

1. Panel discussions
HOSPITALITY AND TOURISM 4.0:
CONCEPTS, STRATEGIES, FORECASTS

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FROM INDUSTRY 4.0. TO SOCIETY 5.0:
PRAGMATIC INTEGRALIZATION OF TOURISM

To solve the strategic tasks of sustainable economic growth, overcoming the effects of the global epidemiological crisis, informatization, digitalization, innovation, integration of the economy, the need to form a new vector of tourism system development based on the transformation of the economic concept of Industry 4.0. in the paradigm of Society 5.0. is defined. The conclusion about scientific interest to problems of formation of the concept Society 5.0 and fragmentariness together with debatability of existing developments, which limits the ability of their application in tourism, is made.

The genesis of the model of economic system «Industry 1.0. – Society 5.0» through a combination of stages of progressive (evolutionary) and rapid (revolutionary) development based on the introduction of a pool of innovative technologies that cover

all areas of society and is characterized by displacement of certain immanent attributes of the previous period is viewed.

The article examines the phenomenon of Society 5.0. at the global and industry (tourism) level, the attributes of which are defined: big data and analytics; autonomous robots; simulation; horizontal and vertical system integration; The Internet of Things; smart cities; cyber security; the cloud; Additive Manufacturing; virtual reality (augmented reality) and implemented the basic principles of the concept in the field of tourism. Theoretical generalization of the provisions of the concepts of society development at different hierarchical levels of the economic system allowed implementing the foresight concept of Society 5.0. in the field of tourism, determining global trends in the field of realization of potential opportunities for the development of the tourism industry.

Defining Trends in Society 5.0. in the field of tourism, allowed to state economic, organizational and managerial social and environmental challenges, risks and threats as a consequence of the implementation and strategic provisions of the concept. It is substantiated that the implementation of the management model Society 5.0. will create unique opportunities, competitive advantages and will provide economic, social and environmental benefits for the tourism industry.

The evaluation of the effectiveness of the concept Society 5.0 provisions implementation and the level of innovative development of tourism entities on the basis of a multi-attribute approach by determining the portfolio of quantitative and qualitative parameters and attributes taking into account the organizational, managerial, economic, social aspects of the activity was carried out.

Theoretical and methodological bases of the concept of Society 5.0 are offered and strategic directions of their implementation in the sphere of tourism will allow to develop the basis of the society economic development paradigm and to realize the foresight of the national tourist system.

Keywords: *Industry 4.0., Society 5.0., Economic challenges, economic trends, tourism, tourism system, tourism industry, tourism entities, sustainable development, innovative development, innovation, paradigm, concept, efficiency, digital economy, digitalization, integralization.*

Relevance of research topic. *Global and crisis economic challenges and transformations, epidemiological crises and external self-isolation of countries, informatization, digitalization, innovation of economic processes, led to the acceleration of structural and functional changes in the world economy and in national and sectoral economic systems. In a survey of top managers of the world's largest companies, presented at the annual World Economic Forum in Davos city (2019) it has been determined, that turbulence of the external environment of international business is a threat to global economic growth. Respondents indicated that during 2020 the world economy growth will slow down [1; 3; 4]. And significantly, that almost six times more*

respondents than in last year's survey, state the negative trends. The challenges of the XXI century are identified, namely: economic factors, existential factors, social policy, international conflicts, political uncertainty, geopolitical problems, protectionism, terrorism, epidemiological, environmental and climatic crisis [1; 2], which are based on the imperatives of Industry 4.0.

Defining the directions of transformation to Society 5.0, it is emphasized that the focus is on solving problems of forming a socially-oriented environment to ensure the goals of sustainable development, effective human resource management and removing barriers to self-realization of each person in society. The mentioned factors will ensure the social and economic growth of economic systems on the principles of Society 5.0. [5; 6].

The epidemic crisis caused by the spread of the coronavirus, which has become a pandemic, is actively weakening the world economy, constraining its growth and is an unpredictable challenge for the world community. According to the analysis of the World Trade Organization, decrease in trade in 2020 may be reduced by 13–32% [1], according to the forecasts of the Ifo Institute for Economic Research at the University of Munich, the decline in world GDP could reach 1.5–6% [12], the IMF (International monetary fund) predicts a decline in the world economy to 3% [13]; at the United Nations Conference on Trade and Development (UNCTAD) forecast a reduction in direct investment by 5–15% [14].

According to the analytical forecasts of the World Travel and Tourism Council (WTTC), the World Tourism Organization (UNWTO), the global tourism industry in 2020 will undergo a significant crisis decline in activity from 20 to 30%, in particular in January–April 2020, a decrease in sales of travel companies by 84%, air transport - 76%, hotels and restaurants – 68%, recreation and entertainment – 43% [15].

However, analysts are certain that tourism has a real opportunity to recover quickly and become a strategic sector, which will ensure post-crisis recovery and sustainable growth of both international and national economies, creating a multiplier effect in related and neighboring industries [15].

The importance and prospects of tourism are convincingly evidenced by macroeconomic trends, trends in its development in the world. According to the analytical findings of the World Travel and Tourism Council (WTTC), the World Tourism Organization (UNWTO), the global tourism industry before the crisis provided annual growth of tourist flow, by 3.8–5% since the 50s of the twentieth century, and foreign exchange earnings from tourism – up to 6%. The world's tourism sector generates about 10% of world investment, every 10th place in world employment, up to 7% of world GDP, which is 1.4 trillion dollars per year or \$ 4 billion per day of foreign exchange earnings [8, 9, 10].

Graphically, the general economic parameters of tourism development in the world, that display changes in absolute indicators of the number of tourists and revenues, is shown in Figure 1 and 2. The largest growth of tourist activity was in 1950–1960 (10,6%) and 1960–1970 (9,1%). It is this period is regarded as the phase of tourism mass growth.

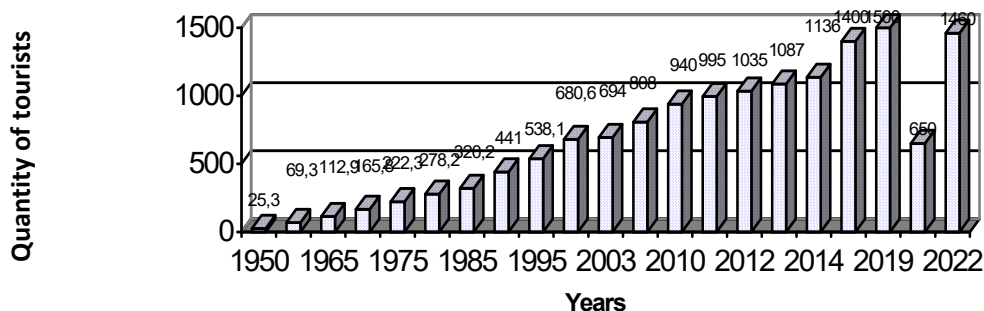


Fig. 1. Dynamics of international tourist arrivals in the world from 1950 to 2022, million people

Source: developed and calculated by the authors based on [7–11].

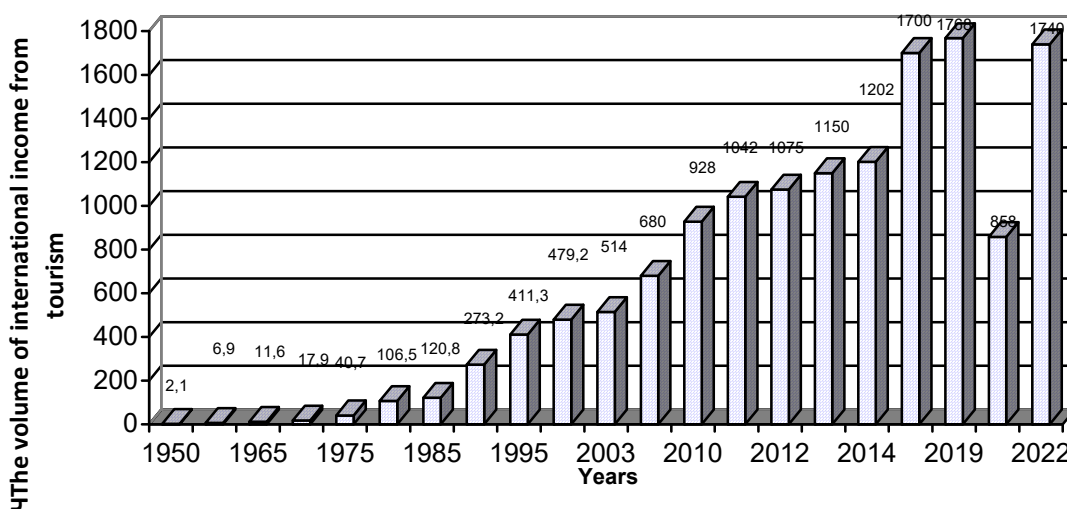


Fig. 2. Dynamics of the volume of international revenues from tourism in the world from 1950 to 2022, billion US dollars

Source: developed and calculated by the authors based on [7–11].

Since the early 90's of the twentieth century the average annual growth rate of tourist flows is believed to have stabilized at 3.8–5% and exceeds the long-term forecast for the development of the world's tourism sector by 2030 (up to 3.8%). At the same time, in certain periods – 2004, 2009, according to forecasts – in 2020 there is a decrease in indicators as a result of global economic crises, followed by stages of accelerated growth. Economic downturns create new opportunities for tourism development and provide a structural transformation of the world tourism system.

We need to grow more in value rather than just in volume. Digitalization, innovation, greater accessibility and societal changes are expected to continue shaping our sector. Both destinations and companies will need to adapt to remain competitive, while at the same time embracing tourism as a means of achieving the Sustainable Development Goals and building a better future for all [8, p.2].

Thus, the solution of strategic tasks to ensure sustainable economic growth, overcoming the effects of the global epidemic crisis determines the relevance of research in the field of tourism to identify a new vector of development which recognizes the effect of social transformation from Industry 4.0. to Society 5.0.

Formulation of the problem.

Identification of trends and challenges for tourism development, in view of the threats that have arisen after the implementation of the imperatives of Industry 4.0, will create new opportunities and will identify strategic prospects for the development of the tourism sector, which will be the driver of its integration into the global socio-economic area, taking into account the requirements of the concept of society 5.0. The importance of the tasks to be solved on the provisions of the concept of society 5.0 to intensify the development of tourism determined the relevance of the article.

Analysis of recent researches and publications. The concept of «Industry 4.0.» was declared in 2011 at the industrial exhibition in Hanover (Germany) by Kagermann H., Lukas W.-D., Wahlster W. (2011) as the ideology of the introduction of information technology and the formation of information systems in the processes of production, management, distribution at all levels economic systems to form a competitive advantage [16]. Principles of implementation of the concept of Industry 4.0. became a key issue of the annual meetings led by the World Economic Forum in Davos [1; 15]. According to the consulting company Roland Berger, the EU economy will not receive \$ 605 billion by 2027 if it ignores the requirements of Industry 4.0, and if they are met, the potential profit will be 1.25 trillion dollars [17].

Practical significance of Industry 4.0. became a prerequisite for the study of its phenomenon by the world scientific community, in particular Hoffmann R. (2016) considered aspects of the formation of investment opportunities in Germany in the implementation of Industry 4.0. [18] .; Li Da Xu, Eric L. Xu & Ling Li (2018) identified forecasts and prospects for the introduction of structural elements of the concept in industry [19]; Branger, J., and Z. Pang (2015) revealed the content, process automation technologies and features of the Internet of Things trend [20]; Cheng, G., L. Liu, X. Qiang, and Y. Liu. (2016) investigated the Development and Application of Intelligent Manufacturing [21]; S. Kergroach (2017) and Frey, C. B., Osborne, M. A. (2017) predicted social changes, new challenges for the labor market related to the industrialization of the world economy and carried out a foresight of labor processes [22, 25]; the consequences of implementing the provisions of the concept of Industry 4.0. for social systems calculated Cetrulo, A., Nuvolari, A., (2019) [24], M. Ghobakhloo (2018) developed a methodology for designing robust maps of information processes [23]; Martinelli, A., Mina, A., & Moggi, M. (2019) established the role of innovation in the implementation of Industry 4.0 technologies [26]; Pardi, T. (2018) projected the impact of digitalization on certain sectors of the economy (automotive) [27].

It should be noted that the concept of Industry 4.0. focuses on technical, technological, informational aspects, however, does not pay attention to social

processes, environmental problems and the formation and development of human capital. The focus of scientific research was the need to form a concept of the future – Society 5.0., which with the active support of the principles of Industry 4.0. actualizes the need to create a new strategy for economic development of society Uemura, N. (2017) [28]. The idea of achieving the goals of humanism in the development of information space on the basis of the methodology of achieving coherence, complementarity and fractality of society as a self-organized system was developed by Nurullin, R. A. (2019) [29]. Berawi, M. A. (2019) argues the necessity of solving the environmental problems as a key determinant of the concept of Society 5.0. [30].

In the conditions of change caused by the fourth and fifth revolutions, and the formation of new types of relationships between economic entities require constructive scientific rethinking of the challenges, threats and opportunities for advanced development for business structures to take into account sectoral aspects. In the field of tourism, the problems of implementing certain aspects of the concept of Tourism 4.0 have been analysed by numerous scientists, namely: innovative models of tourism industry development were formed by Robinson, Victor Mueke and Schänzel, Heike A. A (2019) taking into account the needs of the generation Z, Vargas-Sánchez, Alfonso (2018, 2019)-based on the factors of the circular economy, Aldebert, B, Dang, RJ, Longhi, C (2011) – on the basis of innovative development, Bevolo, Marco (2019), Hughes, Karen and Moscardo, Gianna (2019), Law, R., Buhalis, D. and Cobanoglu, C. (2014), Navío-Marco, J., Ruiz-Gómez, L. and Sevilla-Sevilla, C. (2018), Gelter H (2017), Werthner, H., Alzua-Sorzabal, A., Cantoni, L., Dickinger, A., Gretzel, U., Jannach, D..... and Zanker, M.(2015), Yuan, Y., Tseng, Y. and Ho, C. (2018), Pencarelli, T. (2019) – based on the adaptation of digital and information technologies, mechanization and robotization of service and management processes, Atzori, L., Iera, A. and Morabito, G. (2014), Gretzel, U., Sigala, M., Xiang, Z. and Koo, C. (2015), Della Corte V, D'Andrea C, Savastano I, Zamparelli P (2017), Femenia-Serra F, Neuhofer B, Ivars-Baidal JA (2019) – through the creation of «smart» and start facilities, the introduction of intelligent technologies in the tourism industry, Lamsfus, C., Wang, D., Alzua-Sorzabal, A. and Xiang, Z. (2015), Liang, S., Schuckert, M., Law, R. and Masiero, L. (2017) Chen T, Drennan J, Andrews L, Hollebeek LD (2018) – involving social networks and communications, mobile applications, marketing tools and forecasting consumer behavior, Wu DC, Song H and Shen S (2017), Barile S, Ciasullo MV, Troisi O, Sarno D (2017) Li, Gang Wu, Doris Chenguang (2019) – by creating effective ecosystems [31–52]. The question of forming tourist systems, formulation of the concepts for the tourism industry development and solving applied problems of tourism development was carried out by the scientific school of Professor Mazaraki A., particularly in research of Mazaraki A., Boiko M, Bosovska M., Okhrimenko A., Melnychenko S., Zubko T., Vedmid N. (2017–2019) [60–65]. Certain aspects of business process management of tourism business entities were conducted by other scientists of Ukraine: Prymak T., Ivchenko L., Pohuda N., Levchenko V., Trynchuk V. (2020) – formation of a charter transportation system [66]; Trynchuk, V., Horyslavets P., Plonka, M. (2018) – insurance marketing [67]; Trynchuk, V., Khovrak, I., Dankiewicz, R., Ostrowska-Dankiewicz, A., Chushak-Holoborodko, A. (2019); Glonti, V., Trynchuk, V., Khovrak, I., Mokhonko, G., Shkrobot, M., Manvelidze L. (2020) insurance marketing; increasing the social responsibility of business and socialization of sustainable development [68; 69].

Critical conceptualization of theoretical achievements demonstrates the scientific interest to the problems of forming the concept of Society 5.0. The fragmentation and debatable nature of the existing developments limits the possibilities of their application in tourism. The unformedness of the holistic concept and the concept of society 5.0, groundlessness of its methodological basis and the importance of the tasks to be solved on its basis determined the relevance of the article.

Presenting main material. Implementation of innovations and industrial revolutions of the XX–XXI centuries has led to global structural and sectoral transformations of society, the consequences of which form a strategic vector for the development of both the world system and its individual components.

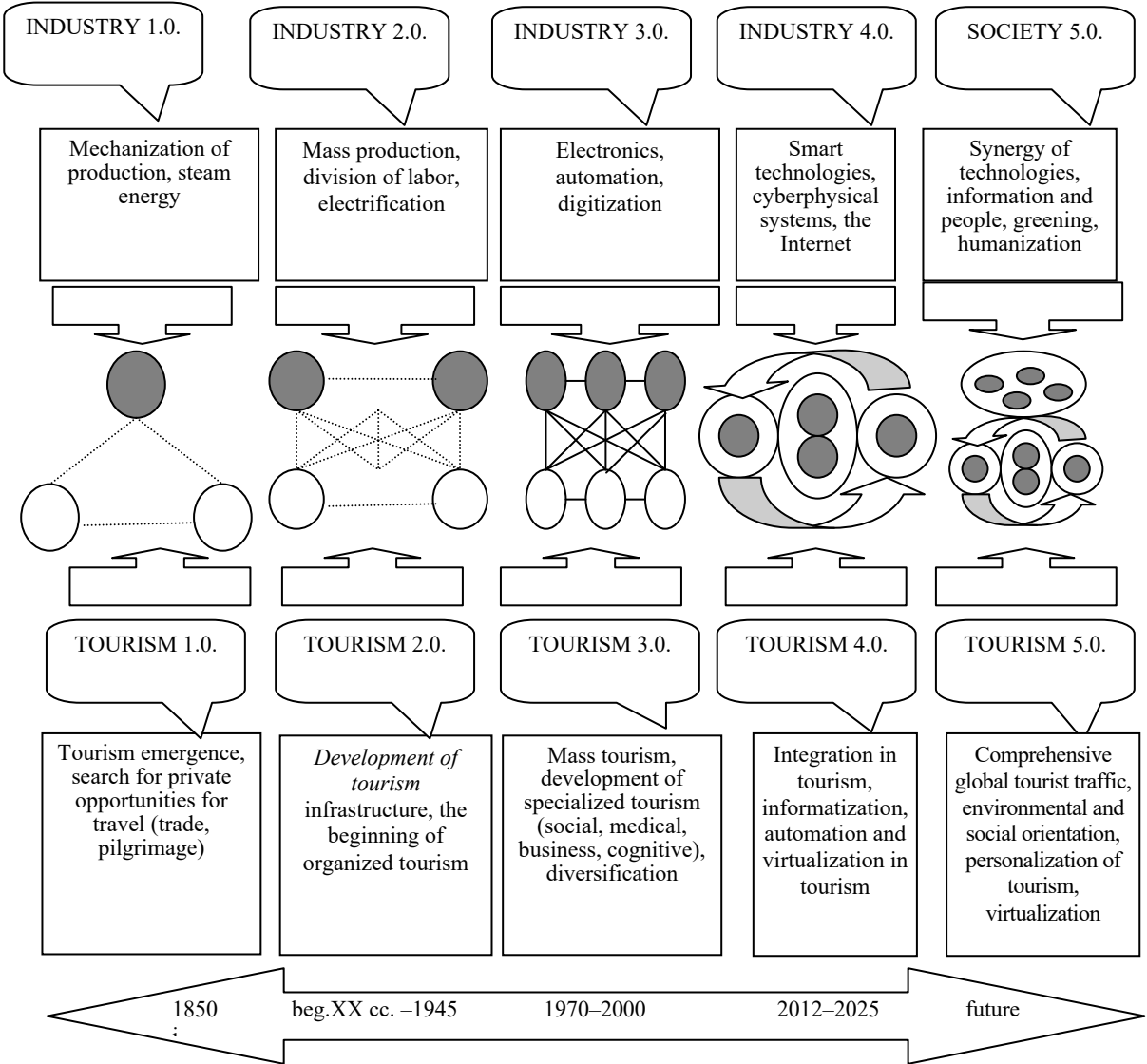


Fig. 3. Structural and dynamic aspects of the paradigm Society 5.0. development (revolution 5.0. through the evolution of society)

Since the early 90's of the twentieth century the average annual growth rate of tourist flows is believed to have stabilized at 3.8–5% and exceeds the long-term forecast for the development of the world's tourism sector by 2030 (up to 3.8%). At the

same time, in certain periods – 2004, 2009, according to forecasts – in 2020 there is a decrease in indicators as a result of global economic crises, followed by stages of accelerated growth. Economic downturns create new opportunities for tourism development and provide a structural transformation of the world tourism system.

As it can be seen on Figure 3. Industry 4.0 is defined as a global trend of modernity, its attributive features were formed by Kagermann H., Lukas W.-D., Wahlster W. (2011): big data and analytics; autonomous robots; simulation; horizontal and vertical system integration; the industrial internet of things; smart cities; cyber security; the cloud; additive manufacturing (3D printing); augmented reality) [1; 15; 18; 19; 21 and others]. The inherent features of Industry 4.0 are digitalization, automation and robotization of processes, digital development and rapid introduction of information and communication technologies in the practice of economic entities. However, it is characterized only by scientific and technical direction, and at the same time lives without attention social, environmental, humanitarian problems of society. Rafail Asgatovich Nurullin (2019) considers this a threat to the mankind, which makes it impossible to get out of crisis and reach new levels of civilization [29]. Deutsche Bank Research also confirmed the growing demand for social research [2].

Concept Society 5.0. should take into account the achievements of Industry 4.0, which is caused by technological innovations and negative consequences and risks – human devaluation, humanitarian problems and environmental safety. Global Architecture of Society 5.0 should be based on innovative development and technological change, as well as on ensuring the principles of sustainability, humanism, environmental friendliness, security, value orientation of society.

Global trends of the concept Society 5.0. defined in the context of immanent components:

- *structural changes in the world economy* (globalization trends and internationalization, crisis in the economy, complicating business conditions, changing the structure of industries and markets, convergence and unification of countries and business sectors, increasing competition, concentration of production and market monopolization);

- *scientific, technical and technological innovations* (artificial intelligence, nanotechnology, high-speed Internet, Internet of Things, virtual and augmented reality, blockchain, unmanned devices, robots lead to the formation of new market segments, redistribution of capital and investment between countries, regions and industries, changes in business models business organization, transformation of consumer expectations and needs, reformatting of operational and management processes of business entities, increasing the value of information);

- *urbanization and changing market conditions* (formation of cluster systems, development and promotion of destinations, emergence of new products and market offers, shortening of product life cycle, fluctuations of market conditions, formation of new consumer segments, access to new geographic markets, emergence of multinational companies and global projects to support certain industries, regions and countries);

- *demographic changes and social transformations* (population ageing, global labor market saturation (reduced demand, increased supply), massive job losses and increase in unemployment, the disappearance of entire industries and professions, especially those that do not require high skills (changing conditions), growing demand for highly qualified personnel (knowledge – the greatest value), informal employment, liberation from hard and routine work, change of human personality, as Industry 4.0 lays down new principles in ethics, aesthetics, reducing staff specialization);

- *climatic and environmental problems* (increasing the need for resources, increasing the requirements for environmental protection, creating environmentally friendly and resource-efficient industries, implementation of criteria and principles of sustainable development, development of technologies for environmental safety, rational use and saving of resources).

Foresight of the concept Society 5.0. in the field of tourism determines the following trends for the realization of potential opportunities for the development of both the subjects of the tourist sphere and the national tourist system.

Structural changes in favor of the tourism industry. Tourism of the XXI century has become a powerful highly profitable industry, intersectoral economic complex, type of economic activity, sphere of economic relations, which acts as a global communicator of world, national and regional economies, industries and spheres of activity, business structures and consumers, as well as an indicator of economic and social development. Tourism industry occupies 3 place in the world after the chemical and fuel industries, generates 3.6% of world GDP, has a steady high growth rate – up to 5% per year, its share in world exports of 7%, and in exports of services – more than 30%; it forms the positive image of the country in the world market. With a significant recession because of the global coronary virus pandemic [7–10], according to the UNWTO, OUN and WTTC, in 2 years there will be a full recovery of the number of international tourist arrivals in the world and the volume of foreign exchange earnings from tourism [15].

Internal transformations of the tourism industry, changes in market situations. Thus, the main areas of tourism should be new types of tourism products (unique tourist attractions, hotels and restaurants); new types of tourism (space tourism, e-tourism, interactive excursions), new tourist destinations, tourist routes and tourist destinations; new modes of transport (electric transport, spacecraft), organizational changes and innovative approaches in the consumption of tourist products (audio guides, interactive and virtual tourist facilities, etc.); value of intellectual objects (trademarks of international networks, corporate brands, service standards, corporate culture); introduction of new operational technologies (QR-coding, GPS-guides, 3D screens, VR-technologies, robots). Also relevant is the diversification of tourism products (geographical, consumer, market), which allows you to personalize the service in tourism and manage consumer behavior.

Active penetration and use of innovative digital technologies. Feature of tourism digitalization – automation of management and service processes at the local level and the formation of integrated information systems and platforms, as well as the

introduction of digital technologies in the activities of tourism businesses and tourism infrastructure. Philip Kotler (2019) defines that digital communication takes place both online and offline [53], with the help of Internet technologies or using any other digital media with digital channels, such as mobile devices; the Internet, as well as devices that provide access to it; local networks; digital television; POS-terminals and interactive screens.

According to the PwC UN report World Population Aging, the most effective and dynamic communication trend of the future is mobile devices and mobile applications (25% of all sales in tourism are mobile devices in 2017) [54]. The main purpose is to satisfy the impulsive needs of tourists and to optimize communication channels and sales of business entities in the field of tourism. In tourism industry the following types of mobile apps exist: translators, maps, hotel reservations (Hotellook, Booking), purchase of tickets (Aviasales, Scyscanner), guides and directories (TravelMe), search of companions (BlaBlaCar), car rental (Sixt), comparative integrated services sales (Aviasales Skyscanner), visualization applications travel (TripTrip, Spottly), search engines (Momondo, Kayak, Bilet, App In The Air, Hotel Reservation Service, Hotels.com, Expedia.com) and many others. The comprehensive use of mobile devices requires the creation of specialized interfaces for personal enterprise sites and corporate online platforms.

Social media. Alternative and niche social media channels – Snapchat, Pinterest, Facebook, Instagram, Zoom, Google Duo are platforms for online communication with consumers. Technologies-Viber, Whatsapp, Telegram, Skype, Facebook, Messenger – effective specialized platforms to achieve the goals of personal interaction with target consumers.

Big Data and Analytics. In the sphere of tourism Big Data and Analytics – are technical solutions that allow you to turn unsystematized data into information that provides personalization and personification in tourism. Yes, it is a decision to find the target audience, determine the needs of each segment and the tourist, establish an individual approach to form a tourist product for each client and determine its value. At the level of the business entity, these are opportunities to monitor the market, conduct targeted advertising campaigns, implement the tasks of revenue management, HR management, etc.

Cloud technologies. Storage, processing and integration of information on ccloud servers – one of the main global trends, including in tourism. It allows, on the one hand, efficiently and securely manage corporate data, on the other hand – to quickly increase the volume of information storage as needed, which enhances the development of economic entities, and ensures the quality of management and operating business.

«Blockchain» technology. In the field of tourism, this system will allow to create distribution databases for algorithmization and optimization of transaction accounting, to increase the reliability of the service, to provide booking processes,

calculation, customer feedback. Its functional opportunities are: B2B and B2C transactions, customer identification and access control, smart contacts, information tracking, customer check-in at hotels and flights, and provision of other services within one trip.

Artificial Intelligence. Software algorithms for tourism entities implement the task of ensuring decision-making, obtaining personalized results in planning, organizing and evaluating tourist trips, as well as processing and transmission of voice, visual and other nonverbal information, they include: hotel management systems – PMS (property management system), which allow to implement automation of business processes and functions of hotels and networks; risk management systems and action on fraud – real-time; automated virtual assistants (digital «assistants» of departments: marketing, analytics, quality services, room service, F&B, animation); data analysis systems and analytics and customer services (chatbots on a 24-hours basis hotel service from check-in to check-out; system of «service concierge»; system of «room service»; system of «smart house»); neural networks (automation of operational activities of a tourist office, restaurant, hotel or network).

Technologies and devises of virtual and augmented reality aimed at the experience of virtual reality through the maximum visualization of tourist facilities and infrastructure. Technologies allow to choose hotels, restaurants, tours, animation services; plan tourist routes; develop and demonstrate projects; to form complex tourist products. Virtual and augmented reality technologies allow creating interactive and virtual hotels, excursions, museums, entertainment, exhibitions, etc., which are used to sell product promotion, expand customer service capabilities, staff training and development, marketing, etc.

Internet of things – innovative technology that combines objects and devices equipped with sensors, software and other equipment that allows to receive and share data through the Internet to provide «seamless» service, self-service, remote services, receiving market analysis, monitoring assets, pricing, etc.

Robotization – electromechanical and virtual agents that automate operational processes and operations (development and selection of tourist route, hotel, booking, settlement, housekeeping, tariffs and hotel occupancy, in the future – the use of intelligent robots that will understand and communicate with people, search and process information, develop alternatives to management decisions, including in the field of tourism.

Abovementioned trends form *challenges and risks*, faced by tourism entities:

- economic (turbulence and crisis in the external environment, low propensity to innovate in society and tourism sphere, lack of financial resources for business entities, loss of competitiveness, long period of investments return, loss of financial stability);
- organizational and administrative (rapid ageing of technology, obsolescence of assets, loss of resources and information due to low levels of cybersecurity and crime in the

information space, the risks of inconsistencies and complications in the digital space, information noise);

- social and ecological (ageing knowledge, rising unemployment and mass job losses, need in highly qualified specialists, changing of identities and human needs, environmental pollution, lack of natural resources).

Tourism industry, which has social purposes, has both the key risks and threats to the implementation and strategic provisions of Concept 5.0, and the unique opportunities and benefits:

- release of free time and intensification of travel, development of tourism and hospitality sector

- achieving leadership in the hospitality market and the formation of unique competitive advantages;

- innovation of the tourism sector, improving the quality of services and forming a positive brand through the introduction of technical and technological innovations;

- creation of integrated formations and pooling of resources, opportunities and risks for the implementation of a consolidated development strategy (partnerships, networks, franchise systems);

- improvement of operational activity (automation of routine work, operations and processes, artificial intelligence in service)

- improvement of business processes and management decisions: (booking and reservation management, room management, marketing and personalization of sales, service promotion, solutions for optimization of resource provision and energy storage, environmental solutions, etc.)

- formation of a new type of internal corporate culture of enterprises and culture of tourism in general with emphasis and ethical principles, humanization, increasing social responsibility of business (Glonti, V., Trynchuk, V., Khovrak, I., Mokhonko, G., Shkrobot, M., Manvelidze L. (2020) [64]); social standards, ensuring sustainable development, integration;

- creation of preconditions for investments in the sphere of hospitality, increase of investment attractiveness of business through growth of tourist attractiveness (Trynchuk, V., Kaigorodova G., Alyakina D., Pyrkova G., Mustafina A. (2018) [65]).

To evaluate the implementation of innovations in the concept of «Society 5.0», expert research of top management and professionals in the tourism industry was carried out (Table 1, Table 2).

Enterprises are studied for the expressiveness of the concept of «Society 5.0» attributes within 3 blocks: organizational and managerial, economic and social.

Organizational and managerial aspect of innovation processes implementation includes the level of operational and management functions and the effectiveness of organizational design and is based on the definition of the following multi-attribute parameters: the optimality of organizational design; coordination of employees work and departments; consistency and speed of business processes; effectiveness of

strategic planning, operational management, stimulation, control, coordination; quality of activity; the level of services quality and their value for all segments of stakeholders (owners, staff, consumer).

Table 1

Audit results concerning innovations implementation attributes of the concept of Society 5.0 based on a multi-attribute approach

Types of business entities	Evaluation of the attribute expressiveness, points			
	Attributes of the concept implementation strategy			
	Organizational and managerial aspect	Economic aspect	Social and ecological aspect	Average score on the continuum
Continuum A. Transnational multisectoral concerns	2,7	2,5	2,6	2,6
Continuum B. Consolidated transnational (international) travel companies (holdings)	1,9	2,0	1,7	1,8
Continuum C Large universal (multisectoral) tour operators (mass market) with a network of own representative offices and involved agents, diversified hotel and restaurant complexes	2,2	2,3	2,1	2,2
Continuum D Medium universal (multisectoral) tour operators, large hotels and restaurants	2,0	2,1	1,9	2,0
Continuum E Small universal tour enterprises, small hotels, small restaurants	1,6	1,4	1,3	1,4
Continuum G Large tourism chains, large hotel chains and restaurant chains	2,0	2,1	1,7	1,9
Continuum F Medium tourist, hotel and restaurant chains	1,7	1,9	1,4	1,6
Continuum H Large specialized (narrow-profile) enterprises	1,9	2,1	1,6	1,9
Continuum K Medium specialized enterprises	1,8	2,0	1,6	1,8
Continuum Z Small specialized enterprises	1,0	0,9	0,9	0,9

Source: developed and calculated by the authors

The economic block of multi-attribute parameters helps to determine the level of management efficiency of business entities and includes quality and quantity measurement of such processes as: general management, economics, finance, business, marketing, tourism product production, sales, information and analytical support, resources, communications.

The social and ecological aspect provides opportunity to to determine the value for all stakeholders in the context of determining the expressiveness of a group of attributes: reliability; level of trust and recognition; accessibility, readiness for dialogue; continuity and regularity; mutual assistance, support; existence of additional advantages and privileges; consistency of actions, their structure, profitability and strength; environmental friendliness; resource saving; sustainability.

Depending on the results of the evaluation, three main zones of efficiency ($3O$) of innovative development are identified:

– $0 \leq \sum_{i=1}^n 3O_{ai} \leq 1$ (3) – zone of low value of the attributes level, which is a confirmation that enterprises in this area work inefficiently;

– $1 \leq \sum_{i=1}^n 3O_{ai} \leq 2$ (2) – zone of medium value of the attributes level, which is evidence of the mediocre organization of innovation processes;

– $2 < \sum_{i=1}^n 3O_{ai} \leq 3$ (1) – zone of high level of attributes expressiveness, which means that enterprises work effectively in this field.

According to the results of the expert research, the following conclusions were made:

– in most enterprises, aspects of innovation effectiveness have a medium level of expression, which means that enterprises in this area are working satisfactorily, but need to develop effective mechanisms for their further intensification of innovation development;

– the highest level of attributes expressiveness was received by economic aspects of integration interaction (which are defined on the basis of calculation of economic indicators (quantitative) and determine efficiency level of tourism entities);

– results of the audit of organizational and managerial processes show that their attributes are at a lower level compared to economic aspects, which means that management functions do not meet the full needs of effective organizational support for the implementation of the integration strategy;

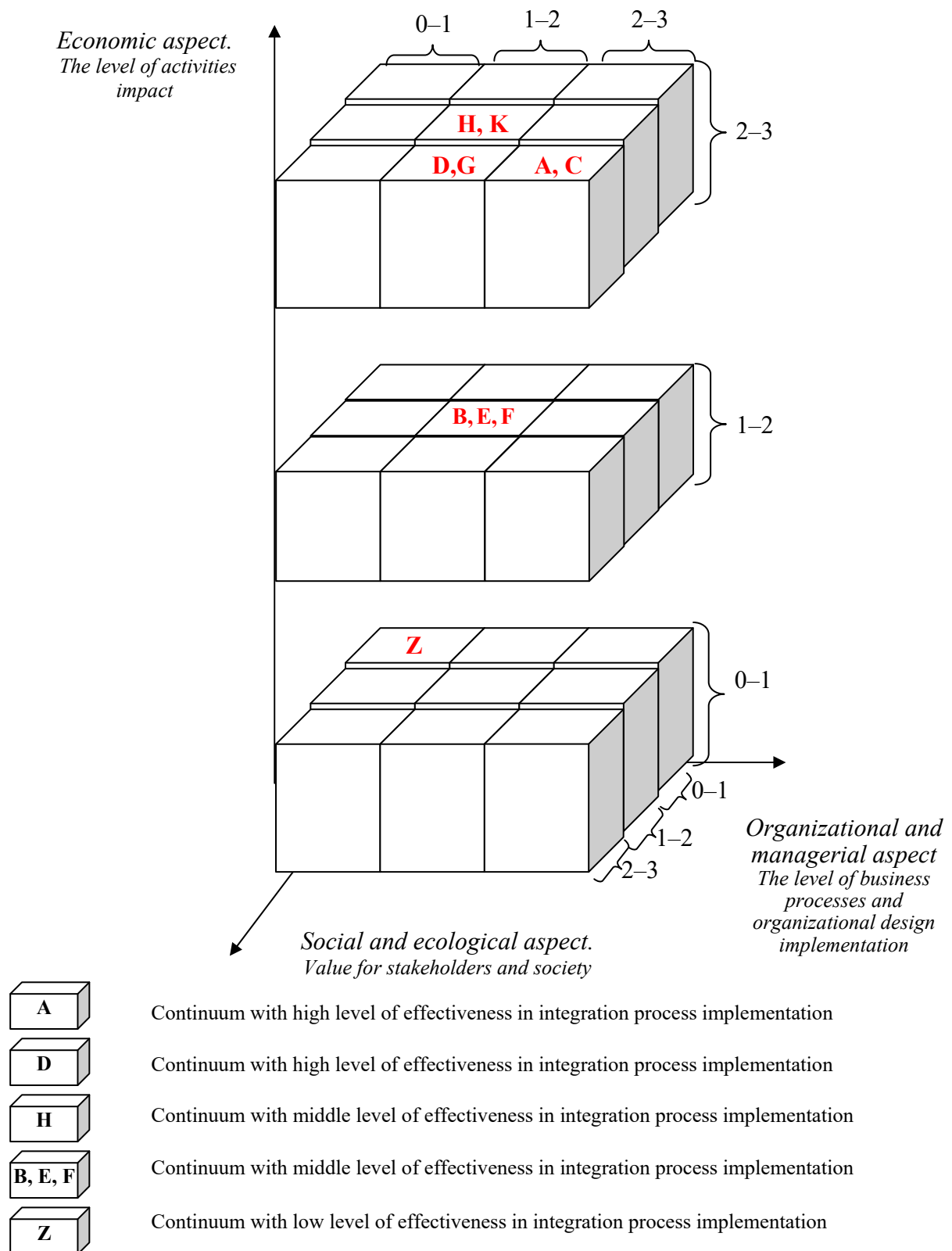


Fig. 4. Positioning of tourist activity entities based on multiattributive matrix of innovative development efficiency

Source: developed by the authors

– the lowest level of parameter values received the social aspect of integration processes development, which indicates the practical problems of the concept of Society 5.0 principles implementation in the practice of tourism business; the expressiveness of the parameters of integration interaction has an individual character and depends on the specifics and features of the enterprise – its size, type, territorial market coverage, customer service segments, specialization, management system.

Table 2

Research results among tourism entities concerning effectiveness of the concept Society 5.0. realization, based on a multi-attribute approach

Productivity zones (PZ)	Continuum of enterprizes	Average score on the continuum	Amount of enterprizes	Share in the number of enterprizes	Share in levels of activity	Limit value performance indicator
High	Continuum A	2,6	7	6,5	26,9	$2,5 \leq 30 \leq 3$
Average, closer to growth	Continuum C	2,2	11	10,2	14,6	$2 \leq 30 < 2,5$
	Continuum D	2	11	10,2	3,2	
Agerage	Continuum B	1,8	8	7,4	21,8	$1,5 \leq 30 < 2$
	Continuum G	1,9	9	8,4	18,6	
	Continuum H	1,9	6	5,6	2,4	
	Continuum K	1,8	4	3,7	0,9	
	Continuum F	1,6	10	9,3	3	
Average, closer to decrease	Continuum E	1,4	24	22,4	6,4	$1 \leq 30 < 1,5$
Low	Continuum Z	0,9	17	15,9	2,3	$0 \leq 30 < 1$

Research results allowed to position the subjects of tourism within the main areas that correspond to a certain level of management effectiveness on the basis of the implementation of the provisions of the concept of Society 5.0.: high (continuum A); average, closer to growth (continuum C and D); average (continuums B, G, H, K, F); average, closer to decrease (continuum E); low (continuum Z) (see Table 2, Fig. 4).

Conclusion. Summarizing the results of theoretical and analytical research, we note that taking into account the principles of the concept of Society 5.0. in defining the strategic vector of tourism development is an objective requirement that is in line with the global social idea of the Organisation of United Nations by 2030. The paradigmatic idea of the concept of «Society 5.0.» is a society in which a system that integrates the information and real environment and takes into balance economic development and solving social problems.

Tourism as a phenomenon of social development, its scale and socio-economic potential, multifunctionality in meeting the complex of consumer needs will ensure a rapid recovery of growth rates of basic indicators in this area, even in the face of unfavourable world market conditions. From these positions, tourism, which is one of the leading areas of socio-economic, cultural and political development of most countries and an essential part of the consumer behavior model in the scale of a significant proportion of the world's population, is able to implement the concept of «Society 5.0.» and become a global driver of socio-economic development.

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