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SYSTEM MANAGEMENT OF E-COMMERCE ENTERPRISES

Modern system management has in its arsenal a number of tools for effective design of enterprise management based on digital technologies and artificial intelligence. The synergy of management subsystems of e-commerce enterprises is able to ensure the formation of the effect of growth of business flexibility to changes in the external environment, optimize business processes and positively influence the behavior of online buyers. The aim of the article is to determine the role of synergistic effects of the management system of e-commerce enterprises in the context of a circular business model. It is hypothesized that the synergistic effects of e-commerce enterprise management should be considered through its analysis as a circular internal system consisting of internal and external subsystems. The circular business model essence of the e-commerce enterprise is substantiated. Conceptual approaches to the content of synergistic management are defined. It is proposed to consider the system management as a circular self-reproducing system that has internal (technological core) and external (organizational superstructure) subsystems. The content of synergistic effects according to the signs of their formation is disclosed. On the basis of a cross-approach to the core and superstructure subsystems, the products of their organic interaction were identified. Through the introduction of technologies based on artificial intelligence (AI) and through a combination with effective management technologies, such

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СИСТЕМНИЙ МЕНЕДЖМЕНТ ПІДПРИЄМСТВ ЕЛЕКТРОННОЇ КОМЕРЦІЇ

Сучасний системний менеджмент має у своєму арсеналі низку інструментів для ефективного проектування управління підприємствами на основі цифрових технологій і штучного інтелекту. Синергія підсистем управління підприємств електронної комерції (ПЕК) спроможна забезпечити формування ефекту росту гнучкості бізнесу до зміни умов зовнішнього середовища, оптимізувати бізнес-процеси та позитивно впливати на поведінку онлайн-покупців. Метою статті є визначення ролі синергетичних впливів системи менеджменту підприємств електронної комерції в контексті циркулярної бізнес-моделі. Висунуто гіпотезу, що синергетичні впливи управління ПЕК доцільно розглядати через його аналіз як циркулярної інтернальної системи, яка складається з внутрішніх і зовнішніх підсистем. Обґрунтовано сутність циркулярної бізнес-моделі ПЕК. Визначено концептуальні підходи до змісту синергетичного менеджменту. Запропоновано розглядати системний менеджмент ПЕК як циркулярну самовідтворювану систему, що має внутрішню (технологічне ядро) і зовнішню (організаційна надбудова) підсистеми. Розкрито зміст синергетичних ефектів за ознаками їх формування. На основі перехресного підходу до підсистем ядра й надбудови виявлено продукти їх органічної взаємодії. Шляхом впровадження технологій на основі штучного інтелекту (ШІ) та через поєднання з дієвими управлінськими технологіями такі продукти спроможні формувати



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products are able to form synergistic effects that will lead to an improvement in the quality of value propositions, an increase in customer trust, and an increase in turnover and profits. It has been proven that the systematic approach to the e-commerce enterprise management is based on the synergistic interaction of external elements (management of human resources, knowledge, information technologies, financial and monetary relations) and internal elements (management of technical protection systems, data protection of customers, personnel, contractors, website, and databases) subsystems. Deepening the scientific analysis of electronic commerce tools is of practical importance for the development of strategically correct management decisions in view of diversification of risks of loss of market position, reduction of sales volumes and weakening of competitive advantages. Conceptualization of the synergistic effects of the system management will improve the processes of analyzing the field of e-commerce at the macro- and mega-economic levels and forecasting the economic growth of the industry.

Keywords: synergistic effects, synergistic management, circular business model, technological core, organizational superstructure, organic interaction.

JEL Classification: L 29, L 81, D 21, O 32.

Introduction

The transition from the traditional form of business activity in the era of globalization to the electronic one has become a natural technological consequence. This progress has also ushered in a new era of globalization known as "Globalization 4.0" (Motoryn et al., 2021).

In the conditions of globalization and increased competition, the task of permanent improvement and optimization of business models is becoming more urgent for e-commerce enterprises. E-commerce enterprises are involved in the processes of production, distribution, marketing and delivery of goods and services through electronic means, and are developing rapidly thanks to information and technological progress, which provides consumers with direct access to the online market (World Trade Report, 2018). Business processes in e-commerce are based on the processing and transmission of digital information, including texts, sounds and visual data, and system management should contribute to the creation and maintenance of a dynamic and inclusive ecosystem to achieve the goals of sustainable development (E-commerce Strategies, 2018).

E-commerce (EC) is a "subset of e-business" that has a broader definition that, in addition to direct commercial activities, includes business partners, customer support, and job management (Dragomirov, 2020).

синергетичні ефекти, що приведуть до покращення якості ціннісних пропозицій, зростання клієнтської довіри, збільшення товарообороту і прибутків. Доведено, що системний підхід до менеджменту ПЕК ґрунтується на синергетичній взаємодії елементів зовнішньої (управління людськими ресурсами, знаннями, інформаційними технологіями, фінансово-грошовими відносинами) та внутрішньої (управління системами технічного захисту, захисту даних клієнтів, персоналу, контрагентів, вебсайтом, базами даних) підсистем. Поглиблення наукового аналізу інструментарію електронної комерції має практичне значення для розробки стратегічно вірних управлінських рішень з огляду на диверсифікацію ризиків втрати ринкової позиції, скорочення обсягів продажу та послаблення конкурентних переваг. Концептуалізація синергетичних ефектів системного менеджменту ПЕК удосконалиє процеси аналізу сфери електронної комерції на макро- та мегаекономічному рівнях і прогнозування економічного зростання галузі.

Ключові слова: синергетичні впливи, синергетичний менеджмент, циркулярна бізнес-модель, технологічне ядро, організаційна надбудова, органічна взаємодія.

Databases, e-mail, non-computer technology in the form of various delivery systems, payment method are additional requirements for EC besides network technologies (Kedah, 2023). Compared with the management of traditional trade enterprises, the goal of e-commerce enterprise management is to reduce the length of the trade cycle, the cost of projects, the equal distribution of information, the reduction of the use of material resources, and the expansion of market niche coverage (Li & Zhang, 2021).

The positive impact of the organization on customer trust and loyalty through the organic combination of subsystems with capital management, personnel, website and technical level of trading platforms in a highly dynamic market environment is able to produce synergistic effects that increase the efficiency of the business model in general (Xue et al., 2022).

Determining the target audience in EC activities is a primary task in developing a successful enterprise strategy, which will make it possible to increase profits and increase the number of potential customers (Freyuk & Fedotov, 2021).

The e-commerce enterprise management system is a complex entity that develops under the influence of internal (forming the internal environment) and external (forming the external environment) factors of the micro and macroeconomic environment. In modern works, management systems are also considered from the standpoint of the influence of internal factors (in particular, training of employees, their creative potential) and external factors: partners, state subsidies, state contracts (Ozen & Ozturk-Kose, 2023).

To move to a self-replicating circular business model, companies must not only be aware of, but also engage in more sustainable practices, rethink and innovate their business processes and the ways in which they deliver value to their customers (Suchek et al., 2021).

In this context, e-commerce enterprise is the best alternative to traditional enterprises and has wider prospects for the introduction of circular models compared to them. Blockchain and IoT technologies have accelerated the growth of e-commerce and the ability to create value through virtual closed supply chains (Prajapati et al., 2022). New information technologies exert a powerful influence on the action of synergistic effects, enhancing the effects of blockchain technology and business process management (Taherdoost & Madanchian, 2023), as well as the synergistic impact of algorithms of intellectual analysis of association rules on EC and the digital economy (Jiang, 2023).

By implementing technological innovations in the management of business processes – processes related to HR, financial operations, information resources, IT support, etc. – e-commerce enterprises form a new ecosystem of financial business, based on the effective management of human resources, increasing the trust of counterparties, improving the quality of financial services and value propositions. As a result, customer loyalty and sales volumes increase. Such a new ecosystem objectively requires a

rethinking of system management, a clear understanding of its structure, which consists of an internal system (technological core, organizational superstructure) and an external environment (*Figure 1*).

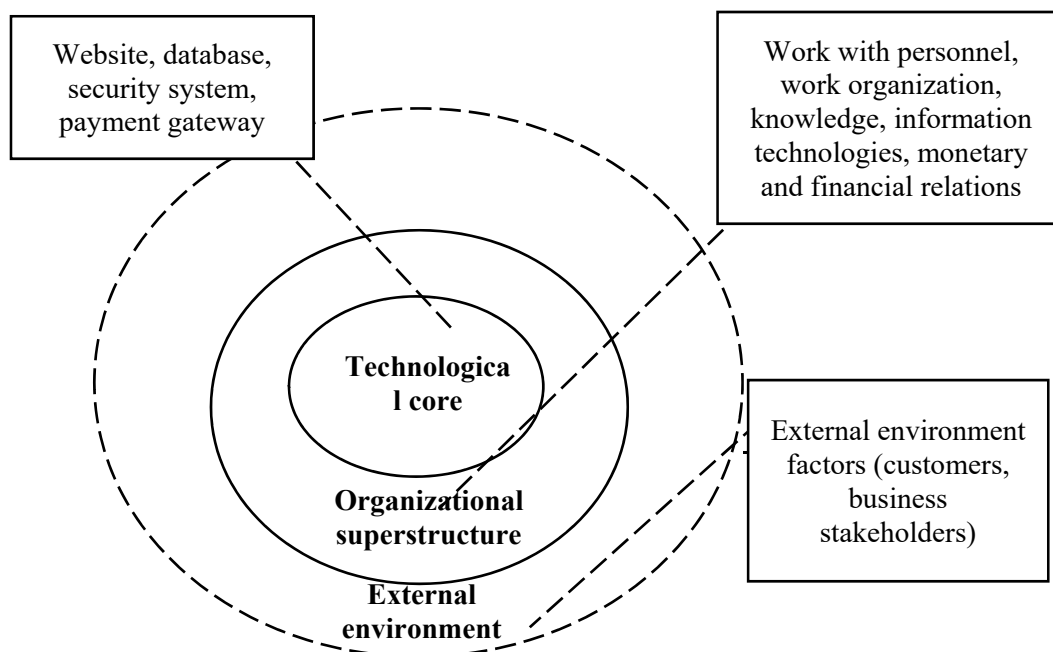


Figure 1. The management ecosystem structure of e-commerce enterprises

Source: compiled by the author.

Synergy is the "holy grail" of any agreement, a separate independent factor of production (Feix, 2020) and coordinated functioning of subsystems, which gives such effects that would be unattainable if they worked independently (Vodyanka & Yaskad, 2012).

In essence, synergy is a redundant concept (Feix, 2020). Synergistic relationships between management subsystems can create difficulties in project profitability management, which requires an analysis of the synergistic impact on the management system of the talent of project managers, consumer behavior, development potential, and material resources (Bai et al., 2023).

With the increasing availability of digital devices and increased access to the Internet, the behavior of online shoppers is changing, they are starting to use multiple devices, so retailers must operate and manage a variety of online channel formats. Along with the individual capabilities of a single online channel, interaction through electronic commerce channels (e-channels) is important in creating a holistic online shopping experience due to the synergy and complementarity effects between electronic channels and their impact on online shopper behavior (Wagner et al., 2013). Therefore, to increase their competitiveness, many dual-channel retailers have begun to apply certain channel synergy strategies (Zhang et al., 2021). According

to Western scholars, managing online stores with more than one electronic channel requires coordinating management subsystems, online distribution (website, mobile applications) and managing channel synergy and complementarity (Wagner et al., 2016).

In some works, the optimization of enterprise business models and productivity in a dynamic business environment is impossible without the synergy of education, science and knowledge management (Sudi et al., 2023). In particular, an integration concept was developed based on the project approach of integrated management systems and the realization of a synergistic effect through a scientific approach to management and the approval of a social model of management.

Depending on the sign (conditions for the emergence of synergistic effects, management strategy), the research on synergistic management can be characterized as multidimensional in approaches to its content. Conceptual analysis revealed among them organizational, digital, market, discount, structural, marketing, scientific and educational (*Table 1*).

Table 1

Conceptual approaches classification of synergistic e-commerce enterprise management essence

Sign	Conceptual approach	The essence of synergistic management
Dynamic connections	Organizational (Hrybyk, 2008; Shevtsova, 2012)	Management of synergistic effects due to the change in the behavior of the management system and the mechanism of self-organization through nonlinear dynamic relationships
The influence of digital technologies	Digital (Blake et al., 2004)	The natural result of the digital transformation of the business model and the increase in the efficiency of business relations
Market share	Market (Garzella & Fiorentino, 2017)	Managing synergies to capture market niches and target mergers and acquisitions.
Discounting of financial flows	Discount (Feix, 2020; Bai et al., 2023)	Determination of the present value of excess financial flows
New structural elements	Structural (Voronkova, 2009; Zeng et al., 2007)	The result of the appearance of new structural elements of the management system
Sales channels	Marketing (Wagner, 2013, 2016; Zeng et al., 2007; Brown & Dant, 2014; Zhang et al., 2021)	Ensuring multi-channel marketing, implementation of sales channel synergy strategies
Exchange of knowledge, scientific theories of management	Scientific and educational (Bashir & Farooq, 2019; Lestari et al., 2020)	Management based on synergy from the exchange of knowledge and scientific methods, which generates management innovations and strengthens the competitive advantages of e-commerce enterprises

Source: compiled and supplemented by the author.

Despite the existence of thorough research within the framework of the mentioned approaches, the analysis of e-commerce enterprise business models in the context of the circular economy needs to be deepened. The aim of the article is to determine the role of synergistic effects of the management system of e-commerce enterprises in the context of a circular business model. The tasks of the research are conceptualization of synergistic management, study of the content of synergistic effects of system management, analysis of synergistic effects of internal and external subsystems of e-commerce enterprise management.

The information base consists of analytical materials of the World Trade Organization, UNCTAD on e-commerce strategies, modern scientific publications, and business analytics materials.

It is hypothesized that the synergistic effects of e-commerce enterprise management should be considered through its analysis as a circular internal system consisting of internal and external subsystems.

The methodology for testing the hypothesis and its algorithm includes the method of structural analysis in the study of synergistic effects of external and internal subsystems of e-commerce enterprise management. On the basis of a cross-approach to the core and superstructure subsystems, the products of their organic interaction were identified.

The content structure of the main part of the article consists of the following elements: a study of the content of synergistic effects of e-commerce enterprise system management in the context of a circular business model; analysis of the synergistic effects of the subsystems of the technological core of the e-commerce enterprise management; analysis of synergistic effects of subsystems of its organizational superstructure.

1. Research on the content of synergistic effects of e-commerce enterprise system management in the context of a circular business model

In the framework of the study, abstracting from the factors of the external environment, attention is focused on the analysis of the management system as an internal circular system consisting of internal subsystems, the basis (processes of optimization of the website, databases, protection system, payment gateway) and external subsystems according to the basis, related to processes in the sphere of monetary and financial, labor relations and the introduction of information technologies into them.

The EC circular business model as a conceptual construction of value creation is based on the self-reproduction of the business system and is aimed at increasing the competitiveness of the value proposition, improving public welfare through the use of fewer materials, energy resources, etc. (Sun et al., 2021).

The circular business model also provides new opportunities for employment, human resource management, fair economic distribution and a

global contribution to the general well-being of society. In such a model, resource use, waste generation, emissions, and energy leaks are minimized by slowing down, closing, and narrowing material and energy cycles (Trifonov et al., 2019).

Since EC differs from traditional commerce in the implementation of commodity and monetary exchange through information technologies and Internet networks, we examine its management system in the context of the crucial role of the information technology component, which allows avoiding direct communications with customers and counterparties in physical space, minimizing resource costs, in particular and time. The e-commerce enterprise management system is considered as a circular internal system consisting of a technological core and an organizational superstructure, the functioning of which is aimed at mutual ensuring of efficiency. The technological core is an internal subsystem of website optimization processes, an information protection system, and a database. The organizational superstructure is a subsystem external to the core and represents a set of processes that arise due to organizational and economic relations regarding the effective use of labor, information, and financial resources.

In order to analyze the synergistic effects of system management, a cross-sectional approach is used, according to which it is possible to reveal the effects of the organic interaction of the constituent subsystems of the core and the superstructure (*Figure 2*).

According to our approach, synergistic impact, in contrast to comparable economic, social, environmental effects, which are calculated as the ratio of benefits to costs, is not a quantitative indicator – it is only about the qualitative aggregated impact of synergy. As a result of the optimal combination of system elements, the laid down unique technology of resource use, managerial talent, a synergistic effect occurs that exceeds the simple sum of these elements¹.

Each shown in *Figure 2*, the result of interaction has qualitative indicators of measurement, which is expressed through the criteria of presence at the enterprise and work efficiency (with a maximum value of 100%). The results in the form of knowledge and digital competences can have both a qualitative (the deeper and better the knowledge, the more effective their implementation in business processes) and quantitative (for example, the share of employees with digital knowledge and competences in the total number) expression.

The study of the interaction products of the subsystems of the technological core and the organizational superstructure of management in EC is important for its analysis at the macro- and mega-economic levels and forecasting the economic growth of this industry. The system management

¹ For example, paints are separate elements and their mechanical mixing will not give a result in the form of a picture, notes are separate elements, melody is a musical work, employees in the staff are separate individuals with knowledge and competences, the final intellectual product created as a result of their teamwork and management talent is a manifestation of synergy

of e-commerce enterprises is much more complex compared to traditional enterprises, because its structure is changing due to the strengthening of the role of artificial intelligence and the technological core and the emergence of new effects in the subsystems of the organizational superstructure (see *Figure 2*).

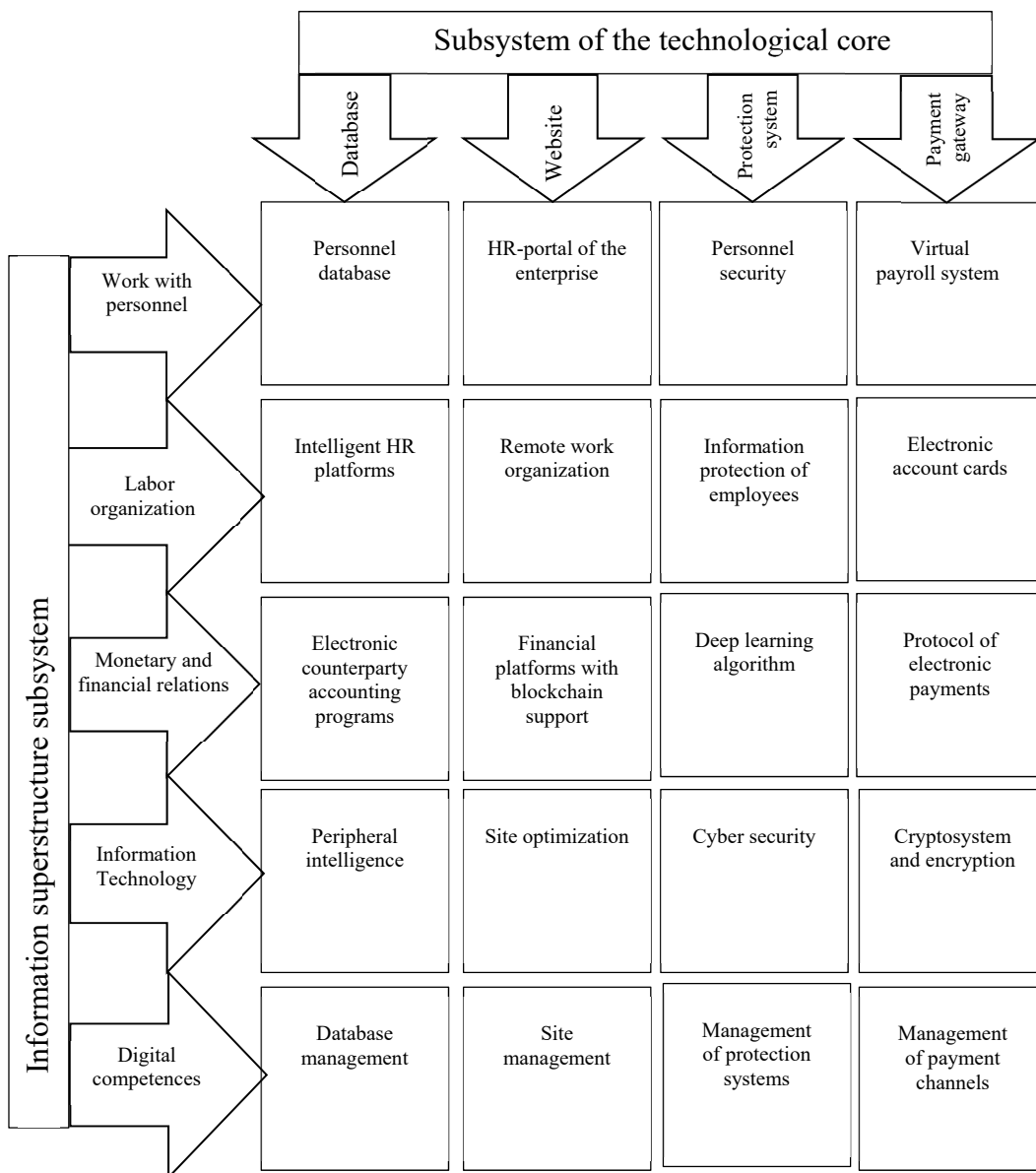


Figure 2. Interaction products of technological core subsystems and the organizational superstructure of the e-commerce enterprise management system

Source: compiled by the author.

The effectiveness of management in each subsystem affects the optimization of the entire e-commerce enterprise business model, therefore, synergistic effects should be taken into account in its management system and adjusted according to the specifics of its business processes and

strategic goals. This approach should minimize the risks of the uncertainty of the external environment and maximize the competitive advantages of the enterprise, create an impetus for the development of e-commerce enterprises thanks to the synergistic effects of system management, preserve and expand its market positions.

2. Synergistic effect analysis of the technological core subsystems of the e-commerce enterprise management

Integrated management solutions for optimization of business processes of e-commerce enterprises should also take into account their internal system elements, which are related to the technological core (see *Figure 2*). The synergy of the productive interaction of such internal subsystems is capable of producing many results. In *figure 3* shows the synergistic effects of the internal management subsystems of an e-commerce enterprise.

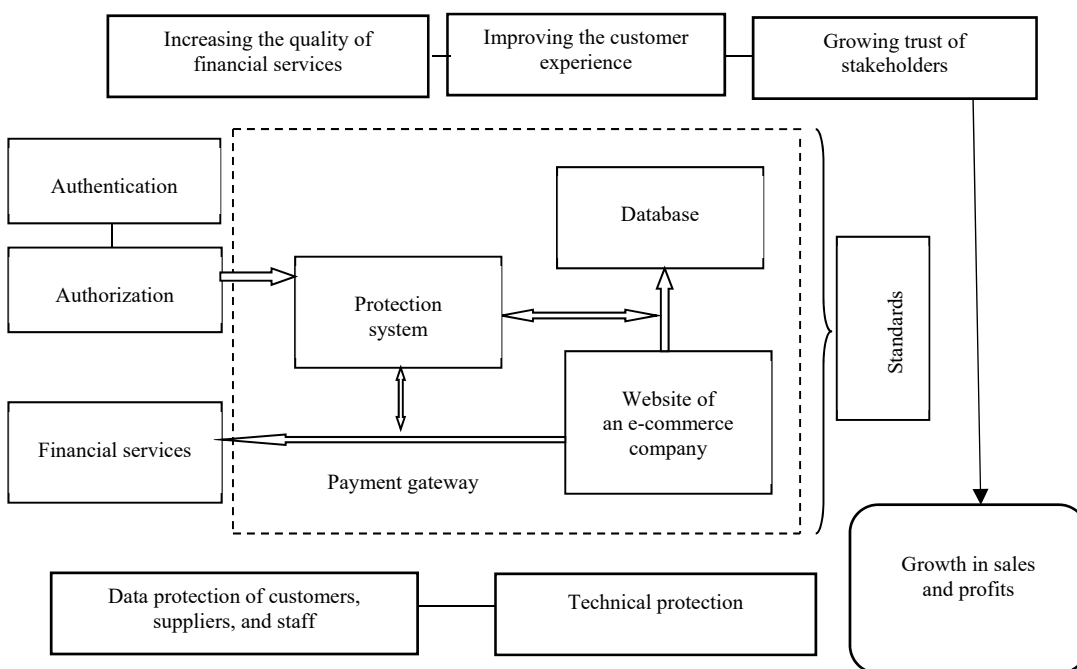


Figure 3. Synergistic effects of internal e-commerce enterprise management subsystems

Source: compiled by the author.

Mechanism of protection system in interaction with databases, website based on standardization through payment gateway tools improves the quality of financial products provided by financial services. The organic interaction of these elements provides simultaneous effects of client, personnel, partner and technical protection.

Protection of personal data, control of big data risks, comfort for customers, partners, contractors and other stakeholders of the EC business model are ensured.

Websites transform electronic catalogs of goods and services; expand customer choice, opportunities for instant purchases, increasing sales and profits. Authorization automates the process of determining the availability of the required amounts of money on client accounts at the prepayment stage. The authentication procedure allows you to verify the identity of the payer and the owner of the payment card. With the help of technical protection, the payment service is tied to the user's phone number and IP address, and encryption protocols minimize the risks of fraud. The complex effect of growth in the quality of financial services, better customer experience and the trust of stakeholders' results are increased in the sales volume and profits of e-commerce enterprises.

3. Synergistic effect analysis of the organizational superstructure subsystems of the e-commerce enterprise management

E-commerce enterprise system management should take advantage of the introduction of modern technologies, in particular based on AI, to organize an effective trade process, manage transactions, take into account the norms of legal regulation and promote the most effective interaction of all involved subjects. Cognitive, in particular, analytical abilities of managers lead to the emergence of a final management decision as a result of the interaction of the management subsystem with executive subsystems. Due to such interaction, the management subjects expect the solution of the current or strategic problem and the achievement of the expected results.

The ability of the e-commerce enterprise management system to produce balanced management decisions depends on the effects of synergy, that is, the aggregated quality products of the interaction of management subsystems, which is much greater than the effect of the action of each subsystem in the form of their simple sum. Awareness of this motivates managers to respond more precisely to any changes in the market space, productively and systematically monitoring the influence of external and internal factors on the management model.

It is worth emphasizing that EC system management involves the implementation of AI-based technologies to achieve a better customer experience, find new customers, effectively manage the supply chain, increase operational efficiency and reduce costs at the same time (Pallathadka et al., 2023).

The organizational structure of the e-commerce enterprise management system includes the following elements: HR management (work with

personnel, planning, organization, work motivation, control, and knowledge management); management of monetary and financial relations – which is implemented through information technologies.

In *Figure 4* shows the synergistic effects of the subsystems of the organizational superstructure of the e-commerce enterprise management.

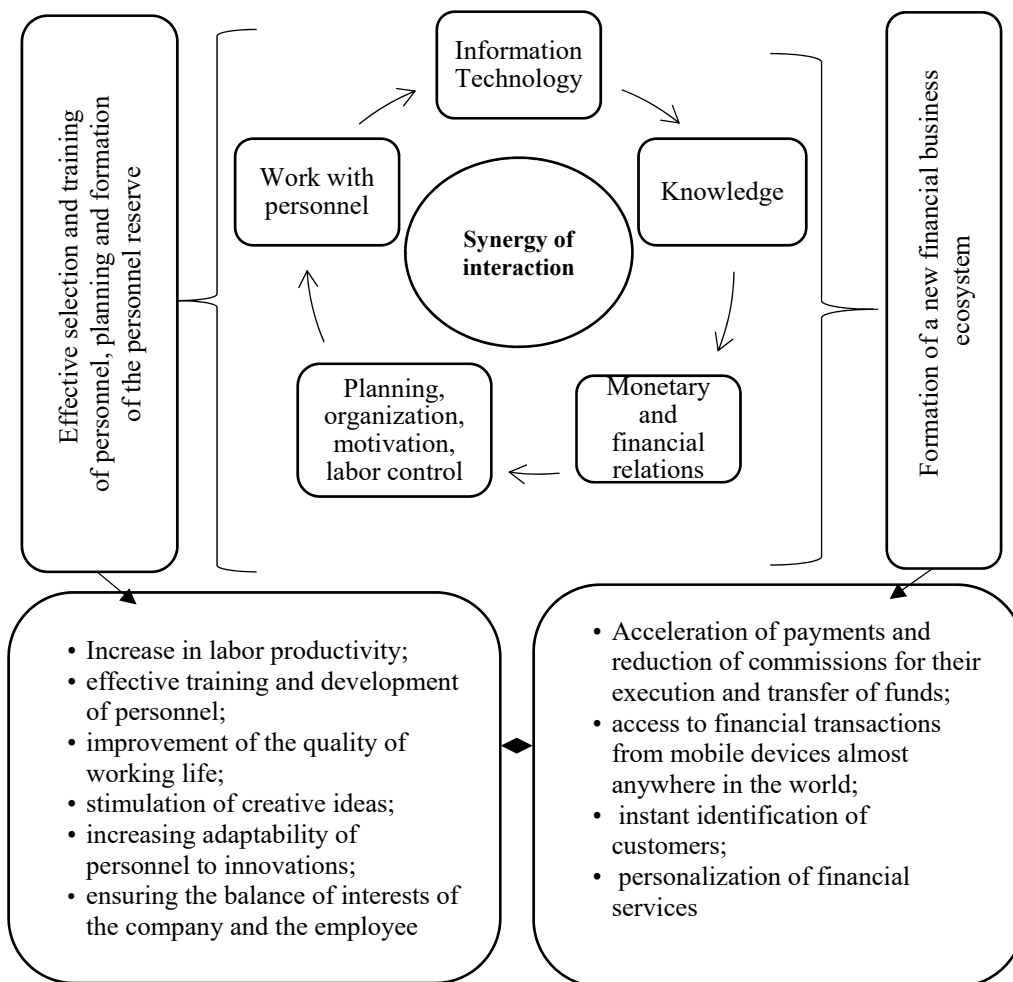


Figure 4. Synergistic effects of the organizational superstructure subsystems of the e-commerce enterprise management

Source: compiled by the author.

In combination with the effect of information technologies, personnel management in EC companies is being improved; new forms of recruitment, training, in particular outsourcing, outstaffing, and leasing, coaching, headhunting of personnel – reach a new and higher level of development. An automated personnel management information system, professionally oriented software and hardware complexes containing new technical tools of digitization and informational organizational forms of human resources management are being formed. In addition, the effectiveness of such

management should entirely depend on the employees' awareness of their own contribution to the overall result and the degree of compliance with the company's goals. Staff motivation should include not only monetary rewards, but also giving them the opportunity to express their own ideas and expectations regarding the implementation of the company's strategic goals.

At the same time, the effectiveness of monetary and financial relations increases through the formation of a new ecosystem of financial business: payments are accelerated, their commission costs are reduced, access to financial transactions from various digital devices is expanded, instant identification of clients and personalization of financial services occurs. AI improves the quality of financial accounting and resource integration of electronic trading platforms. Traditional financial products are rapidly migrating to the Internet, forming a new financial business model of capital movement, electronic payments, online investments and information services.

The synergy of the effects of such improved management of personnel and financial relations ensures greater flexibility of business processes, growth of turnover and, accordingly, profits.

Conclusions

EC's circular business model is based on the principle of self-reproduction and ensures the deepening of the qualitative properties of the value proposition, the achievement of social and environmental effects thanks to the virtualization of business processes and the optimization of the use of resources and technologies.

The hypothesis put forward in the course of the research is confirmed: the approach to the system management of e-commerce enterprises as a circular internal system (technological core and organizational superstructure) contributes to an in-depth analysis of its synergistic effects. The analysis of the source base made it possible to identify seven basic approaches to the synergistic management of EC enterprises: organizational, digital, market, discount, structural, marketing, scientific and educational. Through the cross-method, the products of organic interaction of subsystems of the technological core and the organizational superstructure of the management system were identified: personnel database, HR portal, personnel security, virtual payroll system, intelligent HR platforms, remote work organization, information protection of employees, electronic registration cards, electronic counterparty accounting programs, financial platforms with blockchain support, deep learning algorithms, e-payment protocols, peripheral intelligence, site optimization, cyber security, cryptosystem and encryption, special knowledge and digital competencies in database management, site, security systems, payment channels.

The synergistic effects of the e-commerce enterprises management system are qualitative products of the organic interaction of internal and external management subsystems, which give a much more significant result

than the sum of the effects of the subsystems as such. This is explained by the introduction into management of special management technologies based on managerial talent, information technologies and artificial intelligence.

AI technologies and digital automation of e-commerce enterprise business processes significantly improve the results of managing its labor resources and financial and monetary relations with all stakeholders of the business environment in which the enterprise operates. The synergistic effects produced in the organizational superstructure as a result of the automated management of personnel and finances increase the maneuverability of the management system and its resistance to fluctuations in the external environment, provide better labor productivity and a new, more efficient ecosystem of financial relations. Ultimately, this will contribute to the growth of sales volumes and profits. Synergistic effects in the technological core of the management system – the subsystem of the interaction of databases, the website, protection systems – increase the transparency, speed and quality of financial services, the level of client, personnel, partner and technical protection, improve the client experience, the trust of clients and partners, and also contribute to growth profits in the long term.

The scientific contribution consists in the development of a new conceptual approach to the analysis of synergistic effects in the management of e-commerce enterprises in the context of a circular business model; the practical value of the research results is in the possibility of implementing this approach for the development of management strategies and increasing the efficiency of business process management of e-commerce enterprises.

Prospects for further research are deepening the analysis of the assessment of synergistic effects of the management system of e-commerce enterprises and the development of a criterion approach to their assessment.

REFERENCE	СПИСОК ВИКОРИСТАНИХ ДЖЕРЕЛ
Bai, L., Qu, X., Liu, J., & Han, X. (2023). Analysis of factors influencing project portfolio benefits with synergy considerations. <i>Engineering, Construction and Architectural Management</i> , 30(7), 2691–2715.	Bai, L., Qu, X., Liu, J., & Han, X. (2023). Analysis of factors influencing project portfolio benefits with synergy considerations. <i>Engineering, Construction and Architectural Management</i> , 30(7), 2691–2715.
Bashir, Makhmoor, & Farooq, Rayees. (2019). The synergetic effect of knowledge management and business model innovation on firm competence: A systematic review. <i>International Journal of Innovation Science</i> , 11(3), 362–387.	Bashir, Makhmoor, & Farooq, Rayees. (2019). The synergetic effect of knowledge management and business model innovation on firm competence: A systematic review. <i>International Journal of Innovation Science</i> , 11(3), 362–387.
Blake, M. Brian, Parsons, Simon, & Payne, Terry R. (2004). The synergy of electronic commerce, agents, and semantic Web services. <i>The Knowledge Engineering Review</i> , 19(2), 175–180.	Blake, M. Brian, Parsons, Simon, & Payne, Terry R. (2004). The synergy of electronic commerce, agents, and semantic Web services. <i>The Knowledge Engineering Review</i> , 19(2), 175–180.
Brown, James R., & Dant, Rajiv P. (2014). The role of e-commerce in multi-channel marketing strategy. <i>Handbook of strategic e-business management</i> , 467–487.	Brown, James R., & Dant, Rajiv P. (2014). The role of e-commerce in multi-channel marketing strategy. <i>Handbook of strategic e-business management</i> , 467–487.

Dragomirov, N. (2020). E-Commerce Platforms and Supply Chain Management–Functionalities Study. <i>Economic Alternatives</i> , (2), 250–261.	Dragomirov, N. (2020). E-Commerce Platforms and Supply Chain Management–Functionalities Study. <i>Economic Alternatives</i> , (2), 250–261.
E-commerce Strategies. (2018). Retrieved on December 30, 2023, from https://unctad.org/topic/e-commerce-and-digital-economy/e-commerce-strategies	E-commerce Strategies. (2018). Взято 30 грудня 2023 р. з https://unctad.org/topic/e-commerce-and-digital-economy/e-commerce-strategies
Feix, Thorsten. (2020). Synergy Management. <i>End-to-End M&A Process Design: Resilient Business Model Innovation</i> , 245–281.	Feix, Thorsten. (2020). Synergy Management. <i>End-to-End M&A Process Design: Resilient Business Model Innovation</i> , 245–281.
Freyuk, O. V., & Fedotov, A. S. (2021). Guide: target audience in E-commerce. In V. O. Bogomolov (Ed.), <i>Problems and prospects of entrepreneurship development</i> (pp. 310–311). Kharkiv National Automobile and Road University.	Фреюк, О. В., & Федотов, А. С. (2021). Гайд: цільова аудиторія в E-commerce. У В. О. Богомолов (Ред.), <i>Проблеми та перспективи розвитку підприємства</i> (с. 310–311). Харківський національний автомобільно-дорожній університет.
Garzella, S., & Fiorentino, R. (2017). Synergy Management: From Pitfalls to Value. <i>Synergy Value and Strategic Management: Inside the Black Box of Mergers and Acquisitions</i> , 53–81.	Garzella, S., & Fiorentino, R. (2017). Synergy Management: From Pitfalls to Value. <i>Synergy Value and Strategic Management: Inside the Black Box of Mergers and Acquisitions</i> , 53–81.
Gribik, I. I., Smolinskaya, N. V., & Girilo, A. M. (2008). Features of corporate culture development on the basis of self-organization and synergy. <i>Problems of Economics and Management</i> , Lviv. Polytechnic, (611), 142–147.	Грибик, І. І., Смолінська, Н. В., & Гирило, А. М. (2008). Особливості розвитку корпоративної культури на засадах самоорганізації та синергії. <i>Проблеми економіки та управління</i> , Львів. політехніка, (611), 142–147.
Jiang, Y. (2023). The Synergetic Effect of Association Rule Mining Algorithm between E-Commerce and Digital Economy. In <i>2023 International Conference on Distributed Computing and Electrical Circuits and Electronics (ICDCECE)</i> , 1–6.	Jiang, Y. (2023). The Synergetic Effect of Association Rule Mining Algorithm between E-Commerce and Digital Economy. In <i>2023 International Conference on Distributed Computing and Electrical Circuits and Electronics (ICDCECE)</i> , 1–6.
Kedah, Z. (2023). Use of e-commerce in the world of business. <i>Startuppreneur Business Digital (SABDA Journal)</i> , 2(1), 51–60.	Kedah, Z. (2023). Use of e-commerce in the world of business. <i>Startuppreneur Business Digital (SABDA Journal)</i> , 2(1), 51–60.
Lestari, S. D., Muhdalih, A. E., & Putra, A. H. P. K. (2020). E-commerce performance based on knowledge management and organizational innovativeness. <i>Journal of Distribution Science</i> , 18(2), 49–58.	Lestari, S. D., Muhdalih, A. E., & Putra, A. H. P. K. (2020). E-commerce performance based on knowledge management and organizational innovativeness. <i>Journal of Distribution Science</i> , 18(2), 49–58.
Li, L., & Zhang, J. (2021). Research and analysis of an enterprise E-commerce marketing system under the big data environment. <i>Journal of Organizational and End User Computing (JOEUC)</i> , 33(6), 1–19.	Li, L., & Zhang, J. (2021). Research and analysis of an enterprise E-commerce marketing system under the big data environment. <i>Journal of Organizational and End User Computing (JOEUC)</i> , 33(6), 1–19.
Motoryn, R., Shlyusarchyk, B., & Zheglen, P. (2021). E-commerce in the era of globalization. <i>Scientia fructuosa</i> , 136(2), 67–78.	Моторин, Р., Шлюсарчик, Б., & Жеглен, П. (2021). E-commerce in the era of globalization. <i>Scientia fructuosa</i> , 136(2), 67–78.
Ozen, Ozlem, & Ozturk-Kose, Ebru. (2023). Management innovation: The role of internal, external factors, and business group affiliation. <i>Journal of Business Research</i> , 164: 113964.	Ozen, Ozlem, & Ozturk-Kose, Ebru. (2023). Management innovation: The role of internal, external factors, and business group affiliation. <i>Journal of Business Research</i> , 164: 113964.
Pallathadka, H., Ramirez-Asis, E. H., Loli-Poma, T. P., Kaliyaperumal, K., Ventayen, R. J. M., & Naved, M. (2023). Applications of artificial intelligence in business management, e-commerce and finance. <i>Materials Today: Proceedings</i> , (80), 2610–2613.	Pallathadka, H., Ramirez-Asis, E. H., Loli-Poma, T. P., Kaliyaperumal, K., Ventayen, R. J. M., & Naved, M. (2023). Applications of artificial intelligence in business management, e-commerce and finance. <i>Materials Today: Proceedings</i> , (80), 2610–2613.

<p>Prajapati, D., Jauhar, S. K., Gunasekaran, A., Kamble, S. S., & Pratap, S. (2022). Blockchain and IoT embedded sustainable virtual closed-loop supply chain in E-commerce towards the circular economy. <i>Computers & Industrial Engineering</i>, (172), 108530.</p>	<p>Prajapati, D., Jauhar, S. K., Gunasekaran, A., Kamble, S. S., & Pratap, S. (2022). Blockchain and IoT embedded sustainable virtual closed-loop supply chain in E-commerce towards the circular economy. <i>Computers & Industrial Engineering</i>, (172), 108530.</p>
<p>Shevtsova, G. Z. (2012). Synergistic management as a concept of organized synergy in enterprise management <i>Economics of industry</i>, (1–2), 202–214.</p>	<p>Шевцова, Г. З. (2012). Синергетичний менеджмент як концепція організованої синергії в управлінні підприємствами. <i>Економіка промисловості</i>, (1–2), 202–214.</p>
<p>Suchek, N., Fernandes, C. I., Kraus, S., Filser, M., & Sjögrén, H. (2021). Innovation and the circular economy: A systematic literature review. <i>Business Strategy and the Environment</i>, 30(8), 3686–3702.</p>	<p>Suchek, N., Fernandes, C. I., Kraus, S., Filser, M., & Sjögrén, H. (2021). Innovation and the circular economy: A systematic literature review. <i>Business Strategy and the Environment</i>, 30(8), 3686–3702.</p>
<p>Sudi, D. M., & Jusman, I. A. (2023). Performance Optimisation through Education and Knowledge Management Synergy: An Innovative Business Organisation Strategy. <i>Journal of Contemporary Administration and Management (ADMAN)</i>, 1(3), 215–221.</p>	<p>Sudi, D. M., & Jusman, I. A. (2023). Performance Optimisation through Education and Knowledge Management Synergy: An Innovative Business Organisation Strategy. <i>Journal of Contemporary Administration and Management (ADMAN)</i>, 1(3), 215–221.</p>
<p>Sun, M., Grondys, K., Hajiyev, N., & Zhukov, P. (2021). Improving the E-Commerce Business Model in a Sustainable Environment. <i>Sustainability</i>, (13), 12667.</p>	<p>Sun, M., Grondys, K., Hajiyev, N., & Zhukov, P. (2021). Improving the E-Commerce Business Model in a Sustainable Environment. <i>Sustainability</i>, (13), 12667.</p>
<p>Taherdoost, H., & Madanchian, M. (2023). Blockchain and Business Process Management (BPM) Synergy: A Comparative Analysis of Modeling Approaches. <i>Information</i>, 15(1), 9.</p>	<p>Taherdoost, H., & Madanchian, M. (2023). Blockchain and Business Process Management (BPM) Synergy: A Comparative Analysis of Modeling Approaches. <i>Information</i>, 15(1), 9.</p>
<p>Trifonov, P. V., Kirpicheva, M. A., & Khachatryan, A. A. (2019). Analysis of the Factors and Scenarios of Forming a New Direction in the 21st Century Energy-Intelligent Energy Networks (Smart Grid). In <i>Institute of Scientific Communications Conference</i> (pp. 257–264). Springer: Cham, Switzerland.</p>	<p>Trifonov, P. V., Kirpicheva, M. A., & Khachatryan, A. A. (2019). Analysis of the Factors and Scenarios of Forming a New Direction in the 21st Century Energy-Intelligent Energy Networks (Smart Grid). In <i>Institute of Scientific Communications Conference</i> (pp. 257–264). Springer: Cham, Switzerland.</p>
<p>Vodianka, L. D., & Yaskad, I. V. (2012). Synergistic effect in the activities of enterprises: classification and approaches to evaluation. <i>Bulletin of Khmelnytsky national university</i>, 1(3), 7–12.</p>	<p>Водянка, Л. Д., & Яскад, І. В. (2012). Синергетичний ефект у діяльності підприємств: класифікація та підходи до оцінювання. <i>Вісник Хмельницького національного університету</i>, 1(3), 7–12.</p>
<p>Voronkova, V. G. (2009). <i>Synergistic methodology for analyzing social management</i>. Retrieved on January 5, 2024 from http://zgia.zp.ua/gazeta/VISNIK_36_3.pdf</p>	<p>Воронкова, В. Г. (2009). <i>Синергетична методологія аналізу соціального управління</i>. Взято 5 січня 2024 р. з http://zgia.zp.ua/gazeta/VISNIK_36_3.pdf</p>
<p>Wagner, Gerhard, Schramm-Klein, Hanna, & Steinmann, Sascha. (2013). Effects of cross-channel synergies and complementarity in a multichannel e-commerce system – an investigation of the interrelation of e-commerce, m-commerce and IETV-commerce. <i>The international review of retail, distribution and consumer research</i>, 23(5), 571–581.</p>	<p>Wagner, Gerhard, Schramm-Klein, Hanna, & Steinmann, Sascha. (2013). Effects of cross-channel synergies and complementarity in a multichannel e-commerce system – an investigation of the interrelation of e-commerce, m-commerce and IETV-commerce. <i>The international review of retail, distribution and consumer research</i>, 23(5), 571–581.</p>
<p>Wagner, Gerhard, Schramm-Klein, Hanna, & Steinmann, Sascha. (2016). The Role of Synergy and Complementarity in a Multichannel E-Commerce System. In <i>Looking Forward, Looking Back: Drawing on the Past to Shape the Future of Marketing</i>, 661–661. Springer International Publishing.</p>	<p>Wagner, Gerhard, Schramm-Klein, Hanna, & Steinmann, Sascha. (2016). The Role of Synergy and Complementarity in a Multichannel E-Commerce System. In <i>Looking Forward, Looking Back: Drawing on the Past to Shape the Future of Marketing</i>, 661–661. Springer International Publishing.</p>

World Trade Report. (2018). <i>The future of world trade: How digital technologies are transforming global commerce</i> . Retrieved on December 29, 2023, from https://www.wto.org/english/res_e/publications_e/world_trade_report18_e.pdf	World Trade Report. (2018). <i>The future of world trade: How digital technologies are transforming global commerce</i> . Взято 29 грудня 2023 р. з https://www.wto.org/english/res_e/publications_e/world_trade_report18_e.pdf
Xue, C., Wen, W., & Li, S. (2022). Enterprise strategy analysis of synergy between cross-border e-commerce and logistics in a dynamic environment. <i>Systems Science & Control Engineering</i> , 10(1), 459–467.	Xue, C., Wen, W., & Li, S. (2022). Enterprise strategy analysis of synergy between cross-border e-commerce and logistics in a dynamic environment. <i>Systems Science & Control Engineering</i> , 10(1), 459–467.
Zeng, Sai X., Shi, Jonathan J. & Lou, G. X. (2007). A synergetic model for implementing an integrated management system: an empirical study in China. <i>Journal of cleaner production</i> , 15(18), 1760–1767.	Zeng, Sai X., Shi, Jonathan J., & Lou, G. X. (2007). A synergetic model for implementing an integrated management system: an empirical study in China. <i>Journal of cleaner production</i> , 15(18), 1760–1767.
Zhang, Peng, Xia, Bei & Shi, Victor. (2021). The dual-channel retailer’s channel synergy strategy decision. <i>Journal of Theoretical and Applied Electronic Commerce Research</i> , 16(7), 3184–3201.	Zhang, Peng, Xia, Bei, & Shi, Victor. (2021). The dual-channel retailer’s channel synergy strategy decision. <i>Journal of Theoretical and Applied Electronic Commerce Research</i> , 16(7), 3184–3201.

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