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FINANCIAL ASPECTS OF DIGITAL MARKETING ECOSYSTEMS FORMATION IN THE SPHERE OF INFORMATION AND COMMUNICATION TECHNOLOGIES

ABSTRACT

The main purpose, presented in this article is to investigate and identify the key financial aspects and problematic issues of digital marketing ecosystems' formation in the sphere of information and communication technologies.

Taking into account structural market transformations, it has been defined that the marketing ecosystem is a digital platform where the consumer can purchase goods and financial services from different manufacturers, enhancing the effect of their simultaneous use. It is justified that on the basis of mutually effective functioning, the ecosystem gathers, researches and obtains information, financial services, e-commerce services, public services, and social interaction. In the structure of the ecosystem, it is worth highlighting that financial and socio-economical services are the most important components of the digital ecosystem, as the urgency of their use requires flexibility from the point of view of defining financial services as a crucial indicator in the medium and long run for the full strategic development of ICT enterprises by direct obtaining of financial and other licenses, which exists on the current market environment.

It is determined that the main goal of the digital marketing ecosystem formation is to provide financial services to clients in real-time, and also the development of a client-centric approach not only to attract the target audience with various services, but also to attract them to purchase products and receive services within the digital ecosystem and, as a result, to extend the duration of the target audience's stay in the ecosystem due to focusing attention on his needs, increasing his loyalty and providing the potential consumer with favourable conditions for using a complex of digital products and financial services. It was defined that to solve the issue of increasing the profitability level of ICT enterprises should be a comprehensive promotion of the digital marketing ecosystem's development by the participants of the target market.

Keywords: digital marketing, digital marketing ecosystem, sphere of information and communication technologies, target audience, financial services, client-centric approach, synergistic effect

JEL Classification: M15, M31, M38, O33

INTRODUCTION

The intensification of the digitalization processes of social development actively affects the production and sales activities of enterprises, according to the spheres of management in the economy. The key trend of recent years is a structural and organizational-management transformation of knowledge-intensive technologies into a single vector of development, accompanied by the emergence of digital ecosystems, artificial intelligence technologies, and the analysis of large databases. The growth of material and financial values of digital technologies plays a crucial role and huge value in the development of a high level of market capitalization. The modern state of digital economy developing processes, in turn, is a counterpart of global processes of socio-economic fast development, becoming a key driver of the growth and development of enterprises in the market of information and communication technologies.

The development of ICT enterprises is a rather complex process, the key characteristics of which should be considered the current and forecast state of financial stability, financial independence, the presence of potential financial opportunities to increase the production volumes and sale of products and services, increasing the economic efficiency of financial resources using, social security of personnel.

In this point of view, a promising direction for the development of society based on the Internet of Knowledge and the Internet of Things is the creation of Industry 5.0, which focuses on the creation and use of autonomous artificial intelligence systems for the digitization of knowledge and cooperation between people and robots. The essence of the concept of Industry 5.0 consists in the consistent transition of "digital thing" – "smart thing" – "autonomous thing" with the creation and formation of appropriate resources for their interaction.

Active participants in the market of information and communication technologies, against the background of the general digitalization and intellectualization of social processes, besides developing and upgrading innovative services and goods, satisfy the client's wishes, intensively upgrading their skills in the direction of business model structural transformation, one of which is a digital business ecosystem, the necessity of which is caused by the complexity of the economic interaction with the use of network technologies.

LITERATURE REVIEW

Different aspects, such as economic, technical, legal, social, and financial aspects of business eco-systems functioning are studied within the organizational framework ecology, competition theory, behavioural economics, economic cybernetics, socio-biology etc. In the field of our research, the work of such famous scientists as: U. Pidun, M. Reeves, M. Schüssler [1], R. Adner [3], H. Schön, J. Zdravkovic, J. Stirna, S. Strahinger [9], Hung Le Hong [10], Jacobides [11], M. G., M. Koch, D. Krohmer [14], J. F. Moore [15], F. Nachira, A. Nicolai, P. Dini, M. Le Louarn, & L. R. León [16], P. K. Senyo, K. Liu, J. Effah [21], G. G. Parker, M. W. Van Alstyne, S. P. Choudary [22], M. Reeves, S. Levin, U. Daichi [24].

Scientific papers attract attention by A. Berman, M. Cano-Kollmann, R. Mudambi [4] and C. Svensson, J. Udesen, and J. Webb focusing on specifics of business structures' digital transformation, financial support and financial services providing within digital ecosystems' models, architecture and approaches to designing ecosystems, methods combining services into business ecosystems, positioning of ecosystem companies on market, analysis of models of digital business ecosystems of various companies [25].

The well-known authors as A. Kindler, D. Siegel, J. H. Paulsen [13] in their scientific research «Developing digital ecosystems that drive industry alignment and new business opportunities» emphasize that the «...huge benefiting from digital ecosystems that connect organizations along their value chains requires a strategic approach and dedicated governance. Many organizations opt to start by focusing on specific business or customer pain points and construct business models that include their relevant strategic partner networks» [13].

According to such well-known scientists as V. Chung, M. Dietz, I. Rab [5], & Z. Townsend [8] in their scientific research «Ecosystem 2.0: Climbing to the next level», «...for participating successfully in ecosystems, traditional companies must often change the way they think about customers. Instead of limiting themselves to services within their historical industry borders, they may venture beyond in an effort to serve customers from one end of the customer journey to the other. For instance, opportunistic companies in the housing market – such as the United Kingdom's ZPG – are trying to create end-to-end ecosystems that may span search, property comparisons, mortgage shopping, household moving, switching phone and cable companies, and access to home-improvement professionals. In fact, we estimate that at least a dozen sectors, including B2B services, mobility, travel and hospitality, health, and housing, are reinventing themselves as vast ecosystems, networks of networks that could add up to a USD 60 trillion integrated network economy by 2025» [5].

M. G. Jacobides, A. Sundararajan, M. Van Alstyne suggest that «...ecosystem as a business model – a platform business model (the owner of the ecosystem is only an intermediary of value exchange). It can take the form of a marketplace, but also a protection hub – a platform where, for example, solutions and technologies that the user combines in practice meet, whereas eco-industries – the intersection of traditional industries will create a new (digital) industry. For example, overlaps related to health care, personal transport, and services following the purchase of a house. They can revolve around a single customer, but also around a shared goal (with a number of customers)» [12].

Taking into account and noting the important role of topical issues considered by national and foreign scientists, it is worth paying attention to the study of financial aspects and problematic issues of digital marketing ecosystems formation and implementation in the market of information and communication technologies.

AIMS AND OBJECTIVES

The general purpose of scientific research is to investigate and identify the key financial aspects and problematic issues of digital marketing ecosystems' formation in the sphere of information and communication technologies.

Achieving the general purpose determined the relevance and importance of solving the following tasks:

- to diagnose potential strategic opportunities for the development of ICT enterprises within the digital marketing ecosystem, based on a combination of financial and economic analysis of ICT enterprise's activities, quantitative studies of consumer behaviour to determine the priority of the strategic orientations of these enterprises;
- to carry out a strategic forecast of the results of digital marketing ecosystems implementation using methods of extrapolation and determination of least squares, taking into account the existing problems of ensuring the effective functioning of ICT enterprises.

METHODS

The main purpose of the scientific article is to determine the process of investigating and identifying the key financial aspects and problematic issues of digital marketing ecosystems' formation in the sphere of information and communication technologies (further – ICT). While solving this scientific problem, in the article, the methods of systematization and generalization – when generalizing and substantiating the conceptual foundations of the strategic development of information and communication technology enterprises in the direction of forming digital marketing ecosystems; systemic, structural and functional approaches – when developing a mechanism for the formation of marketing ecosystems of enterprises in the direction of their strategic development have been used. The method of complex and systemic analysis has been used for the development of a methodological toolkit for establishing potential financial opportunities for the strategic development of information and communication technology enterprises within the limits of digital marketing ecosystem functioning.

When conducting the research, a survey method was also used based on a point-based assessment of the level of consumer satisfaction with the goods and services of information and communication technology enterprises in the target market – for a better understanding of the situation and the adoption of optimal management decisions regarding the identification of key influencing factors on the formation and increase of the level of loyalty of the target audience to enterprises operating on the market of information and communication technologies.

The method of extrapolation and the method of determining the least squares have been used in order to make a strategic forecast of the results of the digital marketing ecosystems implementation, and situational analysis - when justifying the feasibility of forming digital ecosystems of ICT enterprises' activities.

RESULTS

The development of ICT market enterprises is a rather complex process, the key characteristics of which should be considered the current state of financial stability, independence, the presence of potential opportunities to increase the amount of financial income due to expansion of production, diversification of products and services, to increase the economic efficiency of the use of labour resources, social security of personnel. Modern relationships between target market participants go beyond the creation of traditional value chains due to the impossibility of establishing clear boundaries between suppliers, customers, and consumers based on the exchange of tangible and intangible values.

In the long-run perspective, digital ecosystems, including, their electronic communication services, are able to exert a significant influence on changing the paradigm of providing information and communication services in the communication market. In modern conditions, digital ecosystems that develop their own information and communication products and tools, services and goods are considered, which are obligated to rely on their own organizational, managerial and financial strength.

In the conditions of the general digitization of social processes, there is a need to form a digital marketing ecosystem and define it as the cooperation of companies, formed and united around a single structural organization, including shared digital platforms for more efficient contentment of the end user's needs and, as a result, an increase in the level of competitiveness of ICT enterprises [6]. The main prerequisites for the formation of marketing digital ecosystems should be considered the following (Figure 1).

The crucial goal of the digital marketing ecosystem formation is to provide services to clients in real-time, taking into account all requirements and fulfilling the requirements and regulations of both government bodies and the target audience. The ecosystem is a digital platform where the consumer can purchase goods and services from different manufacturers, enhancing the effect of their simultaneous use. The use of ecosystems in the functioning of business entities in the markets provides an opportunity for each of the participants to create such value that it is impossible for each participant to create independently. In the structure of the ecosystem, it is worth highlighting its core, that is, the company that carries out key innovative activities and other participants who use the opportunities of the ecosystem and thus realize their products and services, ensuring the efficiency and coherence of the entire ecosystem.

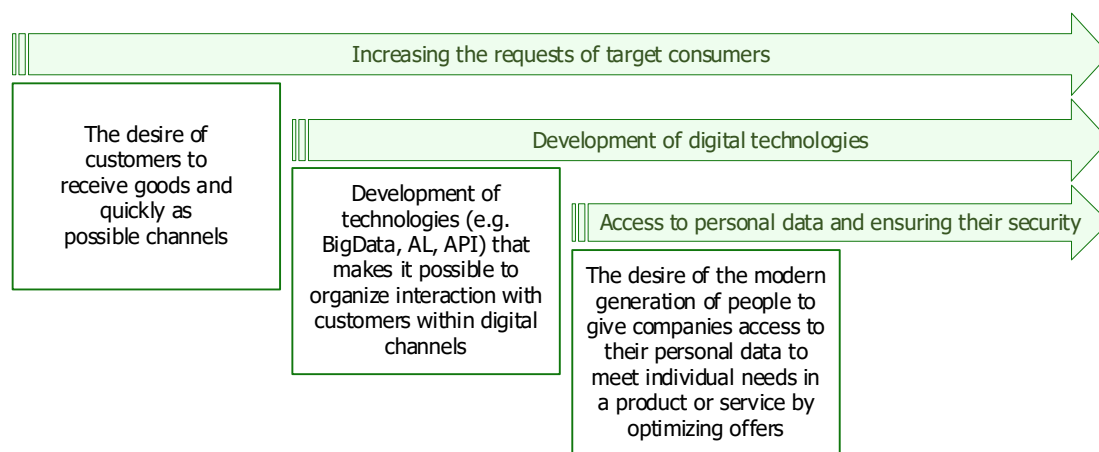


Figure 1. Prerequisites for the formation of digital marketing ecosystems of organizations.

First of all, the digital marketing ecosystem is considered a set of participants, that is, interacting organizations that participate in the creation of a value chain. Secondly, it is a trading platform where you can buy various goods and services without visiting many stores, order delivery and pay for them (marketplace). Thirdly, a digital marketing ecosystem is a rapidly developing organization, that is, a company that uses innovative approaches to create and promote its own product or service. In some cases, the term "ecosystem" has been used as a synonym for supply chain, which is also appropriate, but today's ecosystems often go beyond such partnerships [12].

The openness of digital marketing ecosystems for potential participants in the ICT market, the availability of support and regulatory levers from the state form a competitive market environment and the necessary conditions for increasing the number of digital marketing ecosystems and increasing the availability of digital services. Under such conditions, the state itself may not directly participate and spend on the development of digital services, but create an environment for manufacturers of services, devices and equipment.

Taking into account the above, in parallel with the development of innovative information technologies by introducing them into the socio-economic development of society, multiple and multifunctional optimizations of service provision processes, rapid and significant structural changes of an organizational and managerial nature are noticed not only in the methods and methodologies of providing services but also in the complex processes at all of the transformation of business models operating ICT enterprises. Furthermore, in conditions of general intellectualization of social processes, the business models of the largest participants in the ICT market are rapidly changing in the direction of forming digital marketing ecosystems in the direction of ensuring a synergistic effect from mutual effective functioning [11]. The formation of digital information and communication ecosystems in the field of ICT will provide an opportunity to ensure the availability and safety of receiving services, increase the intuitiveness and choice of services, and reduce the level of transaction costs.

Formation of new models of ICT services expansion (networks of external digital channels, platforms, agents), new possibilities for consumer access - these are some of the features of effective development of ICT enterprises, which is still being the process of constant innovation and adaptation. At the same time, the phenomenon of digital information technologies has formed new opportunities for both ICT enterprises and service clients based on speed, flexibility, availability and diversity (Figure 2).

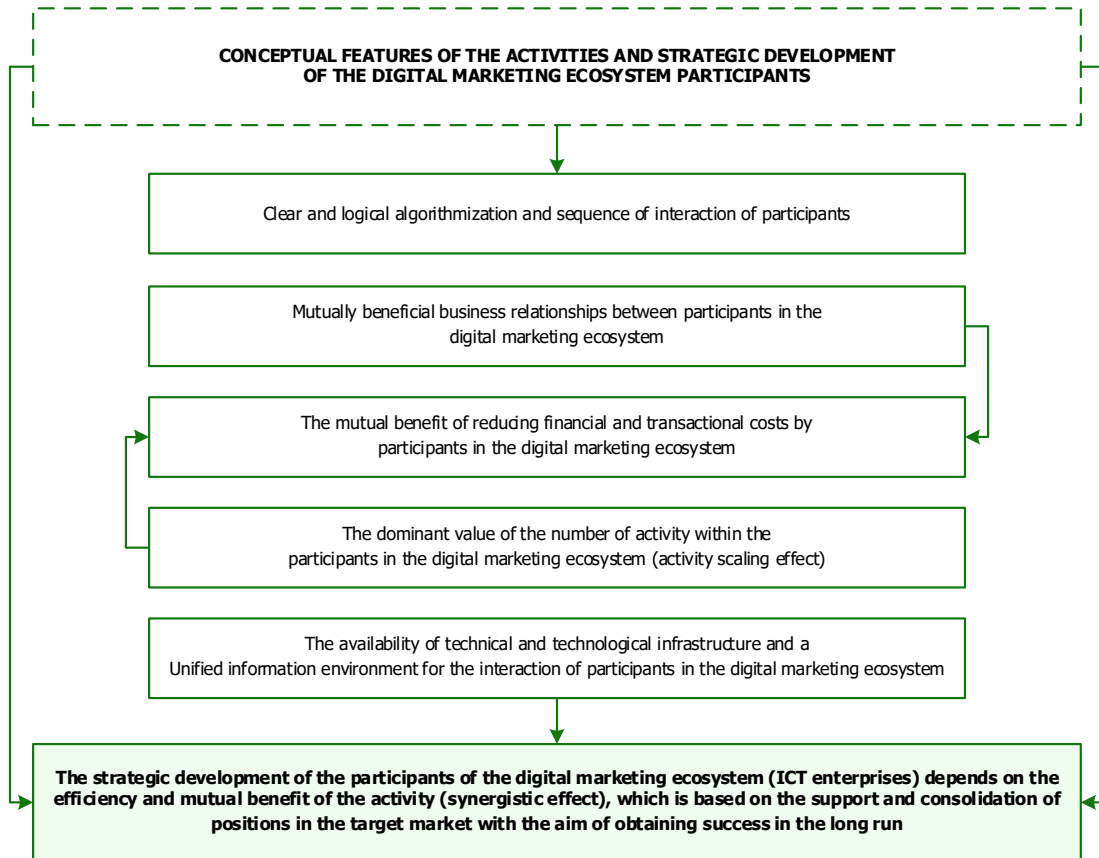


Figure 2. Conceptual features of activities and strategic development of participants in the digital marketing ecosystem.

The attractiveness of marketing ecosystems is due to their flexibility and sustainability. The ecosystem also includes a system of connecting new partners, which provides a wide opportunity to successfully interact with potential consumers who have different desires and preferences.

However, the digital ecosystem is characterized by certain shortcomings. Thus, the ecosystem consists not only of independent players, who, in turn, have limited access to control over the entire system in general but also the means for controlling the conduct of partners or their coercion of the higher management and control over the functioning of the ecosystem are also clearly defined. The dynamics and flexibility of ecosystems are also ambiguous since such a business model requires constant adjustment, based on the presence of extremely fast scaling rates of activity, which is possible only if the strategies for the development of ICT enterprises are implemented in order to improve the level of quality of the offered services and goods, expanding the assortment, providing opportunities for participants to be a constant, adaptable to changes, innovative component for updating the marketing ecosystem [21].

The study of the mutual benefit of the relations of the participants or the "win-win" principle showed that this very factor determines the convenience of using the service, penetrates deeply and fundamentally into the daily life of the consumer, causes addiction and dependence (companies cover various needs with the help of online applications).

However, it should be noted that often information and communication services and applications are perceived by consumers as something daily, routine and completely understandable, which, therefore, is not defined as a competitive advantage and does not contribute to the entry of new participants into the ecosystem. World experience shows that without providing the proper conditions for sustainable information development at the nano-economic level, it is impossible to ensure sustainable rates of economic growth for ICT enterprises in particular and the industry as a whole. Digital marketing ecosystems, the formation of which takes place according to certain principles, contribute to the realization of the resource potential of the population in the economy, which is formed at the expense of human capital, entrepreneurial activity and own amount of investment support (Figure 3).

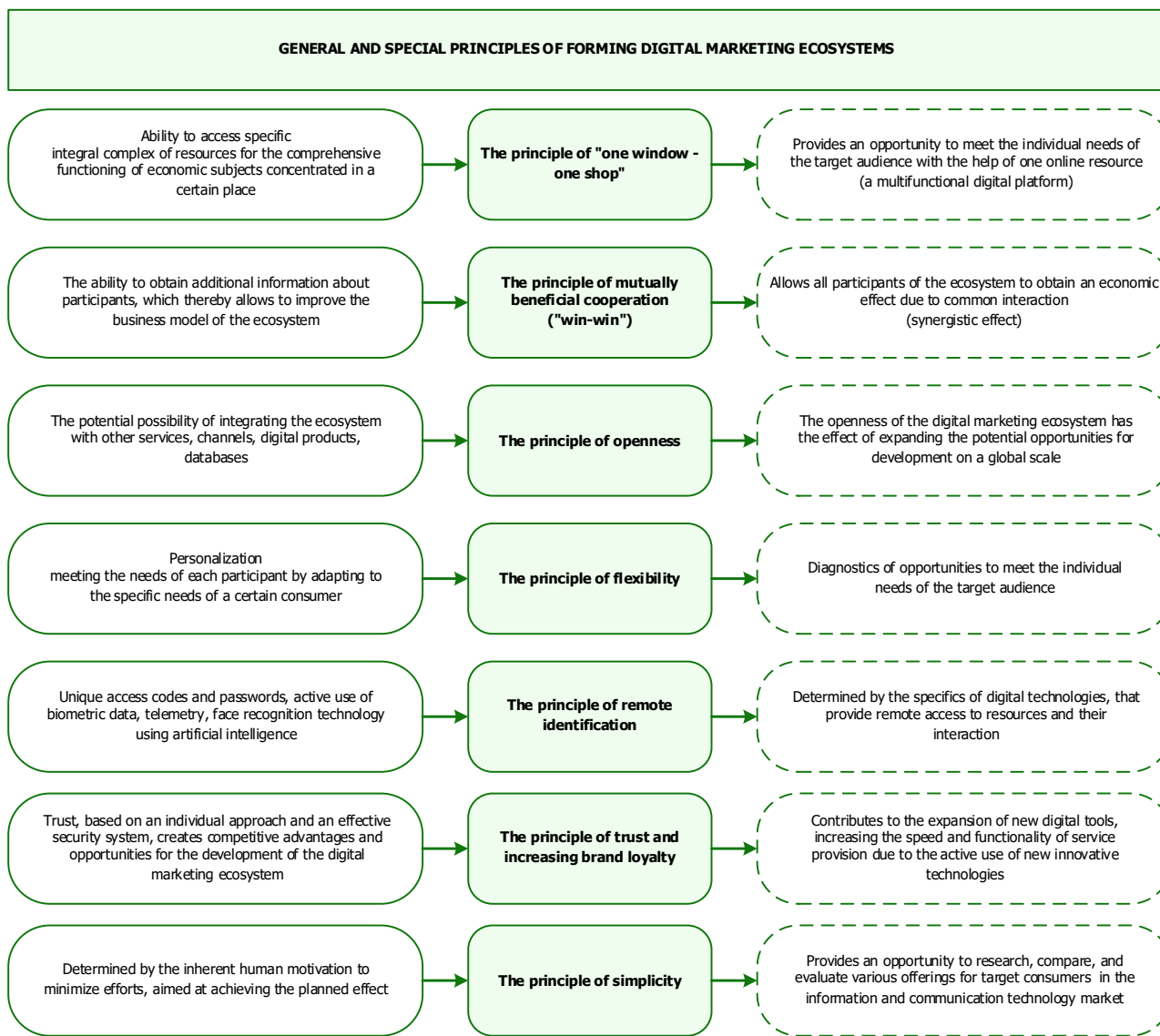


Figure 3. General and special principles of formation of digital marketing ecosystems.

Services, programs and applications may be provided by the developer of the digital platform and should be integrated by other partnership companies. On the basis of mutually beneficial cooperation, the ecosystem accumulates research and obtaining information about financial services development, where users of the ecosystem receive enhanced financial, informational and social accessibility, acceleration of the satisfaction of purchase needs or supply needs of certain services, decision-making efficiency and lower transaction costs [14].

The protectionist position on the market of ICT operators, as well as strategic activities to increase the share of the target market, should be aimed at the formation of marketing ecosystems using a client-centric approach. That is why, an important issue today is the importance of in-depth research into the needs and goals of the consumer circle of users.

Taking into account the above, for a better understanding of the key factors influencing the formation and increase of the loyalty of the target audience in the target market, a study and assessment of the level of satisfaction of the target audience was carried out based on a survey of the client base of the main operators of the ICT market (Figure 4).

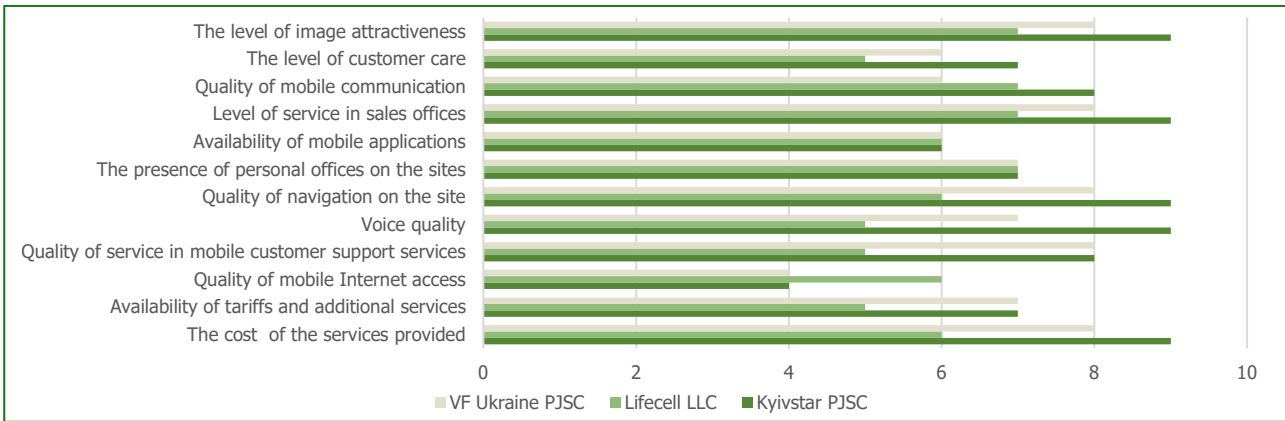


Figure 4. Evaluation of the level of consumer satisfaction with goods and services of ICT enterprises in the target market.

Based on the analysis of the data in Figure 4, it is worth noting that the estimated indicators of the level of satisfaction of the target audience with the goods and services of ICT enterprises are characterized by a positive trend for a number of factors, while there are also "weak" areas of activity that must be worked out in the direction of forming digital marketing ecosystems.

Solving the existing problems of the effective functioning of ICT enterprises should be considered under the prism of developing digital marketing ecosystems, taking into account such key priority strategic areas of development of ICT enterprises as occupying wider market niches, anticipating the growth of business value in their own interests, in the interests of the target audience of customers, in the interests of partners, as well as society – in general.

Modern society, as well as the institutional environment, is constantly transforming, therefore, the proper development of the ecosystem directly depends on its ability to quickly adapt to ultra-fast changes in the environment, revaluation of values, and changes in equipment and technologies.

In the near future, for an in-depth understanding of the situation in the domestic ICT market, we consider it necessary to confirm the expediency of forming ecosystems of operators of the ICT market as PJSC "Kyivstar", PJSC "VF Ukraine" and LLC "Lifecell" and the construction of service maps in order to determine the key strategic directions of the development of ICT enterprises based on the universality of activities and the uniqueness of the characteristics of each of the formed digital marketing ecosystems.

Kyivstar is the largest participant in the market of information and communication technologies in Ukraine, which provides mobile communication and data transmission services to more than 24.3 million customers and fixed Internet - to more than 1.1 million subscribers as of the 1st quarter (March) of 2023 [17] (Figure 5). As can be seen from Figure 5, the digital ecosystem of PJSC "Kyivstar" provides innovative solutions using Big Data, IoT, Cloud solutions, mobile financial services and others.

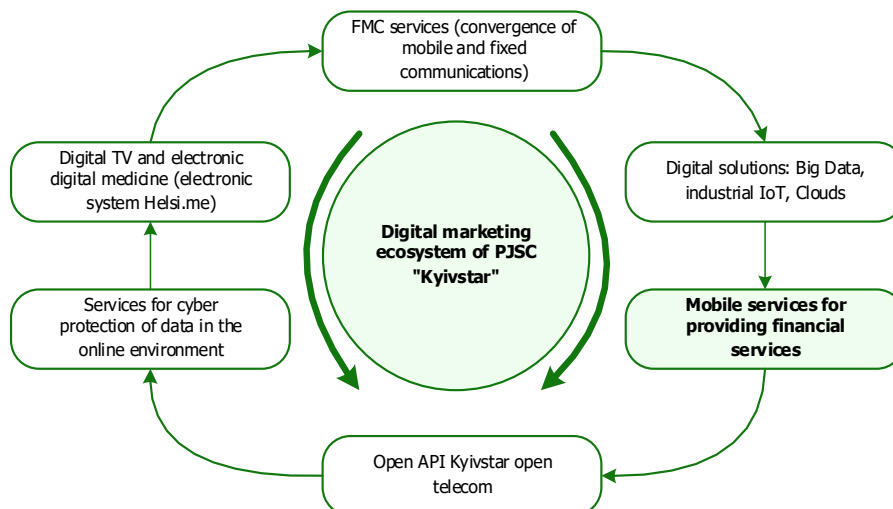


Figure 5. Map of services and applications of the digital marketing ecosystem of PJSC "Kyivstar".

The ecosystem of services for combating cyber threats from Kyivstar Business includes the "Data Protection" software solution of one of the leading American development companies, Commvault. It allows you to organize the protection of the company's important corporate information, its backup and recovery. Commvault is an innovator in data management. The company's developments are focused on predicting threats and supporting significant modern workloads in local, cloud and virtual environments. Such decisions are especially relevant in the difficult conditions of a significant increase in the number of cyber-attacks on business and state institutions in wartime conditions.

PJSC "VF Ukraine" is a leading Ukrainian telecom company that provides 3G and 4G high-speed Internet, fixed line and mobile Internet services. Starting from 2022, the liquidity indicators of PJSC Vodafone Ukraine significantly exceed the nominal values, only due to the significant growth of current financial investments. Record investments made it possible to ensure technological leadership and develop new technological services – Internet of Things (IoT), technologies and solutions for Smart City, big data analytics, fintech services, cloud services [18]. Possessing unique knowledge and using Big Data technology, Vodafone Ukraine will provide services for: describing portraits of the target audience, organizing targeted and retargeted advertising, making optimal decisions where it is better to open a new store, find potential buyers and retain customers, increasing the level of brand loyalty. Digital identity services provide a number of benefits, including the possibility of providing social services and social protection, improving access to financial services, increasing the protection of legal rights (including access to land ownership) (Figure 6).

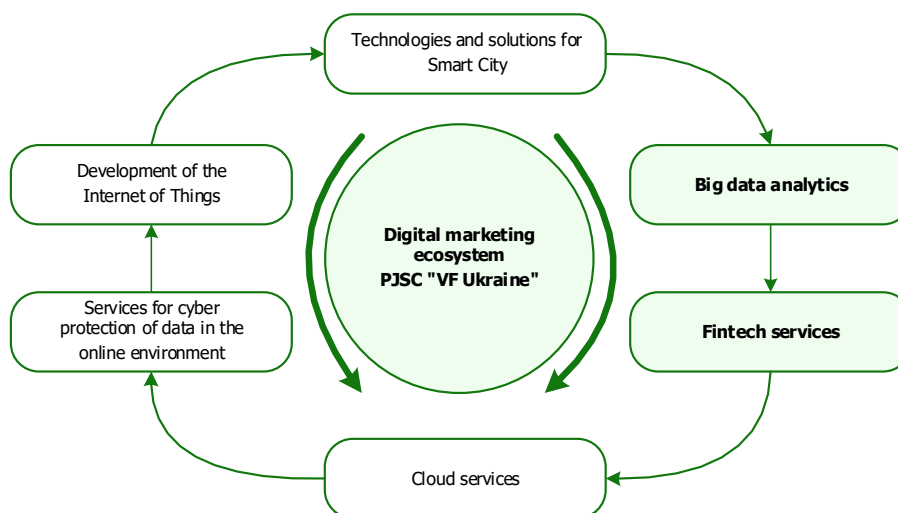


Figure 6. Map of services and applications of the digital marketing ecosystem of PJSC "VF Ukraine".

Another one of the enterprises that occupies a leading position in the target market in terms of the volume of ICT services provided is "Lifecell" LLC, whose subscriber base as of today includes 16.5 million subscribers. Understanding that the future of the country is the future of its citizens, the Lifecell operator directs its social activities to help people especially the least protected categories: people with limited physical capabilities, lonely elderly people, graduates of orphanages, who need care and help more than anyone else [18] (Figure 7).

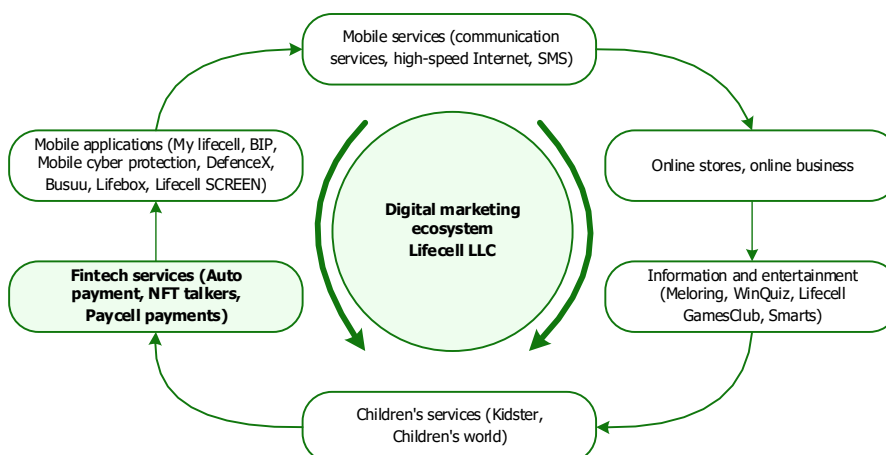


Figure 7. Map of services and applications of the digital marketing ecosystem of "Lifecell" LLC.

According to the received results of data analysis regarding service maps of the digital marketing ecosystems of the researched ICT enterprises (Figures 5-6), it is worth concluding that the largest technological and telecommunication companies of the ICT market quite actively expand the range of goods and services globally.

In order to determine the economic efficiency of the digital marketing ecosystem implementation, in the article, a strategic forecast of obtaining the optimal level of profitability using the author's approach - based on extrapolation and using the methods of least squares, the main task of which is the regularities of observations assessment, the formation of a database, the analysis of collected samples and, based on them, the appropriate statistics with further application for analytical calculations, in particular, for forecasts have been conducted.

In the current scientific research, a strategic forecast of obtaining the optimal level of profitability in order to determine the economic efficiency of the implementation of the digital ecosystem was carried out on the basis of financial and economic databases on the studied information and communication technology enterprises' activity (PJSC "Kyivstar", PJSC "VF Ukraine" and LLC "Lifecell"), Table 1.

Table 1. Dynamics of financial indicators of ICT enterprises (2018-2022).

Financial indicators	PJSC Kyivstar					PJSC VF Ukraine					LLC Lifecell				
	2018	2019	2020	2021	2022	2018	2019	2020	2021	2022	2018	2019	2020	2021	2022
Liquidity indicators															
Current liquidity ratio	0.82	0.23	0.26	0.48	0.89	0.59	0.42	3.19	3.28	3.77	0.1	0.11	0.2	0.35	0.6
Absolute liquidity ratio	0.67	0.1	0.14	0.27	0.48	0.46	0.27	2.98	3.02	3.26	0.05	0.06	0.14	0.28	0.48
Absolute liquidity ratio	0.81	0.22	0.25	0.47	0.88	0.58	0.41	3.19	3.27	3.77	0.1	0.11	0.2	0.3	0.6
Profitability indicators															
Profitability of company assets, %	29.22	36.43	40.34	39.65	26.9	9.55	8.61	4.28	10.73	2.8	-4.68	-8.15	17.17	5.69	5.34
Profitability of own capital, %	40.24	59.06	82.66	94.3	55.59	18.34	16.09	8.91	25.18	6.51	-	-25.08	42.87	7.66	11.09
Profitability of realized services, %	147.6	187.95	195.23	196.1	155.11	82.86	101.59	110.61	128.33	151.56	21.78	28.72	34.65	47.5	49.69
Profitability of sales, %	35.67	40.28	41.48	39.45	31.06	15.02	13.97	7.6	20.33	5.67	-11.55	-18.95	37.87	7.2	10.33
Profitability of activity, %	52.48	64.98	69.31	63.45	43.73	17.27	15.78	8.21	24.91	5.7	-9.48	-15.82	27.1	7.7	11.1
Indicators of financial stability															
Coefficient of financial independence	0.67	0.56	0.42	0.42	0.53	0.48	0.59	0.41	0.44	0.42	0.32	0.33	0.46	0.77	0.79
Coefficient of financial stability	0.69	0.66	0.68	0.78	0.77	0.71	0.74	0.87	0.87	0.86	0.49	0.49	0.67	0.72	0.65
Debt ratio	0.02	0.18	0.61	0.88	0.44	0.47	0.26	1.1	0.97	1.05	0.51	0.49	0.46	0.52	0.33
The coefficient of the ratio of own and borrowed funds	2.05	1.27	0.73	0.72	1.13	0.94	1.41	0.7	0.79	0.73	0.48	0.49	0.85	0.9	0.96
Equity maneuverability ratio	-0.08	-0.46	-0.55	-0.27	-0.05	-0.24	-0.26	0.71	0.68	0.899	-1.42	-1.39	-0.57	-0.38	-0.29
Coefficient of security with own working capital	-0.21	-3.3	-2.86	-1.1	-0.13	-0.69	-1.39	0.69	0.69	0.73	-9.01	-7.67	-7.05	-1.87	-0.68

With the method of extrapolation application, based on the determination of the least squares, the calculation of indicators of liquidity, profitability and financial stability was carried out within the scope of obtaining a synergistic effect from the success of functioning in the digital marketing ecosystem (an example of the calculation is given in Table 2).

Table 2. An example of a forecast calculation of the ratio of provision of own working capital for Lifecell LLC (for 2024).

	1	2	3	4	5	6	Amount
x	2018	2019	2020	2021	2022	2023	12123
y	-9.01	-7.67	-7.05	-1.87	-0.68	2.61	-23.67
x ²	4072324	4076361	4080400	4084441	4088484	4092529	24494539
x ³	8217949832	8.23E+09	8.24E+09	8.25E+09	8266914648	8279186167	49491286767
x ⁴	1.65838E+13	1.66E+13	1.66E+13	1.67E+13	1.67157E+13	1.67488E+13	9.99974E+13
x ² * y	-36691639.2	-3.1E+07	-2.9E+07	-7637905	-2780169.12	10681500.69	-96460721.21
x * y	-18182.18	-15485.7	-14241	-3779.27	-1374.96	5280.03	-47783.11

By analogy, the forecast values of the financial condition indicators of ICT enterprises (PJSC "Kyivstar", PJSC "VF Ukraine" and LLC "Lifecell") were calculated, the results of which are presented in Tables (3-16).

Table 3. Forecast value of the coefficient of equity capital maneuverability.

YEARS	PJSC Kyivstar	PJSC VF Ukraine	LLC Lifecell
2018	-0.08	-0.24	-1.42
2019	-0.46	-0.26	-1.39
2020	-0.55	0.71	-0.57
2021	-0.27	0.68	-0.38
2022	-0.05	0.899	-0.29
2023	0.03	1.06	-0.084
Forecast for 2024	0.57	1.12	-0.01

Table 4. The forecast value of the ratio of own working capital provision.

YEARS	PJSC Kyivstar	PJSC VF Ukraine	LLC Lifecell
2018	-0.21	-0.69	-9.01
2019	-3.30	-1.39	-7.67
2020	-2.86	0.69	-7.05
2021	-1.10	0.69	-1.87
2022	-0.13	0.73	-0.68
2023	0.31	1.18	2.61
Forecast for 2024	3.46	1.37	6.49

Table 5. The forecast value of the coefficient of the own and borrowed funds ratio.

YEARS	PJSC Kyivstar	PJSC VF Ukraine	LLC Lifecell
2018	2.05	0.94	0.48
2019	1.27	1.41	0.49
2020	0.73	0.70	0.85
2021	0.72	0.79	0.90
2022	1.13	0.73	0.96
2023	1.41	0.58	1.04
Forecast for 2024	2.37	0.40	1.07

Table 6. Forecast value of debt ratio.

YEARS	PJSC Kyivstar	PJSC VF Ukraine	LLC Lifecell
2018	0.02	0.47	0.51
2019	0.18	0.26	0.49
2020	0.61	1.1	0.46
2021	0.88	0.97	0.52
2022	0.44	1.05	0.33
2023	0.22	1.13	0.24
Forecast for 2024	-0.30	1.11	0.08

Table 7. Forecast value of the financial stability coefficient.

YEARS	PJSC Kyivstar	PJSC VF Ukraine	LLC Lifecell
2018	0.69	0.71	0.49
2019	0.66	0.74	0.49
2020	0.68	0.87	0.67
2021	0.78	0.87	0.72
2022	0.77	0.86	0.65
2023	0.83	0.84	0.63
Forecast for 2024	0.90	0.78	0.55

Table 8. Forecast value of the coefficient of financial independence.

YEARS	PJSC Kyivstar	PJSC VF Ukraine	LLC Lifecell
2018	0.67	0.48	0.32
2019	0.56	0.59	0.33
2020	0.42	0.41	0.46
2021	0.42	0.44	0.77
2022	0.53	0.42	0.79
2023	0.68	0.37	0.84
Forecast for 2024	0.92	0.32	0.97

Table 9. Forecast value of the activity profitability ratio.

YEARS	PJSC Kyivstar	PJSC VF Ukraine	LLC Lifecell
2018	52.48	17.27	-9.48
2019	64.98	15.78	-15.82
2020	69.31	8.21	27.1
2021	63.45	24.91	7.7
2022	43.73	5.7	11.1
2023	35.766	4.586	2.104
Forecast for 2024	6.55	-2.41	-12.85

Table 10. Forecast value of the coefficient of sales profitability.

YEARS	PJSC Kyivstar	PJSC VF Ukraine	LLC Lifecell
2018	35.67	15.02	-11.55
2019	40.28	13.97	-18.95
2020	41.48	7.6	37.87
2021	39.45	20.33	7.2
2022	31.06	5.67	10.33
2023	29.958	4.756	5.262
Forecast for 2024	19.32	-0.55	-14.7

Table 11. Forecast value of the profitability ratio of the realized services.

YEARS	PJSC Kyivstar	PJSC VF Ukraine	LLC Lifecell
2018	147.6	82.86	21.78
2019	187.95	101.59	28.72
2020	195.23	110.61	34.65
2021	196.1	128.33	47.54
2022	155.11	151.56	49.69
2023	98.804	163.08	51.558
Forecast for 2024	16.62	183.15	54.7

Table 12. Forecast value of the coefficient of return on own capital.

YEARS	PJSC Kyivstar	PJSC VF Ukraine	LLC Lifecell
2018	40.24	18.34	0
2019	59.06	16.09	-25.08
2020	82.66	8.91	42.87
2021	94.3	25.18	7.66
2022	55.59	6.51	11.09
2023	42.642	5.94	8.72
Forecast for 2024	-4.3	-0.22	-4.86

Table 13. The forecast value of the profitability ratio of the company's assets.

YEARS	PJSC Kyivstar	PJSC VF Ukraine	LLC Lifecell
2018	29.22	9.55	-4.68
2019	36.43	8.61	-8.15
2020	40.34	4.28	17.17
2021	39.65	10.73	5.69
2022	26.9	2.8	5.34
2023	21.822	2.18	-2.04
Forecast for 2024	4.42	-0.56	-13.94

Table 14. The forecast value of the quick liquidity ratio.

YEARS	PJSC Kyivstar	PJSC VF Ukraine	LLC Lifecell
2018	0.81	0.58	0.1
2019	0.22	0.41	0.11
2020	0.25	3.19	0.2
2021	0.47	3.27	0.3
2022	0.88	3.77	0.6
2023	0.938	4.036	0.714
Forecast for 2024	1.67	4.12	1.027

Table 15. Forecast value of absolute liquidity ratio.

YEARS	PJSC Kyivstar	PJSC VF Ukraine	LLC Lifecell
2018	0.67	0.46	0.05
2019	0.1	0.27	0.06
2020	0.14	2.98	0.14
2021	0.27	3.02	0.28
2022	0.48	3.26	0.48
2023	0.594	3.598	0.526
Forecast for 2024	1.147	3.52	0.74

Table 16. Forecast value of the current liquidity ratio.

YEARS	PJSC Kyivstar	PJSC VF Ukraine	LLC Lifecell
2018	0.82	0.59	0.1
2019	0.23	0.42	0.11
2020	0.26	3.19	0.2
2021	0.48	3.28	0.35
2022	0.89	3.77	0.6
2023	0.948	3.936	0.644
Forecast for 2024	1.68	3.975	0.903

In addition to solving the issue of increasing the profitability level of ICT enterprises, there should be a comprehensive promotion of the digital ecosystem's development by the participants of the target market. The study showed that all operators are trying to move in this direction with varying degrees of success: all three mobile operators are trying to develop marketing ecosystems around their communication services and their own subscriber base.

It is also worth taking into account the fact that in nowadays conditions, there is a wide range of shortcomings that are clearly demarcated in the formation of the problem field of the marketing activities of the investigated ICT market operators. Thus, a low client level of "immunity", constant readiness to change the operator, mistrust of the brand, loss of relevance of the Internet connection, high tariffs, constant changes in tariff plans lead to a gradual decrease in the level of trust of the target audience, which, in turn, leads to changes in the competitive situation and positioning ICT enterprises in the domestic target market. That is why the strategic directions of marketing activities of ICT enterprises must necessarily include the effective development of innovative products and services within the established digital marketing ecosystem to further increase market opportunities and increase the level of competitive advantages in the dynamically changing speed-developed market condition.

DISCUSSION

In today's rapidly expanding use of information and communication technologies, a number of large digital platforms have come to dominate their target markets. The dominance of large companies and their expansion into new ICT markets, creating large digital ecosystems, has led to increasing competition. In recent years, a small number of digital platform markets have become highly concentrated, dominated by just a few companies. In addition, the market positions of companies such as PJSC "Kyivstar", PJSC "VF Ukraine" and LLC "Lifecell" are becoming increasingly secure. This causes limited opportunities for new companies to participate, join and establish themselves in the ICT services market.

This high level of concentration is partly due to the economic activity of these platform markets. First, they demonstrate enormous economies of scale and scope, since they are expensive to install, but the cost of serving additional customers or the level of coverage of additional market shares is relatively low. Second, they benefit from significant "network effects." A classic example is a social network: each of us is more likely to use a particular service when there are more of our friends on it. This means that human activity, on the one hand, is adapted to technical and technological changes, and on the other hand, differences in individual preferences are the source of current changes. But there can also be "two-way" network effects: the more sellers there are to choose from, the more end-users are likely to take advantage of the opportunity, and the sellers are more likely to take advantage of market opportunities in the case of expanding target audiences. Third, data plays a critical role in digital platform markets, access to which is a by-product of the services provided, and is also a critical contribution to both the information and communication services provided and their monetization and also data, including collected from various services, can also be useful in developing new and innovative products.

It is worth agreeing with the results of research by well-known authors regarding the digitalization of various services as an important place in all spheres of ICT enterprises' activity. It is more profitable for many companies to join the ecosystem based on modern online technologies. The modern generation actively uses new technologies, formation and maintenance of a constant and stable level of demand for innovative personalized goods and services. These conditions lead to the development of economic exchange, while the market becomes an object of mass personalization.

It is worth also agreeing that these three factors - data, network effects and economies of scale – are extremely important, as they can lead to a strengthening of competitive positions not only in domestic but also in foreign markets. The target audience is unlikely to switch to a new competitor unless their friends switch too. New companies with innovative ideas cannot access the data intended to "train" their natural machine learning algorithms, while access to the same data is an important entry into new markets for the main existing platforms, thereby enabling dominant platforms to grow even if their offerings are less useful or innovative than those of newcomers. On the other hand, the largest digital platforms provide the opportunity to develop innovations and new valuable services, which are usually provided to users at very low cost or even free of charge while in fact – users pay for their privacy and allow their data to be collected.

But it is also worth emphasizing and indicating that identifying industry-based or functional hurdles affecting many of an enterprise's peers provides great insight into understanding the financial potential of shared digital ecosystems. Nowadays, operators who are market participants currently provide free communication services, especially for those consumers who have suffered as a result of the armed aggression of the Russian Federation. This is a paradox based on a misunderstanding with state authorities regarding the amount of taxes that operators must pay for providing services free of charge. Currently, population migration and logistics, especially road transport, are the key factors affecting the financial ensuring of the subscriber base of mobile operators. Therefore, all three companies try to balance "healthy economics" with "healthy strategic development" with the maximum possible volume of financial investments made and realized. It is clear that the economy that the target market company had in 2021 will no longer exist, perhaps in the future, because the interests of stakeholders must also be considered, where the country is positioned as a key stakeholder because it is a matter of survival and achieving financial security for ICT enterprises.

CONCLUSIONS

Thus, as of today, ICT enterprises occupy stable positions in the financial services market thanks to the expansion of the subscriber base by providing the possibility of using electronic payment systems. At the same time, by providing related services with applications and entertainment, additional clients are attracted who are interested and potentially active. That is, the strategic focus of the activities of ICT enterprises is shifted towards the digital user, the main advantages of which in favour of ICT enterprises should be considered the following:

- dominant potential for increasing the level of profitability of ICT enterprises;
- wide opportunities for access in media channels;

- potential opportunities for targeting and retargeting;
- effective brand policy in the direction of strengthening brand equity;
- the policy of increasing the level of consumer confidence.

To summarize, we note the main reasons why the strong market positions of digital marketing ecosystems are truly important. First, many information and communications services and products within digital marketing ecosystems are provided free of charge to end users through monetization through business user fees such as advertising campaign. Secondly, a successful innovation policy involves much more than just a good idea, since the ICT market requires access to relevant databases. For many potential innovators, the largest digital platform companies control some or all of these critical elements by controlling key relevant data from potential users. Third, the bargaining power of large ecosystems allows them to engage in strategic anticompetitive behaviour to keep competitors out of the market or limit their profitability.

During the research it was determined that the digital marketing ecosystem is a whole complex of interconnected elements of the organization of functional and institutional relationships of economic entities, the formation of which consists in ensuring the effective strategic development of ICT enterprises by initiating certain additional economic entities: state structures (state authorities, state institutions), business structures, non-profit organizations, communities and social groups of the population. It was established that the effective implementation of the developed digital ecosystem of ICT enterprises is based on a client-centric approach not only to attract the target audience with various goods and services but also to keep them within the functioning of the digital ecosystem in order to develop and implement the customer-centric approach by paying attention on financial services and products' diversification processes, increasing the loyalty range and figures within the marketing funnel of sales in order to achieve a high level of competitive advantages in the target market.

Summing up, we note that in the conditions of growing demand in the ICT market, online service is rapidly developing, and digital information innovations are being implemented, including digital information products, digital channels and business models, as a result of which there is a digitalization of cooperation: the increasing use of digital information and communication innovations in the relationship with management financial resources. Due to the high digitization of the complex of financial services, the enterprises studied in the article, ensuring a large part of the needs of potential clients in the digital marketing ecosystem are characterized as effective financial indicators obtained as a result of reaching a significant client base.

It was defined that to solve the issue of increasing the profitability level of ICT enterprises should be a comprehensive promotion of the digital ecosystem's development by the participants of the target market. The study showed that all operators are trying to move in this direction with varying degrees of success: all three mobile operators are trying to develop marketing ecosystems around their communication services and their own subscriber base.

In today's difficult conditions, there are enough prospects for the effective strategic development of ICT enterprises. The main thing to pay attention to is the maximum efforts of all market participants, including the state and foreign investors. Only by joint efforts is it possible to achieve the overall general goal of successful functioning and development of ICT enterprises in the long run.

ADDITIONAL INFORMATION

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CONFLICT OF INTEREST

The Authors declare that there is no conflict of interest.

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ФІНАНСОВІ АСПЕКТИ ФОРМУВАННЯ ЦИФРОВИХ МАРКЕТИНГОВИХ ЕКОСИСТЕМ У ЦАРИНІ ІНФОРМАЦІЙНО-КОМУНІКАЦІЙНИХ ТЕХНОЛОГІЙ

Основною метою, зазначеною в цьому науковому дослідженні, є здійснення комплексного аналізу та визначення ключових фінансових аспектів і проблемних питань щодо формування цифрових маркетингових екосистем у царині інформаційно-комунікаційних технологій.

Ураховуючи посилення процесів структурних ринкових трансформацій в умовах сьогодення, визначено, що екосистема – це цифрова платформа, де потенційний споживач отримує можливості купувати товари та послуги від різних виробників, посилюючи ефект від їх одночасного використання. Обґрунтовано, що на основі взаємовигідної співпраці в межах екосистеми акумулюються спільні зусилля її членів із метою отримання інформації, розширення спектру фінансових послуг, а також послуг електронної комерції, публічних і соціальних послуг. У структурі маркетингової екосистеми фінансові послуги є найважливішим її елементом, і тому потреба у високій гнучкості їх функціонування стає ключовим фактором у середньостроковій та довгостроковій перспективі для активного стратегічного розвитку ІКТ-підприємств шляхом безпосереднього отримання банківських та інших ліцензій або придбання існуючої на поточному ринку кредитної організації з ліцензіями.

Визначено, що основною метою формування цифрових маркетингових екосистем є надання послуг клієнтам у режимі реального часу, а також розвиток клієнтоцентричного підходу не лише для залучення цільової аудиторії, але й для її утримання в межах продуктів і послуг певної цифрової екосистеми, тим самим збільшуючи тривалість перебування споживача в екосистемі за рахунок фокусування уваги на його потребах, підвищення його лояльності до продукту або / та послуги, а також надання потенційному споживачеві сприятливих умов користування комплексом цифрових продуктів і фінансових послуг. Визначено, що для вирішення питання підвищення рівня прибутковості підприємств ІКТ необхідне комплексне сприяння розвитку маркетингових цифрових екосистем від учасників цільового ринку.

Ключові слова: цифровий маркетинг, екосистема цифрового маркетингу, сфера інформаційно-комунікаційних технологій, цільова аудиторія, фінансові послуги, клієнтоцентричний підхід, синергетичний ефект

JEL Класифікація: M15, M31, M38, O33