of the life cycle where problems arise. Cohort analysis allows you to gain a deeper understanding of user interaction with a travel company's website and identify opportunities for optimization and business performance improvement.

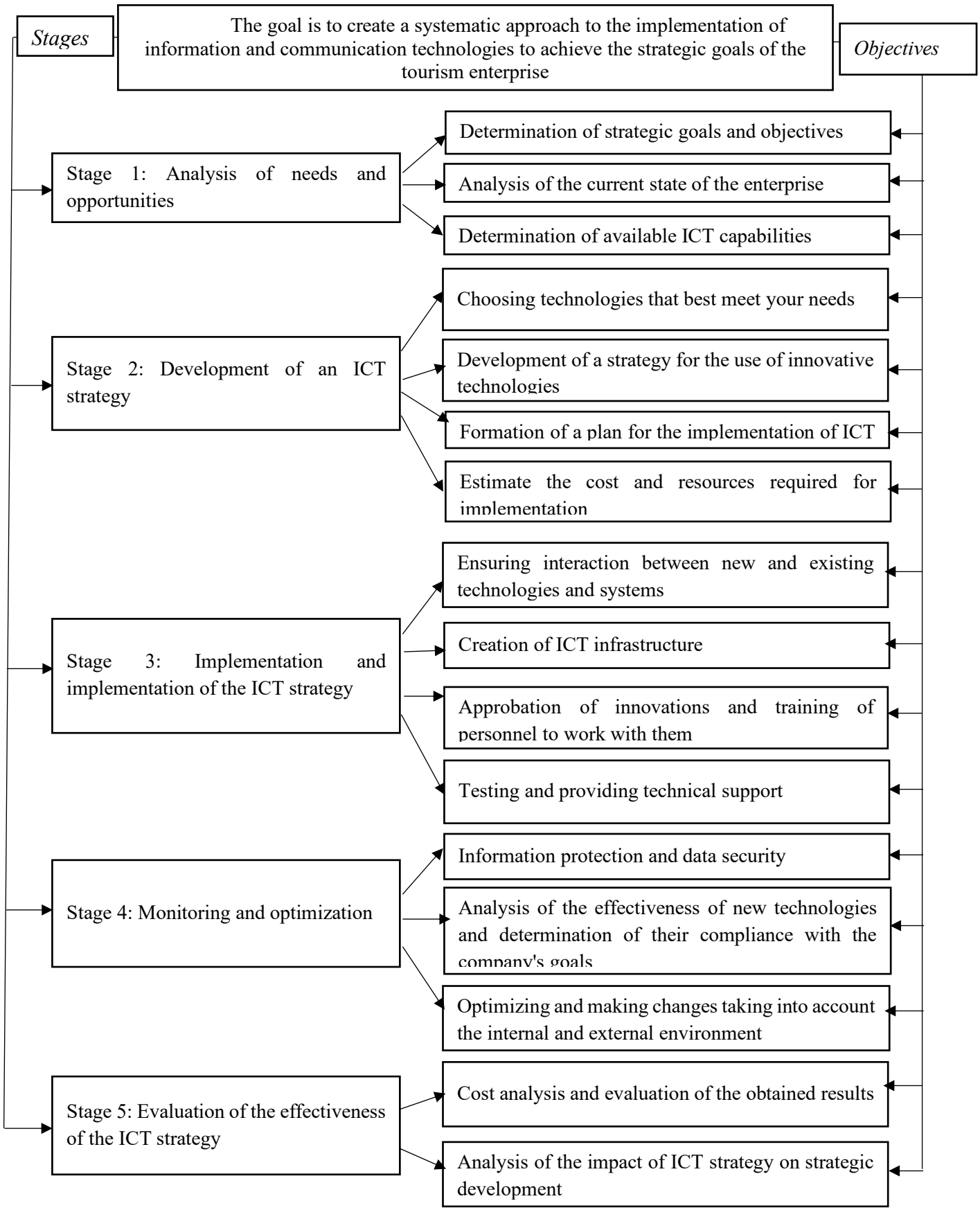

Fig. 1. Methodological foundations of information and communication support for the strategic development of a tourist enterprise

Source: author's development

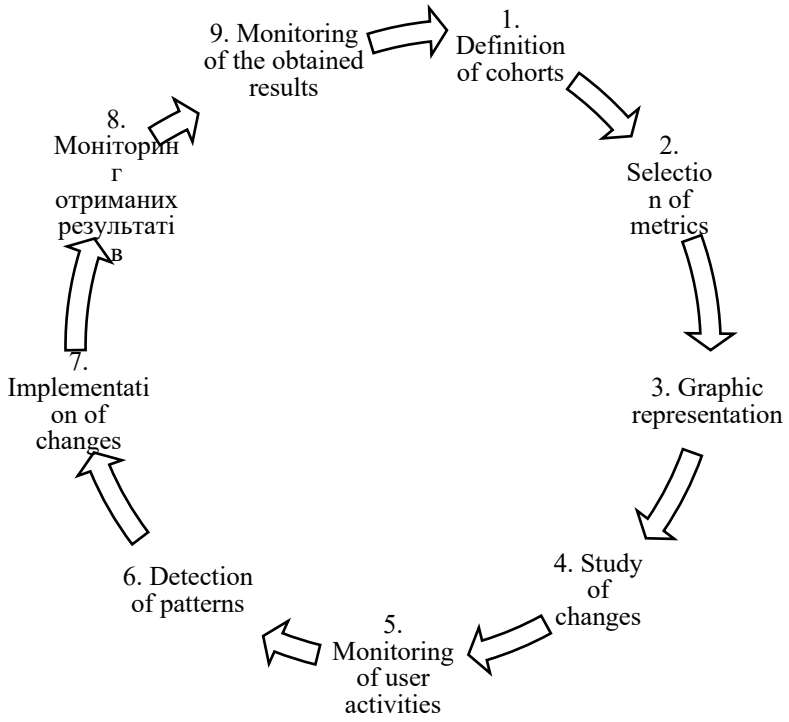

Fig. 2. Algorithm for carrying out cohort analysis of a tourist enterprise

Source: author's development

Among the important tools that can be used by tourism enterprises in evaluating the use of ICT is the application of cognitive modelling. In particular, the expediency of such an approach is relevant when analyzing the implementation of new software or replacing the existing one. Modelling of business processes can serve as a universal tool when making appropriate management decisions, as it allows you to simulate the situation taking into account various factors or development scenarios, identify possible risks and develop strategies for their management. Also, the use of modelling in business activities allows you to assess the situation where there is a limitation of quantitative data or they are absent, thus, models can be used to solve complex problems that are difficult or even impossible to solve by analytical methods. The advantages of modelling include obtaining a specific methodology, which will allow finding solutions to problematic issues. Axelrod R. [28] is considered to be the founder of cognitive modelling methodology, where situation modelling can be based on subjective judgments and assessments of experts [29]. When building

a cognitive model, or as it is often called a map or an alphabet, important components are the structuring of information (identification of key factors) and the construction of a model based on cause-and-effect relationships between selected factors.

Based on the approach of O. Lebid [30], that the cognitive map is a weighted digraph with vertices, the target (privileged) vertex can be, for example, the level of software usage by a tourist enterprise with arcs that reflect the degree of relationship between the vertices selected for the model. This approach makes it possible to determine the most important influencing factors for the enterprise, which can have both a positive effect from the implementation of the software and a negative one, where, for example, automation can lead to a reduction in personnel or affect a significant increase in costs. In addition, the use of cognitive modelling also involves the construction of development scenarios, which allows for strategic evaluation of the use of software in the activities of a tourist enterprise.

Conclusions and prospects for further research. The implementation of ICT is a strategic tool for tourism enterprises, which allows to obtain competitive advantages and improve the level of profitability, mostly from the point of view of their long-term use. In particular, information and communication tools can be used to gather data about customer preferences, market trends and competitors. This information is vital for making informed strategic decisions, such as pricing strategies, working with target audiences, and when developing a new or improving travel product. The variety of types of ICT, in modern conditions, allows their use in different periods with success even in the short term. For a tourist enterprise, not only the use of effective information and communication technologies, but also the use of appropriate tools, which will allow to evaluate the effectiveness of using each of them with the maximum benefit for the enterprise, becomes especially relevant.

In further scientific research, it is important to focus on measuring the effectiveness of the use of various types of information and communication technologies in the activities of tourism enterprises. It is important to have a reasoned approach to innovative technologies that dynamically appear and are modified in the modern conditions of conducting business activities.

Literature

1. Clemons E. K., Hann I. H., Hitt L. M. Price dispersion and differentiation in online travel: An empirical investigation. *Management science*. 2002. 48(4). P. 534-549.
2. Toubes D. R., Araújo Vila N., Fraiz Brea J. A. Changes in consumption patterns and tourist promotion after the COVID-19 pandemic. *Journal of Theoretical and Applied Electronic Commerce Research*. 2021. 16(5). P. 1332-1352.
3. Venherska N., Voronkova V., Cherep A., Cherep O., Bezkorovaina L. Directions of digital transformation of creative technologies in touristic field after the cob of the COVID-19 pandemic. *Humanities Studies*. 2021. Vol. 9, No. 86. P. 168-179.
4. Zhao Y., Wang H., Guo Z., Huang M., Pan Y., Guo Y. Online reservation intention of tourist attractions in the COVID-19 context: An extended technology acceptance model. *Sustainability*. 2022. 14(16). P. 10395.
5. Benckendorff P. J., Xiang Z., Sheldon P. J. Tourism information technology. *Cabi.* 2019.
6. Gössling S. Tourism, technology and ICT: a critical review of affordances and concessions. *Journal of Sustainable Tourism*. 2021. 29(5). P. 733-750.
7. Sharpley R. Tourism, sustainable development and the theoretical divide: 20 years on. *Journal of Sustainable Tourism*. 2020. 28(11). P. 1932-1946.
8. Murphy P. E. Tourism as a community industry – an ecological model of tourism development. *Tourism Management*. 1983. 4(3). P. 180-193.

9. Bruce M. New technology and the future of tourism. *Tourism Management*. 1987. 8(2). P. 115-120.
10. Buhalis D. Strategic Use of Information Technologies in the Tourism Industry. *Tourism Management*. 1998. 19 (5). P. 409-421. doi: 10.1016/S0261-5177(98)00038-7.
11. Bethapudi A. The role of ICT in tourism industry. *Journal of Applied Economics and Business*. 2013. 1(4). P. 67-79.
12. Gonzalez R., Gasco J., Llopis J. Information and communication technologies and human resources in hospitality and tourism. *International Journal of Contemporary Hospitality Management*. 2020. 32(11). P. 3545-3579.
13. Buhalis D., Law R. Progress in information technology and tourism management: 20 years on and 10 years after the Internet – The state of eTourism research. *Tourism Management*. 2008. 29(4). P. 609-623.
14. Boiko M., Bosovska M., Vedmid N., Melnychenko S., Stopchenko Y. Digitalization: Implementation in the Tourism Business of Ukraine. *Problems and Perspectives in Management*. 2022. 20. P. 24-41.
15. Nenkov N., Sushchenko O., Dyachenko Y. Role of chief information officer within the system of human resource development in service organizations (tourism). *Economic Annals-XXI*. 2017. 165. P. 97-103.
16. Melnychenko S., Tkachenko T., Dupliak T. Digitalization as a Tool of Tourism Rcovery in European Union in Post-COVID-19. *Financial and Credit Activity-Problems of Theory and Practice*. 2021. P. 427-436.
17. Михайліченко Г. І. Інноваційний розвиток туризму: монографія. К.: Київ. нац. торг.-екон. ун-т., 2012.
18. Подзігун С., Малярчук Н., Любивий О. Управління інформаційно-комунікаційною політикою у сфері туризму. *Економіка та суспільство*. 2023. 53. doi: https://doi.org/10.32782/2524-0072/2023-53-49.

19. Сущенко О. А., Кравченко В. В. Становлення віртуального туризму як напряму розвитку інформатизації діяльності туристичного підприємства. *Комунальне господарство міст*. 2018. Вип. 140. С. 19-24.
20. Trunina I. M., Vartanova O., Sushchenko O. A., Onyshchenko O. Introducing ERP system as a condition of information security and accounting system transformation. *International Journal of Engineering & Technology*. 2018. 7 (4.3). P. 530-536.
21. Werthner H., Klein S. Information technology and tourism: a challenging ralationship. *Springer-Verlag Wien.* 1999. 323 p.
22. Bennett M. M. Information technology and travel agency: A customer service perspective. *Tourism Management.* 1993. 14(4). P. 259-266.
23. Gössling S. Tourism, technology and ICT: a critical review of affordances and concessions. *Journal of Sustainable Tourism*. 2021. 29(5). P. 733-750.
24. Про схвалення Стратегії розвитку інформаційного суспільства в Україні: Розпорядження Кабінету Міністрів України № 386-р від 15.05.2013 р. *Урядовий портал: офіційний вебпортал*. URL: https://www.kmu.gov.ua/npas/246420577 (дата звернення: 15.12.2023).
25. Про Основні засади розвитку інформаційного суспільства в Україні на 2007-2015 роки: Закон України № 537-V від 09.01.2007 р. *Урядовий портал: офіційний вебпортал.* URL: https://zakon.rada.gov.ua/laws/show/537-16#Text (дата звернення: 15.12.2023).
26. Про схвалення Концепції розвитку цифрової економіки та суспільства України на 2018-2020 роки та затвердження плану заходів щодо її реалізації: Розпорядження Кабінету Міністрів України № 67-р від 17.01.2018 р. *Урядовий портал: офіційний вебпортал*. URL: https://zakon.rada.gov.ua/laws/show/67-2018-%D1%80#Text (дата звернення: 15.12.2023).

27. Що таке когортний аналіз і для чого він необхідний. *London Product Academy*. 2023. URL: https://www.londonproduct.academy/post/shcho-take-kogortniy-analiz-i-dlya-chogo-vin-neobhidniy (дата звернення: 15.12. 2023).
28. Axelrod R. M. The structure of decision: The cognitive maps of political elites. Princeton: Princeton University Press, 1976. 404 p.
29. Томарева-Патлахова В. В. Когнітивна модель соціально-економічного розвитку регіонів в контексті децентралізації. *Ефективна економіка*. 2017. № 4. URL: http://www.economy.nayka.com.ua/?op=1&z=6017 (дата звернення: 15.12.2023).
30. Лебідь О. Ю. Побудова когнітивної моделі для аналізу діяльності електронних магазинів. *Ефективна економіка*. 2015. № 11. URL: http://www.economy.nayka.com.ua/pdf/11_2015/90.pdf (дата звернення: 15.12.2023).

References

1. Akresh, Clemons, E. K., Hann, I. H., & Hitt, L. M. (2002). Price dispersion and differentiation in online travel: An empirical investigation. *Management science, 48*(4), 534-549.
2. Toubes, D. R., Araújo Vila, N., & Fraiz Brea, J. A. (2021). Changes in consumption patterns and tourist promotion after the COVID-19 pandemic. *Journal of Theoretical and Applied Electronic Commerce Research, 16*(5), 1332-1352.
3. Venherska, N., Voronkova, V., Cherep, A., Cherep, O., & Bezkorovaina, L. (2021). Directions of digital transformation of creative technologies in touristic field after the cob of the COVID-19 pandemic. *Humanities Studies, 9* (86), 168-179.

4. Zhao, Y., Wang, H., Guo, Z., Huang, M., Pan, Y., & Guo, Y. (2022). Online reservation intention of tourist attractions in the COVID-19 context: An extended technology acceptance model. *Sustainability, 14*(16), 10395.
5. Benckendorff, P. J., Xiang, Z., & Sheldon, P. J. (2019). Tourism information technology. *Cabi.*
6. Gössling, S. (2021). Tourism, technology and ICT: a critical review of affordances and concessions. *Journal of Sustainable Tourism, 29*(5), 733-750.
7. Sharpley, R. (2020). Tourism, sustainable development and the theoretical divide: 20 years on. *Journal of Sustainable Tourism, 28*(11), 1932-1946.
8. Murphy, P. E. (1983). Tourism as a community industry – an ecological model of tourism development. *Tourism Management, 4*(3), 180-193.
9. Bruce, M. (1987). New technology and the future of tourism. *Tourism Management, 8*(2), 115-120.
10. Buhalis, D. (1998). Strategic Use of Information Technologies in the Tourism Industry. *Tourism Management*, *19* (5), 409-421. doi: 10.1016/S0261-5177(98)00038-7.
11. Bethapudi, A. (2013). The role of ICT in tourism industry. *Journal of Applied Economics and Business, 1*(4), 67-79.
12. Gonzalez, R., Gasco, J., & Llopis, J. (2020). Information and communication technologies and human resources in hospitality and tourism. *International Journal of Contemporary Hospitality Management, 32*(11), 3545-3579.
13. Buhalis, D., & Law, R. (2008). Progress in information technology and tourism management: 20 years on and 10 years after the Internet – The state of eTourism research. *Tourism Management, 29*(4), 609-623.
14. Boiko, M., Bosovska, M., Vedmid, N., Melnychenko, S., & Stopchenko, Y. (2022). Digitalization: Implementation in the Tourism Business of Ukraine. *Problems and Perspectives in Management, 20,* 24-41.

15. Nenkov, N., Sushchenko, O., & Dyachenko, Y. (2017). Role of chief information officer within the system of human resource development in service organizations (tourism). *Economic Annals-XXI, 165* 97-103.
16. Melnychenko, S., Tkachenko, T., & Dupliak, T. (2021). Digitalization as a Tool of Tourism Rcovery in European Union in Post-COVID-19. *Financial and Credit Activity-Problems of Theory and Practice*, 427-436.
17. Mykhailichenko, H. I. (2012). Innovatsiinyi rozvytok turyzmu: monohrafiia [Innovative development of tourism: monograph]. K.: Kyiv. National Trade and Economy University [in Ukrainian].
18. Podzigun, S., Malyarchuk, N., & Lyubivy, O. (2023). Upravlinnia informatsiino-komunikatsiinoiu politykoiu u sferi turyzmu [Management of information and communication policy in the field of tourism]. *Ekonomika ta suspilstvo, 53*. doi: https://doi.org/10.32782/2524-0072/2023-53-49 [in Ukrainian].
19. Sushchenko, O. A., & Kravchenko, V. V. (2018). Stanovlennia virtualnoho turyzmu yak napriamu rozvytku informatyzatsii diialnosti turystychnoho pidpryiemstva [The formation of virtual tourism as a direction of development of informatization of the activity of a tourist enterprise]. *Komunalne hospodarstvo mist, 140,* 19-24 [in Ukrainian].
20. Trunina, I. M., Vartanova, O., Sushchenko, O. A., & Onyshchenko, O. (2018). Introducing ERP system as a condition of information security and accounting system transformation. *International Journal of Engineering & Technology, 7* (4.3), 530-536.
21. Werthner, H., & Klein, S. (1999). Information technology and tourism: a challenging ralationship. *Springer-Verlag Wien.*
22. Bennett, M. M. (1993). Information technology and travel agency: A customer service perspective. *Tourism Management, 14*(4), 259-266.

23. Gössling, S. (2021). Tourism, technology and ICT: a critical review of affordances and concessions. *Journal of Sustainable Tourism, 29*(5), 733-750.
24. Pro skhvalennia Stratehii rozvytku informatsiinoho suspilstva v Ukraini: Rozporiadzhennia Kabinetu Ministriv Ukrainy [On the approval of the Information Society Development Strategy in Ukraine: Decree of the Cabinet of Ministers of Ukraine]. *Government portal*. Retrieved from https://www.kmu.gov.ua/npas/246420577 [in Ukrainian].
25. Pro Osnovni zasady rozvytku informatsiinoho suspilstva v Ukraini na 2007-2015 roky: Zakon Ukrainy [On Basic Principles of Information Society Development in Ukraine for 2007-2015: Law of Ukraine]. *Government portal*. Retrieved from https://zakon.rada.gov.ua/laws/show/537-16#Text [in Ukrainian].
26. Pro skhvalennia Kontseptsii rozvytku tsyfrovoi ekonomiky ta suspilstva Ukrainy na 2018-2020 roky ta zatverdzhennia planu zakhodiv shchodo yii realizatsii: Rozporiadzhennia Kabinetu Ministriv Ukrainy [On the approval of the Concept of the development of the digital economy and society of Ukraine for 2018-2020 and the approval of the plan of measures for its implementation: Decree of the Cabinet of Ministers of Ukraine]. *Government portal*. Retrieved from https://zakon.rada.gov.ua/laws/show/67-2018-%D1%80#Text [in Ukrainian].
27. Shcho take kohortnyi analiz i dlia choho vin neobkhidnyi [What is cohort analysis and why is it necessary?]. (2023). *London Product Academy*. Retrieved from https://www.londonproduct.academy/post/shcho-take-kogortniy-analiz-i-dlya-chogo-vin-neobhidniy [in Ukrainian].
28. Axelrod, R. M. (1976). The structure of decision: The cognitive maps of political elites. Princeton: Princeton University Press.

29. Tomareva-Patlahova, V. V. (2017). ohnityvna model sotsialno-ekonomichnoho rozvytku rehioniv v konteksti detsentralizatsii [Cognitive model of socio-economic development of regions in the context of decentralization]. *Efektyvna ekonomika, 4.* Retrieved from http://www.economy.nayka.com.ua/?op=1&z=6017 [in Ukrainian].
30. Lebid, O. Y. (2015). Pobudova kohnityvnoi modeli dlia analizu diialnosti elektronnykh mahazyniv [Building a cognitive model for the analysis of electronic stores]. *Efektyvna ekonomika, 11*. Retrieved from http://www.economy.nayka.com.ua/pdf/11_2015/90.pdf [in Ukrainian].