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# CONCEPTUALIZATION OF SYSTEM MANAGEMENT OF E-COMMERCE ENTERPRISES

The modern information stage of business development is characterized by digitalization of all processes, primarily commodity and money exchange. This reinforces the trend of dynamic growth in the number of electronic commerce (EC) enterprises, which is naturally accompanied by an increase in the volume of turnover, intensifying market competition between manufacturers, suppliers and sellers, expansion and improvement of product offers, implementation of artificial intelligence technologies in these processes. There is an objective need for a flexible and adaptive response of the corporate management of EC enterprises to permanent market changes in order to strengthen their own competitive advantages, as well as to develop a theoretical model of effective system management of an enterprise operating in such conditions. Such a model should be based on fundamentally new approaches to the system management of EC enterprises. Ukraine's participation in the formation of the global information society requires the development of the domestic EC segment, which involves the improvement of business processes in production and trade, the expansion of sales channels, the transformation of the labor market and the human capital management system. Such a necessity is intensified against the background of Russia's war against Ukraine. Despite the economic crisis caused by the war, the improvement of management approaches by EC enterprises should increase the efficiency of their business processes and lead to an increase in the competitiveness of the domestic economy. The aim of the article is to develop the conceptual foundations of system management of e-commerce enterprises. Based on the methods of scientific analysis and synthesis, the essence of e-commerce,

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### КОНЦЕПТУАЛІЗАЦІЯ СИСТЕМНОГО МЕНЕДЖМЕНТУ ПІДПРИЄМСТВ ЕЛЕКТРОННОЇ КОМЕРЦІЇ

Сучасному інформаційному етапу розвитку бізнесу властива цифровізація усіх процесів, передусім товарно-грошового обміну. Це підсилює тенденцію динамічного зростання кількості підприємств електронної комерції (ЕК), що закономірно супроводжується нарощенням обсягів товарообороту, загостренням ринкової конкуренції між виробниками, постачальниками й продавцями, розширенням та вдосконаленням товарних пропозицій, імплементацією технологій штучного інтелекту в иі проиеси. Виникає об'єктивна необхідність гнучкого та адаптивного реагування корпоративного менеджменту підприємств ЕК на перманентні зміни ринку з метою посилення власних конкурентних переваг, а також розробки теоретичної моделі ефективного системного управління підприємством, що діє в таких умовах. Така модель має трунтуватись на принципово нових підходах до системного менеджменту підприємств ЕК. Участь України у формуванні глобального інформаційного суспільства потребує розвитку вітчизняного сегмента ЕК, що передбачає вдосконалення бізнес-процесів у виробництві та торгівлі, розширення каналів збуту, трансформації ринку праці і системи управління людським капіталом. Така необхідність посилюється і на фоні війни росії проти України. Попри економічну кризу, спричинену війною, вдосконалення управлінських підходів підприємствами ЕК має підвищити ефективність їх бізнес-процесів та призвести до зростання конкурентоспроможності вітчизняної економіки. Метою статті є розробка концептуальних засад системного менеджменту підприємств електронної комерції. На основі методів наукового аналізу

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e-commerce enterprise is determined and the classic McKensey 7S model is developed in the case of system management of an e-commerce enterprise. Internal and external determinants of system management of EC enterprises are highlighted. The development of the classic McKensey 7S model and the analysis of the system management determinants of EC enterprises made it possible to conceptualize it and reveal the need for a scientific rethinking of management approaches at the level of domestic enterprises. This will contribute to the leveling of barriers to the effective introduction of new management approaches into management practice.

*Keywords:* conceptualization, determinants of system management, McKensey 7S model, artificial intelligence, digital technologies, e-commerce.

**JEL Classification:** M10, L29, L81, D21, O32.

Introduction

та синтезу визначено сутність електронної комерції, підприємства електронної комерції та розвинено класичну модель McKensey 7S у випадку системного менеджменту підприємства електронної комерції. Виділено внутрішні та зовнішні детермінанти системного менеджменту підприємств ЕК. Розвиток класичної моделі McKensey 7S та аналіз детермінант системного менеджменту підприємств ЕК дозволили концептуалізувати його та виявити необхідність наукового переосмислення управлінських підходів на рівні вітчизняних підприємств. Це сприятиме нівелюванню бар'єрів ефективного впровадження нових управлінських підходів у практику менеджменту.

Ключові слова: концептуалізація, детермінанти системного менеджменту, модель McKensey 7S, штучний інтелект, цифрові технології, електронна комерція.

The rapid development of information technologies (IT) and the widespread use of tools based on artificial intelligence (AI) contribute to the processes of digital transformation of business and form a new market environment that dictates new rules of market behavior to its participants, forcing to improve system management at enterprises and review established business processes according to the vector of the new information technology approach to digitization. Enterprises are resorting to mastering a new niche such as electronic commerce (EC) in order to expand their prospects of presence in the market, increase the volume of sales of products or provision of services through online sales, and increase the efficiency of all business processes, in particular financial transactions. Thus, enterprises transform their business models thanks to a change in the mechanism of commoditymoney exchange. The main difference of EC is the implementation of purchase and sale via the Internet, bypassing direct communication between the seller and the buyer. It is the intermediation of commodity and monetary exchange through the Internet that transforms entrepreneurial activity into electronic and commercial activity. The single technical standards of ecommerce are universal, which enables consumers to reduce their efforts in searching and selecting goods (Asbari et al., 2023).

Digital transformation is turning into an effective tool for business diversification and increasing competitiveness, but it is because of it that all management principles and strategies are shifting towards digital reality (Fedushko, 2023).

Large-scale digitization of the economy accelerates the tendency for enterprises to master the EC niche, increasing their operational and overall corporate efficiency. The effects of digitalization of business strengthen the positive impact of EC on profitability and other indicators of economic efficiency of enterprises. The latest scientific studies prove the direct impact of EC on corporate efficiency and the indirect impact through the mediation of business digitalization and operational efficiency. This allows managers to rethink system management approaches, and to implement the advantages obtained as a result of the positive interaction of digitalization and e-commerce into new management strategies. Financial resources obtained as a result of increased business efficiency, enterprises can invest in technologies that will improve the digitalization of business processes, which, in turn, will improve corporate activity and the ability of e-commerce enterprises to flexibly adapt to today's turbulent conditions (Santos-Jaen et al., 2023).

At the same time, an objective trend is forming, when digitalization, as an incessant process of penetration of communication technologies into all spheres of life, requires enterprises to develop management and information technologies that qualitatively change business processes and market conditions, reducing transaction costs. New multifaceted technologies are worth investing in and implementing in system management: they help businesses build up their customer base, supplier base, and support for electronic invoices helps integrate accounting systems (Kilay, 2022).

Thanks to digitalization, the effectiveness of communications with stakeholders in the spheres of supply, production, logistics, sales, financing, etc. increases, and new business processes appear. Today, more than 80% of consumers in the world tend to make purchases online through the global Internet, payment systems. In Ukraine, 70% of the adult population uses the Internet. The COVID-19 pandemic triggered and intensified this trend in the world and in Ukraine, in particular: among Ukrainians, the level of Internet use has increased to 80%, and 33% of the adult population are consumers of e-commerce enterprises, and this trend is only increasing (Results of the CBR study, 2021).

E-commerce, given the high risks of domestic and global market instability and increased volatility, is turning into a necessary management tool for ensuring the continuity of business processes, increasing the quality of valuable product offers and strengthening the company's competitive advantages.

Currently, the market system of sales is outgrowing its limits both due to the development of information systems and the permanent quantitative and qualitative growth of the needs of consumers, primarily Internet users, which gives them access to a wide range of goods and services. The concept of managing traditional sales is transformed into the concept of EC management, which, in turn, needs effective digital platforms to perform document collection operations, transaction registration, reporting, etc. The need for EC enterprises to partner with digital platforms is reaching such a level that it is referred to as "digital platform hegemony" (Khattak, 2022). EC enterprises are using digital platforms to standardize, distribute, and change business process data on an unprecedented scale (Williamson, 2021). Thanks to digital platforms, enterprises embody new business ideas; implement technological innovations, new management technologies by strategically aligning goods with core activities (Freixanet, 2021; Motoryn et al., 2021).

Thus, under the influence of digitalization, the EC enterprise management system is complicated by the emergence of such new subsystems as: information flow management, digital HR, automated management of warehouse stocks and logistics in general, web server management, data analytics, blockchain, the Internet of Things, risk- management, in particular, risk diversification. All this is aimed at minimizing the potential negative consequences for enterprises. The synergistic effect of these management subsystems can create a powerful impetus for the development of enterprises in the field of e-commerce and strengthen their competitiveness.

Awareness of this forces business owners to look for new management approaches and introduce the latest information technologies into corporate management. There is a need to conceptualize the system management of EC enterprises, which will create a basis for supporting business processes and increase their efficiency.

There is currently no single definition of "electronic commerce" in the scientific literature. Thus, in the Law of Ukraine "On Electronic Commerce" dated September 3, 2015, it is defined as "relationships aimed at obtaining profit, which arise during the execution of transactions related to the acquisition, change or termination of civil rights and obligations, carried out remotely using information and communication systems, as a result of which the participants of such relations have property rights and obligations" (Law of Ukraine "On Electronic Commerce", 2015).

In modern national economic literature, the definition of EC as a commercial interaction of business entities, which is carried out with the help of the global Internet network, prevails. This is exactly the definition proposed by N.S. Medzhibovska, who defines electronic commerce as the exchange of information, support of business relationships and conducting business transactions by means of telecommunication networks (Medzhibovska, 2004).

S.S. Lukachyna, researching the conceptual basis of the management of an e-commerce enterprise, suggests considering the latter in the context of two approaches: economic and legal – and concludes that in the management system of such enterprises it is necessary to take into account the advantages and disadvantages characteristic of electronic commerce (Lukachyna, 2023).

According to Guven H.'s approach, e-commerce should be considered inextricably linked with digitalization of sites and digital marketing. EC, according to the scientist, plays a decisive role in procurement processes, at the stage of making purchase decisions (Guven, 2020).

According to Holsapple C., Singh M., EC can be defined as activities or services related to the purchase and sale of goods or services via the Internet (Holsapple & Singh, 2000). Firms are increasingly turning to EC due to the growing customer demand for online services and its ability to create competitive advantages (Gielens & Steenkamp, 2019).

There is also an approach to defining EC as a set of subjects of commerce and the telecommunications environment. In particular, J.S. Tertychny indicates that EC should be understood as any type of tradeentrepreneurial, trading, commercial-mediation activity, participation in trade, sale of goods, real estate, securities, provision of services with the aim of obtaining profits, which is carried out remotely using information-telecommunication systems (Tertchyny, 2018).

Such technologies, on the one hand, increase business efficiency, but on the other hand, they present management with the task of flexible adaptation to its relentless development. Some firms have difficulty with e-business practices because of its deep integration with rapidly changing, easily implemented, and accessible information technologies. This forces firms to constantly adapt their business models to the changing needs of customers and suppliers through a strategy of entrepreneurial orientation, mutual understanding, mutual commitment, and relational harmony (Niu et al., 2020).

Artificial intelligence (AI) is the newest of these technologies. It is transforming e-commerce through its ability to "correctly interpret external data, learn from such data, and use that knowledge to achieve specific goals and objectives through flexible adaptation (Kaplan & Haenlein, 2019). Western researchers Bawack R., Wamba S., in order to level the threats of the rapid development of new technologies, suggest that enterprises examine certain information systems for their acceptability to specific business models, increasing the effectiveness of their implementation in operational processes (Bawack et al., 2022). In particular, blockchain technology facilitates the development of an autonomous transaction system for e-commerce applications and minimizes data storage and consumer privacy risks by monitoring and recording each transaction (Sekar, 2022).

Hidayat A., Dewantara A. advocate the development of a separate concept of an information management system for the implementation of EC with integrated data and storage in databases. This is a prototype concept that requires the development of a website, the design of which uses the Hypertext ProProcessor (PHP) programming language and the MySOL database (Hidayat et al., 2020).

Depending on the context, AI in EC operations can be a system, tool, technique, or algorithm (Akter et al., 2021). This creates opportunities for firms to gain competitive advantage by using big data to create unique product offerings for their customers through personalized services (Niu et al., 2020).

Domestic researchers O.L. Andronik and A.V. Voronin believe that the concept of electronic commerce can be interpreted in both a broad and a narrow sense. In a broad sense, EC is any economic activity that includes the use of electronic information technologies. In a narrow sense, EC is a commercial activity of buying or selling goods and services on the Internet for profit (Andronik & Voronin, 2021).

At the same time, the majority of scientists identify this concept with electronic commerce, referring to the fact that electronic commerce is the key link of electronic commerce in the conditions of the modern development of the global Internet network. In part, this identification of concepts occurred due to the fact that e-commerce has recently become more and more widespread, gradually displacing traditional retail trade from a number of areas due to the provision of the most convenient for consumers the conclusion and execution of B2C (Business to Consumer) segment agreements., B2B (Business to Business) and B2G (Business to Government) (Nathaniela et al., 2022).

Despite the similarity of these concepts, the Law of Ukraine "On Electronic Commerce" provides two separate definitions of the concepts "electronic commerce" and "electronic commerce". Thus, EC is defined as "relationships aimed at obtaining profit, which arise during the execution of transactions related to the acquisition, change or termination of civil rights and obligations, carried out remotely using information and telecommunication systems, as a result of which the participants of such relations have rights and responsibilities of a property nature". The Law interprets electronic commerce as follows: "economic activity in the field of electronic purchase and sale, sale of goods remotely to the buyer by making electronic transactions using information and telecommunication systems" (Law of Ukraine "On Electronic Commerce", 2015).

One should agree with the approach that indicates the impossibility of identifying the analyzed concepts. The essence of the English-language term "electronic commerce" according to the interpretation given by the World Trade Organization is understood as "the production, distribution, marketing, sale or delivery of goods and services by means of electronic means", and its rapid development is due to the wide use of the Internet and digital devices, that provide consumers with direct access to the online market (World Trade Report, 2018).

According to the UNCTAD methodology, electronic commerce covers all forms of transactions related to the commercial activities of organizations and individuals, which are based on the processing and transmission of digital information, including texts, sounds and visual data. EC governance should aim to create and maintain a dynamic and inclusive EC ecosystem that can contribute to sustainable development (E-commerce Strategies, 2018).

The Tax Code of Ukraine No. 2755-IV dated 02.12.2010 defines the regulatory approach by which EC enterprises perform a fiscal function, ensuring compliance with statutory requirements for taxation (Tax Code of Ukraine, 2010).

The issues of system management of EC enterprises become especially relevant against the background of the war started on February 24,

2022 by the aggressor state Russia against Ukraine. War is considered by scholars as an external shock to the market environment, causing disruptions in the transmission, production, and sale of goods. On the one hand, bans on the movement of goods across borders, or its restrictions, contribute to the intensification of trade in the field of electronic commerce. Indeed, in the long run, the war looks like a game changer for the growth of the e-commerce market (Grabara, 2022).

On the other hand, the war and the resulting economic crisis are having a detrimental effect on global e-commerce due to changes in the digital behavior of buyers against the background of economic sanctions against Russia and the blocking of a large part of online payments. This inevitably affected the online shopping behavior of all shoppers (Qadir et al, 2023).

According to an analytical study by Statista, the EC market in Ukraine as a result of the war experienced a sharp decline in 2022 and a gradual recovery in 2023. In 2017-2021, the e-commerce market grew three times, from USA 1,180.65 million in 2017 to USA 3506.98 million in 2021; however, in 2022 it decreased 12 times to USA 295.85 million. Analysts' forecasts are optimistic: in 2024, they expect the market to grow to USA 3,302.23 million and in 2025 it is up to USA 4039.53 million. (E-commerce in Ukraine, 2023)

Therefore, against the background of the negative impact of migration processes on the branches of the national economy, EC, despite the reduction in the volume of trade, has the potential to increase turnover, improving conditions for the business sector and accelerating its integration into the European digital space (Zatonatska, 2023).

Despite a significant layer of theoretical development, a unified approach to the study of system management of e-commerce enterprises has not been formed in the economic literature. The above analysis of the existing definitions of electronic commerce showed that there is no generally accepted concept of the essence and content of EC. The issues of a relatively clear definition of the term "e-commerce enterprise", the complete implementation of purchase and sale transactions using electronic means, the relationship between the concepts of e-business and e-commerce, e-commerce and e-commerce and other related but not identical concepts and categories remain debatable.

The aim of the article is to develop the conceptual foundations of system management of e-commerce enterprises, which will form the basis of new management approaches. The tasks of the research are the analysis of existing theoretical approaches to EC and the definition of the concept of "electronic commerce enterprise", the identification of approaches to the essential definition of the concept of "electronic commerce", new elements of the EC enterprise management system, the justification of the basic determinants of the EC enterprises and their system management; outlining the barriers that prevent the theoretical formation and practical implementation of new management approaches in Ukraine.

The information base consists of legislative documents, UNCTAD materials on EC strategies, classic and state-of-the-art research and business analytics materials.

In order to conceptualize the system management of EC enterprises, the following research hypothesis is put forward: the implementation of a new structural element into the classic McKensey 7S model will deepen the analysis of system management as such and contribute to the identification of internal and external determinants of the management of e-commerce enterprises.

Hypothesis testing and its algorithm will include the method of analysis and synthesis when developing the classification of the concept of "electronic commerce" according to the criteria of conceptual approaches; structural method when introducing new structural elements into the McKensey 7S model; the method of synergy in the study of the EC enterprise as a system of constituent elements: internal determinants (the core of the system) and external determinants (its superstructure) and the identification of joint results of their interaction. The methodological limitation consists in abstracting from a number of factors of EC enterprise activity, which in one way or another affect its management: industry specificity, structure of costs and financial resources, degree of innovative activity, etc.

The content structure of the main part of the research consists of the following elements, such as analysis of conceptual approaches to electronic commerce, EC enterprises; deepening of the McKensey 7S model in the case of the EC enterprise; determinants of system management of EC enterprises.

# **1.** Analysis of conceptual approaches to e-commerce and e-commerce enterprises

Understanding the essence of e-commerce as a system of economic, in particular, commodity-monetary relations carried out with the help of the Internet and digital technologies, allows you to consider the EC enterprise as a business entity that conducts financial and monetary transactions for the purchase and sale of goods and services via the Internet. Accordingly, all business processes in such an enterprise, starting with the formation of a management strategy and ending with personnel management, take place with the aim of increasing the efficiency of the Internet sales process.

A clearer definition of the concept of "e-commerce enterprise" can be formulated on the basis of a methodological comparison of related concepts and categories: "e-commerce at the enterprise", "e-business", "electronic commercial activity", "entrepreneurial activity based on electronic commerce".

According to Article 263 of the Economic Code of Ukraine, economic and commercial activities are actions carried out by economic entities in the field of commodity circulation, aimed at the sale of products for industrial and technical purposes and consumer goods, as well as auxiliary activities that ensure their sale by providing relevant services (Economic Code of Ukraine, 2003). The rapid development of EC naturally requires regulatory and legal regulation of this sphere, taking into account the trends of digitization of all socially significant processes.

The concept of "enterprise e-commerce" is much narrower compared to the concept of "e-commerce enterprise", since the exchange of goods and money over the Internet is not systematic, but sporadic in nature. That is, if an enterprise in the field of trade from time to time sells and carries out financial and monetary transactions of such sales of goods via the Internet, combining them with traditional sales channels, it is not an EC enterprise, but an enterprise with electronic commercial sales channels.

Regarding the juxtaposition of the categories "e-commerce" and "e-business", e-business is much broader in content and can both cover EC and focus only on the presentation of goods or relations with consumers at the after-sales stage. Thus, according to the Western scientist Elias M. Awad, at the moment when value is exchanged, e-business becomes e-commerce. EC itself is a revenue generator for enterprises that have decided to use the Internet for the sale of goods and services (Elias, 2005).

Electronic commercial activity is a type of economic activity that is conducted electronically, has a full cycle of business processes and, like a traditional economic activity, has a number of operations: ordering goods, confirming, making online payments, delivering the order (Miroshnyk & Litvynenko, 2022).

That is, in essence, an enterprise that implements electronic commercial activity in practice and is an electronic commerce enterprise. The term "entrepreneurial activity based on electronic commerce" means the activity of business entities with the aim of obtaining income from sales using information and communication systems and technologies. That is, the EC is the basis of such entrepreneurial activity.

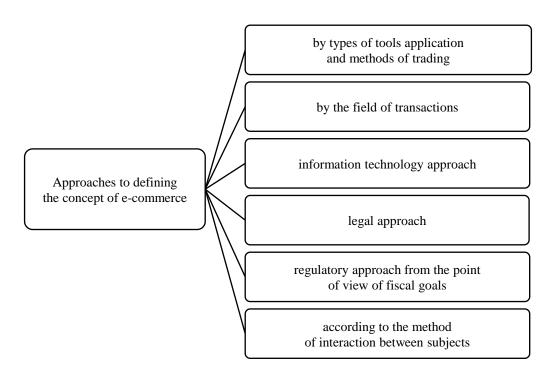
The presence of a website in itself is not a criterion for classifying an enterprise as part of the EC sphere. Websites, online stores, trading platforms, through which companies display their products for further sale, transform traditional trade into electronic. However, e-commerce is a broader concept, it includes e-commerce. However, the criterion for assigning the enterprise to the sphere of EC is the fact of carrying out a full cycle of commodity-money relations via the Internet. An enterprise can then be considered e-commercial when it implements trade behavior in which commodity exchange takes place, transactions using information and network technologies, Internet platforms (Dongdong, 2021).

Having outlined the methodological features of the categories related to EC and defining the essence of the EC enterprise, we will proceed to the classification of approaches to this concept and the analysis of the system management of EC enterprises. One of the main tasks of system management is the study of the set of properties of the management decision-making process. A set is defined as a set of units that have some common attributes in accordance with the research objectives. Such a definition suggests that management deals primarily with systems. Accordingly, understanding the essence of the system, its features and internal relationships is the main content of system management.

Such a systemic vision of management contains a set of systemic methods of perception, cognition and transformation of the economy, including theory, practice, policy and economic management. According to this concept, strategic management is the basis and source of the co-evolutionary development of economic planning systems, the structural organization of the subject area of management, the implementation of strategic directives, as well as the system of mechanisms for coordination and interaction of independent management objects (Kleiner, 2023).

The definition study of e-commerce available in the economic literature showed that, as a rule, each of them contains three components: structural and process, technological and legal.

Approaches to defining the concept of EC are essentially systematized in *Figure 1*.



# Figure 1. Classification of approaches to defining the concept of electronic commerce

Source: developed by the author.

Based on the integration of the images shown in Figure 1, it is possible to determine the essence of electronic commerce as an economic activity in which commodity exchange is carried out using information and network technologies. At the same time, the EC performs a fiscal function; needs legislative regulation, elimination of terminological conflicts at the level of legal acts. EC is implemented through digital platforms; transactions take place in the field of telecommunication networks. The EC concept is formed within the framework of the information technology approach, according to which digital transformation contributes to the diversification of business and its development of new market niches of Internet commerce. The method of interaction between EC subjects is not direct communication, but mediated by the Internet.

Accordingly, the EC enterprise management system itself must take into account the aspects of effective implementation of new information technology tools and methods of trade, transaction management, legal norms, including tax, regulation of this sphere and promote the most effective interaction of all its subjects.

According to the author's thought, the management system is a part of the social and economic system, isolated on the basis of connections that characterize the relationship between objects and the subject of management. Any management system is formed by the subject of management, but it has an objective nature, as it is based on laws and principles of management. The management decision is the final result of the management subject's thinking process and is a tool for the interaction of the management subjects expect the solution of a certain problem and the achievement of the desired results. A timely and competent management decision creates prerequisites for achieving the goal of the company's activities. However, the subject of management when making a management decision is extremely dependent on the quality and completeness of information provided by executive systems.

The effectiveness of the management system of the EC enterprise is determined by the synergy effect, that is, the aggregated qualitative effect of the interaction of management subsystems, which is significantly higher than the effect of the action of each subsystem in the form of their simple sum.

The idea of imbalance and chaos as the basis of systems development became the basis for the development of H. Haken's theory, within which the term "synergetics" (translated from Greek – "joint strengthening") was first introduced into circulation. Developing L. Bertalanfi's thesis about the open nature of systems (Bertalanfi, 1950), H. Haken formulated the proposition that as a result of the self-organization of system elements, it acquires a new characteristic that is not equal to the sum of the corresponding characteristics of individual elements or is completely absent from them (Haken, 2020). This principle has become one of the main ones in all fields of knowledge, because in each of them there are examples that confirm the correctness of this thesis.

# 2. Deepening the McKinsey 7S model

Common values are important for achieving synergies. This view is confirmed by the McKinsey 7S model, which is based on the analysis of the impact of internal factors on the development of an enterprise.

The McKinsey 7S model was developed in the early 1980s by Tom Peters and Robert Waterman, two consultants who worked for the consulting firm McKinsey & Company (Peters & Bay, 2011).

This model was used to analyze more than 70 large organizations. The peculiarity of the model is the fact that it was created as a recognizable and easy-to-remember model in business.

The seven elements, which the authors called "levers," begin with the letter "S" and include "strategy," "structure," "systems," "style," "staff," "skills," and "shared values." *Table* summarizes the definition of the elements of this classical model and contains an additional component – the implementation of EC with its inherent subsystems in the enterprise management system.

Table

Elements	Definitions	Implementation of EC in the enterprise management system
Strategy	Actions that a company plans to take in response to changes in its external environment to maintain and enhance its competitive advantage	Digital strategy is actions taken by the company to improve website search engine optimization, content marketing, social media promotion, big data analytics, etc.
Structure	The basics of organizational hierarchy, information interaction and coordination of activities of individual structural units in a single system with the definition of subordination and areas of responsibility. The structure is influenced primarily by the strategy, size and diversity of the organization	Structural hierarchy, structural coordination of elements of the e- business business model: business analytics, customer relationship management, supply chain management, enterprise resource planning, partner communications and e-transactions via Intranet and Extranet
Systems	Formal and informal procedures that are performed by employees on an ongoing basis to achieve certain work results and are aimed at implementing the organization's strategy, achieving its goals and supporting the organization's structure	Systematic actions aimed at generating profit, carried out remotely using information and communication systems
Style / Culture	It mainly refers to the management style and culture of top-level managers. This element consists of two components: organizational culture: the dominant values, beliefs and norms that evolve and over time become relatively stable features of organizational life – its atmosphere; management style: depends more on what managers do than on what they say; how managers spend their time; what they focus on	Corporate culture of the virtual organization

Definition of the elements of the McKinsey 7S model

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End of Table

Elements	Definitions	Implementation of EC in the enterprise management system
Staff	Human Resource Management (HRM) – processes used in the organization to develop managers, form their basic values and skills as managers, socialization processes and ways to introduce young personnel to the company, forming a team spirit among employees and effective knowledge management	Digital HR management based on the introduction of new HR management practices
Skills	The actual skills and competencies of employees working for an organization, the combination of which allows the organization to be competitive. Changes in the organization's strategy can have a decisive impact on the formation of the need to change or, conversely, improve the skills of employees	Application of digital skills and competencies
Shared Values	The fundamental principles and beliefs that define the culture, identity and focus of an organization, its mission. They include norms and standards of employee behavior, professional ethics, and approaches to doing business. Shared values are the central element of the organization's activities and are reflected in all aspects of the organization's activities. Changing them will lead to changes in all other elements of the system	Formation of online communities with corporate standards of behavior for company personnel and online consumer communities

Source: compiled by the author based on Peters & Bay, 2011

The management strategy of an EC enterprise (Strategy) is complemented by actions to improve search engine optimization of the website, content marketing, social media promotion, big data analytics, etc. It is the management strategy of EC enterprises that lays down the vector for the implementation of commodity and monetary exchange, financial and monetary relations through Internet platforms, which distinguishes them from other enterprises. The strategy of EC enterprises is aimed at creating an optimal information base conducive to the development of e-commerce platforms operating in the context of global digitalization and within legal restrictions (Alazzam et al., 2023).

The structural divisions of an EC enterprise (Structure) are business intelligence, customer relationship management, supply chain management, enterprise resource planning, partner communications, and electronic transactions via the Intranet and Extranet. Systematic actions (Systems), which are aimed at generating profits, are carried out mostly remotely using digital platforms and AI technologies. At the same time, the sequence of digital strategic actions initiated by the EC platform has a significant impact on the competitive advantages in the market interaction of EC enterprises (Hu et al., 2022).

Corporate culture (Style) as a unity of organizational culture and management style is transformed into a kind of virtual culture that develops at the levels of organization creation, operation of material and technical means, work with clients and interaction with agents (personnel). An important level of the corporate culture of an EC enterprise is a set of norms, rules and actions to protect information circulating in the organization (Loiko, 2013). An important aspect here is the trust of the EC enterprises in digital platforms, whose culture is determined by sustainability, uncertainty avoidance and long-term orientation (Qin, et al, 2021).

The HR subsystem is undergoing significant changes in the EC organization. This is due to the influence of globalization trends, job automation, large-scale digitalization, and restructuring of activities that expand partnership opportunities. The phenomenon of digital HR is emerging as a system of effective interaction of human resources (with more developed skills and knowledge that form digital competencies), a digital workplace and the use of new methods of human resource management (Future Work Skills, 2020). Moreover, digital HR at EC enterprises is developing taking into account qualitatively new technologies: AI algorithms in HR, social networks, cloud services, crowdsourcing, onboarding, etc. that form fundamentally different management strategies in the context of modern trends in HR analytics, HR automation, HR marketing, Smart recruiting, and e-learnin.

The Skills subsystem is expanded by corporate web portals that significantly increase staff productivity through optimization of the management system, use of an internal corporate portal, and increased employee awareness. Such an information system generates personalized recommendations for each employee with automatic linkage to the relevant structural unit of the enterprise, quickly responding to changes in the services available to the employee (Elsner & Krämer, 2013).

Thus, the range of employees' professional competencies is expanded by digital skills – a set of knowledge and skills necessary for the effective use of information technology by employees and the growth of their labor productivity (Kuibida, 2019). Shared Values under the influence of digital technologies are transforming towards the formation of virtual communities with a common mission and norms of corporate behavior, consumer communities where the information and communication interface supports the business processes of the enterprise and online purchases of loyal consumers in the supply chain pull strategies (Utami et al., 2021).

### 3. Determinants of e-commerce enterprise management

Based on the results of the carried out analysis, the determinants of system management of the EC enterprise in the context of the system approach are allocated. According to L. Bertalanffy's theory of system openness, each system cannot be considered as isolated, it is necessary to take into account its constant exchange of material, energy and information resources with the external environment (Bertalanffy, 1950).

Given Haken's theory of self-organization of systems (Haken, 2020), each management system of an EC enterprise is a synergistic unity and interaction of internal and external determinants.

The main external determinants that determine the features of the system management of an EC enterprise include information technology, knowledge, monetary and financial relations, labor and human resources (*Figure 2*).

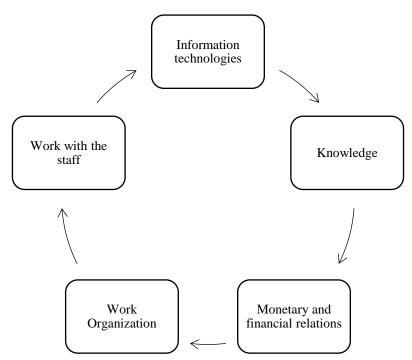


Figure 2. External determinants of e-commerce enterprise system management

Source: developed by the author.

When examining the internal determinants, we note that the EC concept is characterized by integrated decision-making in such areas as business operations and information technology. One of the main ideas of the presented study is to combine the functionality and components of EC in order to position an e-commerce enterprise as a system.

The system of any EC enterprise consists of several important components:

- database
- website of the e-commerce enterprise;
- security system;
- payment gateway.

These components define the internal content of the e-commerce enterprise and are the core of its system. The diagram in *Figure 3* shows how these components are combined together.

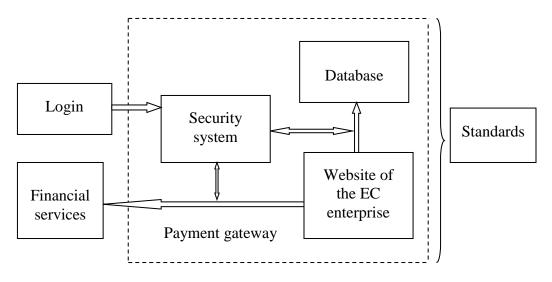


Figure 3. Internal determinants of e-commerce enterprise system management

Source: author's development.

These components are the internal determinants of the system management of an EC enterprise, since they are explained in terms of e-commerce, rather than general systems theory, i.e., in a sense they are "tangible" or "real", important for the functioning of the enterprise and achievement of effective results.

The internal and external determinants of the system management of an EC enterprise interact with each other and lead to synergistic effects that result in the formation of a qualitatively new ecosystem of financial business, human resource management, improved customer experience, increased sales and profits.

#### Conclusions

It is proposed to consider the activities of EC enterprises on the basis of a systematic approach as a synergy of interaction of internal and external determinants of their management. At the same time, an enterprise can be classified as an EC enterprise when its activities are aimed at the full cycle of commodity-money relations via the Internet.

The article is defined the essence of an e-commerce enterprise by the prevailing feature of realization of the full cycle of commodity-money relations via the Internet. On the basis of a methodological comparison of categories related to EC, it is proved that EC enterprises include enterprises that implement commodity exchange, transactions using information and network technologies, Internet platforms.

The author reveals the essence of EC as an economic activity in which commodity-money relations take place only on the basis of information and network technologies and digital platforms, without direct communication ISSN 2786-7978; eISSN 2786-7986. SCIENTIA FRUCTUOSA. 2024. № 2 93

between sellers, buyers, suppliers and other stakeholders. E-commerce performs a fiscal function along with traditional businesses, but requires proper legal regulation. Conceptually, EC is formed in the bowels of the information technology approach, which considers digitalization as the dominant trend in modern social development.

The hypothesis put forward in the course of the reseach is confirmed that the traditional McKensey 7S model becomes more meaningful in the context of digitalization, and the structural analysis based on it helps to identify the determinants of system management of EC enterprises.

The scientific contribution of the reseach is the development of a theoretical approach to the analysis of system management of e-commerce enterprises, which is a qualitatively new understanding of the phenomenon of management based on perception, cognition, and transformation of business processes of an enterprise. The basis of this approach is strategic management and synergistic coordination of subsystems: digital strategy, e-business structure, systematic information and communication actions, virtual corporate culture, digital HR, digital skills and competencies, online communities with common corporate values. The practical value of the result lies in the possibility of implementing the theoretical approach in the management strategies of EC enterprises.

Thus, in order for the activities of EC enterprises in Ukraine to meet the requirements of the modern post-industrial economy and ensure the effective implementation of a new conceptual vision in management practice, their system management must undergo a scientific rethinking, which will require solving a number of problems: lack of a unified view of the essence and features of systemic organizational management, which would include the entire list of attributes of the established scientific discipline, namely: a clear definition of the systemic management of e-commerce enterprises, the object and subject of study of the science of it and the methodology of cognition; poor integration of the systematic approach to organizational management of e-commerce enterprises, lack of unified ideas about the relationship of system management, primarily with strategic management; lack of a unified approach to understanding what determinants determine, first of all, the features of system management of e-commerce enterprises; eclecticism in the work on the practical implementation of system management at e-commerce enterprises; difficulty in measuring the practical results of system management in e-commerce enterprises and its effecttiveness; a significant gap between the introduction of system management in management decision-making at e-commerce enterprises and the practice of its implementation.

Effective implementation of the new conceptual approach to system management of e-commerce enterprises should be aimed at improving the effectiveness of the internal and external determinants identified in the study. СПИСОК ВИКОРИСТАНИХ ДЖЕРЕЛ

Prospects for further research include determining a methodology for assessing the effectiveness of system management of an e-commerce enterprise, diagnosing the content and structure of its system management, and developing a model for improving its efficiency on this basis.

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