



DIGITALIZATION AND INFORMATION SOCIETY. SELECTED ISSUES

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Edited by Aleksander Ostenda
and Tetyana Nestorenko

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3.3. USING OF SWOT-ANALYSIS IN RECREATION, PHYSICAL AND REHABILITATION MEDICINE

Physical and rehabilitation medicine is recognized as primary medical specialty present all over the European Union. More than 1,500 residents are trained in this specialty. Delegates from Ukraine are active participants in the Committees of the European Section and the Council for Physical and Rehabilitation Medicine (FRM) uniting 31 European countries including Turkey, Ukraine, Serbia, Bosnia and Herzegovina, Israel, Montenegro and Russia. This contributed to launching harmonization of the rehabilitation system with the European standards in Ukraine. It also assisted in training of residents, in development and implementation of the FRM educational process in Ukraine⁵³⁰ as well as in implementation of the rehabilitation system in the national health care facilities. Devising scenarios for the development of FRM at different organizational levels (healthcare facility, structural unit, individual methods of diagnosis, treatment, etc.) is one of the critical issues to be addressed.

Acronym SWOT was introduced in 1963 by Kenneth Andrews, professor of the Harvard University. Initially SWOT analysis was applied to presentation and structuring of knowledge on the current situation and trends.

In 1965, Edmund P. Learned, C. Roland Christensen, Kenneth R. Andrews, and William D. Guth, the Harvard University professors, proposed the technology of using a SWOT model to develop a company behavior strategy. The LCAG (acronym represents the initials of the authors) scheme was proposed, which is based on a sequence of steps aimed at choice of strategy⁵³¹.

The United Nations Recovery and Peacebuilding Programme states that SWOT analysis is one of the most effective business tools that can be used to analyze the internal and external environment: a popular tool employed by both small businesses and large corporations. A simple SWOT analysis can also be very effective for healthcare facilities, especially hospitals⁵³². It allows seeing the bigger picture due to ongoing changes in the context and external factors, which encourages to perform SWOT analysis systematically. Hypothetically, we chose SWOT-analysis.

The works⁵³³ describe how the SWOT analysis of information systems was used to determine cognitive and emotional disorders in patients with dyscirculatory encephalopathy and to justify the use of electropuncture diagnosis (EPD) in FRM. The work⁵³⁴ describes application of SWOT-analysis for devising scenarios in the development of different sectors of economy. The work⁵³⁵ presents the SWOT analysis results on the competitive positions of the Nemyriv resort destination. In⁵³⁶ the author updates the problem associated with the lack of formalized search for interactions between SWOT factors, which complicates the search and solution of problems and justification of the development strategies. In doing so the author employed typical sets and models of factors.

Hypothesis: Informaciological analysis of literature, Internet resources and own research using SWOT analysis will allow selecting instruments to devise scenarios of FRM development at different levels of the organization.

Methodology: The authors use SWOT analysis, statistical, informaciological and historical methods in this research.

⁵³⁰ Machuga N. Z. (2012). *Analysis of the components of the "quality chain" of medical services*, p. 514.

⁵³¹ Kulivnyk V. S. et al. (2021) *Kurortology: historical organizational and clinical aspects*, p. 124.

⁵³² Samokhin A. V. (2006). *Electropuncture diagnostics and therapy by R. Folly method*, p. 155.

⁵³³ Vysotskaya E. V. (2018). *SWOT-analysis of information system for determining cognitive and emotional disorders of health customers with dyscirculatory encephalopathy*. p. 45. KULIVNUK V.S. (2021). *Information substantiation of electropuncture diagnostics using in Recreation, Physical and Rehabilitation medical services*, p. 15.

⁵³⁴ Samokhin A. V. (2006). *Electropuncture diagnostics and therapy by R. Folly method*, p. 120.

⁵³⁵ Kulivnyk V. S. (2021). *Information substantiation of electropuncture diagnostics using in Recreation, Physical and Rehabilitation medical services*, p. 16.

⁵³⁶ Ibidem.

Research objective: Devise models of scenarios for SWOT analysis at different organizational levels of FRM.

Universal examples: for convenience it is informative to group the information and present it in the table format (Table 1).

In the field of Recreation, Physical and Rehabilitation medical services, the strengths include those items: professionalism of medical staff; modern medical (rehabilitation) equipment; convenient location, comfort and safety in providing of medical (rehabilitation) services; positive patient feedback; understanding of health consumer needs; established market positions; expanding the range of services.

There are weaknesses of Recreation, Physical and Rehabilitation medical services: unstable financial policy and monopoly position of the Ministry of Health. We can highlight these opportunities⁵³⁷: sale of services that return a profit out of health insurance system; health customer loyalty.

Finally, there are some threats of Recreation, Physical and Rehabilitation medical services⁵³⁸: competition in rehabilitation field; high interest rate on credit; increased sensitivity to the economic situation in service sector; reduction of health customer incomes.

The analysis of all above mentioned items show us that medical institutions as economic entities need an influx of financial capital for their activities that can be obtained from investors or (and) through long-term credits.

Table 1. Example of SWOT analysis table

Strengths (internal)	Weaknesses (internal)
What are your strengths? What do you do better than others? Which unique resources and opportunities do you have? How do others accept your strengths?	What are your weaknesses? What do competitors do better than you? What improvement can you implement? What do others think about your weaknesses?
Opportunities (external)	Threats (external)
What trends and conditions can have positive influence on you? What opportunities are there for you?	What trends and conditions can have negative influence on you? What do your competitors do that can affect you? Is there financial stability and support in place? What impact do your weaknesses have on threats?

Source: ⁵³⁹.

The analysis of all mentioned factors gives grounds to state that healthcare facilities as business entities need for their activities flow of financial capital from investors and/or through long-term loans.

The work ⁵⁴⁰ uses SWOT analysis of the *CognitiveDE* Information System and its results are presented in Table 2.

The obtained results allowed identifying strengths (60-100%) and weaknesses (0-59%) of the *CognitiveDE* information system. The threats of this system and the ways of its further development were also determined. Therefore, we determined a set of goals whose achievement will eliminate the available problems.

Data collection: Data from literature, Internet resources and own research were collected and processed.

Analysis and findings. The results of the SWOT analysis of the FRM medical resort *Avangard* are presented in Table 3.

The strengths and weaknesses identified in the SWOT analysis allowed determining threats and opportunities in devising scenarios for physical and rehabilitation medicine development.

⁵³⁷ Machuga N. Z. (2012). *Analysis of the components of the "quality chain" of medical services*, p. 513

⁵³⁸ Kulivnyk V. S. et al. (2021) *Kurortology: historical organizational and clinical aspects*, p. 188.

⁵³⁹ Machuga N. Z. (2012). *Analysis of the components of the "quality chain" of medical services*, p. 513.

⁵⁴⁰ Vysotskaya E. V. (2018). *SWOT-analysis of information system for determining cognitive and emotional disorders of health customers with dyscirculatory encephalopathy*, p. 46.

Table 2. Results of the SWOT analysis of the CognitiveDE Information System

Strengths		Weaknesses	
1.	Technical and informational support of a psychiatrist (psychotherapist, medical psychologist)	1.	Human factor impact in the course of registration and data input (subjectivity)
2.	Providing information in the format convenient for health professionals	2.	When changing the patient's family name (if necessary), the info on his/her previous family name is not displayed
3.	Protection of patient's passport data using AES encoding algorithm	3.	Formatting may be distorted in the printed document
4.	Possibility of operational registration of patients with dyscirculatory encephalopathy (DEP)	4.	High accuracy in the diagnosis of cognitive and emotional disorders is insured only if a patient is identical to those patients whose data were used to develop the system.
5.	Possibility of determining the functional status of internal organs and tissue systems: functional and topical diagnosis.	5.	No information on patients examined in other psycho-neurological healthcare facilities
6.	Possibility of differential and synthetic diagnosis.		
7.	High accuracy level in the diagnosis of emotional disorders (94, 9%) and cognitive disorders (97, 2%)		
8.	Implementation of the principle of one-time data entry with their subsequent storage in the <i>CognitiveDE</i> database		
9.	Availability of analytical and reference information		
10.	Flexibility and adaptability		
Opportunities		Threats	
1	Expansion of the <i>CognitiveDE</i> information system functional	1	Loss of data on the condition of patients with DEP
2	Using advanced DBMS	2	Unauthorized access to the <i>CognitiveDE</i> system
3	Creation of the mechanisms for integration with similar systems	3	Transition to similar system
4	Roll-out of the information system to healthcare facilities of other specializations	4	Loss of financial facilities to service the system

Source: ⁵⁴¹.

Analyzing the tourist flows of Vinnytsia region (Ukraine) it is advisable to consider the number of visitors to the *Avangard* resort (Nemyriv town). Throughout 2014-2018, the resort was visited by 31,471 people. The SWOT analysis was also used for a detailed study of this resort destination competitive position⁵⁴². The obtained results are presented in Table. 4.

Therefore, the qualitative and quantitative results of the SWOT analysis indicate a certain overage of weaknesses over strengths, as well as the existing and expected overage of external opportunities over threats. The completed comprehensive analysis of the current situation in the resort destination in Nemyriv town allowed determining key issues and factors hindering the tourism development in the town.

⁵⁴¹ Vysotskaya E. V. (2018). *SWOT-analysis of information system for determining cognitive and emotional disorders of health customers with dyscirculatory encephalopathy*, p. 46.

⁵⁴² Kuliivnyk V.S. et al. (2021) *Kurortology: historical organizational and clinical aspects*, p. 120.

Table 3. Results of the SWOT analysis of the FRM medical resort Avangard

Strengths (internal)	Weaknesses (internal)
<ul style="list-style-type: none"> • Many years of working experience • Increasing partner relationships with the related entities • Training of medical students and resident doctors • Certified system of service provision quality is in place 	<ul style="list-style-type: none"> • High staff turnover • Staff training shortcomings • High working load on staff
Opportunities (external)	Threats (external)
<ul style="list-style-type: none"> • Population aging • Increasing road traffic injuries • COVID-19 pandemic aftermath 	<ul style="list-style-type: none"> • Depopulation in the country • High unemployment levels • Competition of salary sizes among similar entities

Source: ⁵⁴³.

The analysis of all above mentioned items show us that medical institutions as economic entities need an influx of financial capital for their activities that can be obtained from investors or (and) through long-term credits.

SWOT-analysis of the information system for determining cognitive and emotional disorders in health customer with dyscirculatory encephalopathy was used in ⁵⁴⁴.

Table 4. Results of the SWOT analysis of the competitive positions of Nemyriv town resort destination

Strengths (internal)	Weaknesses (internal)
<ul style="list-style-type: none"> • Unique historical and cultural heritage of the national and international significance • Potentially branded objects and products are available • Town and region are economically developed. • Significant recreational resources are available. • Favorable location in terms of transport and logistics (highways and railways of the international importance). • Objects and territories of the nature reserve fund are available within the town. • Specific spatial planning combining urban development with recreational areas. • Own energy, industrial and construction facilities. • High level of human capital concentration. Research institutions and student youth are in place. 	<ul style="list-style-type: none"> • Low quality of commercial and municipal services (transport, public WC, street cleaning). • Problems with the improvement of the city amenities, high 'natural' littering and neglect of some areas. • Significant man-made load on the environment. • Low quality and insufficient range of tourist services. • Low activity of the city community as a whole, including in the area of tourism, service sector, insufficient development of customer-oriented small and medium business. • Low level of cooperation, partnerships, clustering of services. • Lack of traditions in the system management of the strategic development and project management processes of the town. • Lack of effective organizational structure for tourism development management, lack of professional staff in the municipal administration system.
Opportunities (external)	Threats (external)
<ul style="list-style-type: none"> • Modern information technologies with their further development are available. • Increasing demand for tourism products in the domestic market (organized and unorganized tourism). • Proximity to the regional centers and other settlements with a total population of over 2 million people (as sales markets). • Transit tourist flow is available. • Partnership with twin cities continues to develop. • Developed public-private partnership. • Youth public organizations and students are interested in the development of tourist projects. • Representatives of the Ukrainian Diaspora and foreign national minorities residing in Vinnytsia region are interested in the historical and cultural heritage. • Alternative sources of the project financing (local government support funds, international technical assistance project). • Horizontal cooperation with other cities and regions (directly, through city associations and other partnerships). • Green tourism is demanded among residents of the Vinnytsia region. 	<ul style="list-style-type: none"> • Unsatisfactory condition of the country's transport infrastructure, low quality of transportation services. • Budget deficit, inability to finance projects due to unfair distribution of the budget between center and regions. • Competition from other cities and regions of Ukraine with similar recreational resources. • Deterioration of the ecological situation in the city (region). • Inefficient public administration of the tourism industry as a whole. • Deepening macroeconomic crises in the national and global markets. • Lack of support for the government initiatives in the development of tourism sector by business, the public and central authorities. • Information closeness of the government and society. • Decrease in consumers' purchasing power and demand for tourist services.

Source: ⁵⁴⁵

⁵⁴³ Kulivnuk V. S. (2021). *Information substantiation of electropuncture diagnostics using in Recreation, Physical and Rehabilitation medical services*, p. 14.

⁵⁴⁴ Ibidem.

The work ⁵⁴⁶ employed the SWOT analysis of the information system of the *Medisa* software and hardware complex to allow its application for electropuncture diagnostics (EPD) in FRM. The results are presented in Table. 5.

Table 5. Results of the SWOT analysis of the information system for electropuncture diagnosis (EDP) in FRM

Strengths		Weaknesses	
1.	Technical and informational support of the FRM doctor	1.	Dependence of diagnosis results on specifics of an individual diagnostician
2.	Providing information in the format convenient for health professionals	2.	Dependence of diagnosis results on the equipment of the diagnostician workplace
3.	Patient's data protection	3.	Dependence of diagnosis results on appropriate preparation of a patient for electropuncture diagnosis procedure.
4.	Operational registration of patients is in place	4.	Disease is not diagnosed if it is not studied well enough.
5.	Ability to determine the functional status of internal organs and tissue systems: functional and topical diagnosis.	5.	Disease is well-studied but a diagnostician never saw it before.
6.	Possibility of differential and synthetic diagnosis	6.	Possible ethical reasons, a doctor does not have insufficient knowledge of semiology and diagnosis methodology.
7.	Possibility of early detection of disorders in organs and tissue systems, as well as hidden (latent) foci and infection including their impact on the body's immune system.	7.	Difficulties in processing increasingly and rapidly growing scientific information
8.	Possibility to test drugs, bacterial, viral and other infectious antigens (etiologi diagnosis of diseases).	8.	Difficulties in recognizing premorbid conditions in practically healthy people ⁵⁴⁷ etc.
9.	Possibility of individual selection of homeopathic and allopathic medications without their administration into a human body.	9.	Contraindications for EDP: • lack of extremity or one or several fingers; • local disturbances: changes or defects of skin and/or near tissues in EDP sites.
10.	High accuracy of clinical diagnosis: ENT-82%, bronchi - 84%, aorta - 83%, hypertension - 78%, etc.		
11.	Possibility of determining the effects of various pathogens, pesticides, herbicides, nitrates, radionuclides etc. on the body.		
12.	Possibility of control for efficacy of any treatment method.		
13.	Possibility of restoring electrical homeostasis in the affected organs and tissues ⁵⁴⁸ .		
Opportunities		Threats	
1.	Expansion of diagnosis and treatment databases	1.	Loss (complete or partial) of the databases
2.	Creating mechanisms for integration with other systems.	2.	Loss of maintenance of the system.
3.	Transfer of EDP technology to other health facilities of physical and rehabilitation medicine.		

Source: ⁵⁴⁹.

⁵⁴⁵ Ibidem.

⁵⁴⁶ Ibidem, p. 15.

⁵⁴⁷ Samokhin A. V. (2006). *Electropuncture diagnostics and therapy by R. Folly method*, p. 185.

⁵⁴⁸ Vysotskaya E. V. (2018). *SWOT-analysis of information system for determining cognitive and emotional disorders of health customers with dyscirculatory encephalopathy*, p. 47.

Therefore, the performed SWOT analysis revealed problems and their solution improved the EPD technology and contributed to the expansion of diagnosis and therapeutic capacity of the information system. Thus, SWOT-analysis revealed the tasks, the solution of which improved the electropuncture diagnostics technology and contributed to the expansion of diagnostic and therapeutic capabilities of the information system.

Conclusions.

1. Real models of scenarios based on the SWOT analysis have been developed at different levels of the organization: *Avangard* FRM resort, information system (*Medisa* EPD software and hardware complex), Nemyriv resort destination.

2. The implemented information technology is based on the available instrumental research methods, so it can be used for a wide range of FRM facilities.

3. The strengths and weaknesses identified in the SWOT analysis helped to identify opportunities and threats for devising FRM development scenarios.

4. The use of correlation analysis in combination with the computer capacities would speed up and facilitate the work on analyzing the interaction of the SWOT factors.

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⁵⁴⁹ Kulivnuk V. S. (2021). *Information substantiation of electropuncture diagnostics using in Recreation, Physical and Rehabilitation medical services*, p. 14.

Part 3. CURRENT PROBLEMS OF DIGITAL ECONOMY DEVELOPMENT

3.1. Oleksandr Hladkyi, Valentyna Zhuchenko, Agbaje Temitope Adetomilola. DIGITAL FEATURES OF SUSTAINABLE DEVELOPMENT IN TOURISM

The article considers the features of sustainable tourism development in modern conditions. The main economic and social determinants of the development of the tourism industry in conditions of uncertainty are identified. Attention is paid to the study of the main preconditions and consequences of global economic transformations in the field of international tourism. The source base and periodization of stages of development of the concept of sustainable development of tourism within the modern paradigm of sustainable development are determined. Examples of successful implementation of the concept of sustainable tourism development in modern conditions on the example of the tourism industry of the European Union. The study is supplemented by an overview of the main problems of management in the implementation of the concept of sustainable development of the tourism industry.

3.2. Anna Kozachenko. NON-CASH PAYMENT SYSTEMS IN THE CONDITIONS OF DIGITALIZATION

The article analyzes the processes of digitalization of non-cash payments. The essence of the concept, the need for non-cash payments, the basic principles of their organization are determined. Emphasis is placed on the significant variety of non-cash payments by their types and features of implementation. The peculiarities of settlements with the use of a payment order and a settlement check are highlighted. The advantages and disadvantages of using non-cash payments and payment cards, in particular. Based on this, promising areas for improvement and development of the payment card market are proposed, which will directly ensure the financial stability of the enterprise. Requirements for issuing and conducting transactions with electronic money are considered. The indicators of the market of non-cash payments with the use of payment cards, electronic money and the impact of digitalization on their structure are analyzed.

3.3. Volodymyr Kulivnuk, Oleksandr Hladkyi, Tetiana Tkachenko, Anastasiia Mishcuk. USING OF SWOT-ANALYSIS IN RECREATION, PHYSICAL AND REHABILITATION MEDICINE

SWOT analysis has been used for strategic planning since the 1960s by identifying the following factors: strengths, weaknesses, opportunities and threats. In the field of Recreation, Physical and Rehabilitation medical services, the strengths include those items: professionalism of medical staff; modern medical (rehabilitation) equipment; convenient location, comfort and safety in providing of medical (rehabilitation) services; positive patient feedback; understanding of health consumer needs; established market positions; expanding the range of services. There are weaknesses of Recreation, Physical and Rehabilitation medical services: unstable financial policy and monopoly position of the Ministry of Health. We can highlight these opportunities: sale of services that return a profit out of health insurance system; health customer loyalty. Finally, there are some threats of Recreation, Physical and Rehabilitation medical services: competition in rehabilitation field; high interest rate on credit; increased sensitivity to the economic situation in service sector; reduction of health customer incomes.

Part 3. CURRENT PROBLEMS OF DIGITAL ECONOMY DEVELOPMENT

3.1. Oleksandr Hladkyi – Doctor of Geographic Science, Professor, State University of Trade and Economics, Kyiv, Ukraine

Valentyna Zhuchenko – PhD in Economics, Associate Professor, State University of Trade and Economics, Kyiv, Ukraine

Agbaje Temitope Adetomilola – PhD Student, State University of Trade and Economics, Kyiv, Ukraine

3.2. Anna Kozachenko – PhD in Economics, Associate Professor, Vinnytsia National Agrarian University, Vinnytsia, Ukraine

3.3. Volodymyr Kulivnuk – PhD of Medical Science, Associate Professor, Vinnytsya National Pirogov Memorial Medical University, Vinnytsya, Ukraine

Oleksandr Hladkyi – Doctor of Geographic Science, Professor, State University of Trade and Economics, Kyiv, Ukraine

Tetiana Tkachenko – Doctor in Economics, Professor, State University of Trade and Economics, Kyiv, Ukraine

Anastasiia Mishcuk – PhD in Economics, Assistant, Vinnytsya National Pirogov Memorial Medical University, Vinnytsya, Ukraine

3.4. Olena Martseniuk – PhD in Economics, Associate Professor, Vinnytsia National Agrarian University, Vinnytsia, Ukraine

3.5. Leonid Melnyk – Doctor in Economics, Professor, Sumy State University, Sumy, Ukraine

Yuriy Derev'yanko – PhD in Economics, Associate Professor, Sumy State University, Sumy, Ukraine

Oleksandr Kubatko – Doctor in Economics, Associate Professor, Sumy State University, Sumy, Ukraine

Bohdan Kovalov – PhD in Economics, Associate Professor, Sumy State University, Sumy, Ukraine

Iryna Dehtyarova – PhD in Economics, Associate Professor, Sumy State University, Sumy, Ukraine

Oleksandr Matsenko – PhD in Economics, Associate Professor, Sumy State University, Sumy, Ukraine

3.6. Mariia Nazarkevych – Doctor of Technical Sciences, Professor, Lviv Polytechnic National University, Lviv, Ukraine

Hanna Nazarkevych – PhD Student, Lviv Polytechnic National University, Lviv, Ukraine

Volodymyr Hrytsyk – Doctor of Technical Sciences, Professor, Lviv Polytechnic National University, Lviv, Ukraine

Ivan Tsmots – Doctor of Technical Sciences, Professor, Lviv Polytechnic National University, Lviv, Ukraine

3.7. Olena Polova – Doctor in Economics, Associate Professor, Vinnytsia National Agrarian University, Vinnytsia, Ukraine

3.8. Oksana Ruda – PhD in Economics, Associate Professor, Vinnytsia National Agrarian University, Vinnytsia, Ukraine