



**AKADEMIA
NAUK
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WYŻSZA SZKOŁA ZARZĄDZANIA
I ADMINISTRACJI W OPOLU

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**SYNERGIA ROZWOJU
SPOŁECZNO-
GOSPODARCZEGO**

**SYNERGY OF SOCIO-
ECONOMIC DEVELOPMENT**

**СИНЕРГІЯ СОЦІАЛЬНО-
ЕКОНОМІЧНОГО РОЗВИТКУ**

**Akademia Nauk Stosowanych
Wyższa Szkoła Zarządzania i Administracji w Opolu**

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TABLE OF CONTENTS

INTRODUCTION	7
PART 1	
MODERN PROBLEMS OF PHYSICAL CULTURE AND SPORTS СУЧАСНІ ПРОБЛЕМИ ФІЗИЧНОЇ КУЛЬТУРИ ТА СПОРТУ	
1.1. Development of speed qualities of football players at the stage of preliminary basic training Розвиток швидкісних якостей футболістів на етапі попередньої базової підготовки (<i>Oksana Adamenko</i>).....	9
1.2. Assessment of the effectiveness of using complexes of special preparatory exercises for the development of speed and speed-power qualities of sprinters in specialized training groups Оцінка ефективності використання комплексів спеціально-підготовчих вправ для розвитку швидкісних та швидкісно-силових якостей спринтерів в групах спеціалізованої підготовки (<i>Viktor Derkach, Filip Pokusa</i>).....	16
1.3. Experience of teaching medical and biological disciplines to bachelor students of the specialty "sports" in Ukraine during the ongoing russian-ukrainian war Досвід викладання медико-біологічних дисциплін студентам-бакалаврам спеціальності "спорт" в Україні за триваючої російсько-української війни (<i>Igor Martsinkovsky, Anastasiia Briatko</i>).....	25
1.4. The use of statodynamic exercises for the development of strength qualities of powerlifting athletes at the stage of specialized basic training Використання статодинамічних вправ для розвитку силових якостей спортсменів з пауерліфтингу на етапі спеціалізованої базової підготовки (<i>Iryna Veselova</i>).....	33

PART 2

CURRENT MANAGEMENT PROBLEMS: BY TYPE OF ACTIVITY
АКТУАЛЬНІ ПРОБЛЕМИ УПРАВЛІННЯ: ЗА ВИДАМИ ДІЯЛЬНОСТІ

2.1.	Principles of forming a risk management system in an enterprise (<i>Illia Bulanov</i>).....	42
2.2.	Foundations of enterprise management in crisis conditions (<i>Andrii Cheban, Daniel Palimąka</i>).....	58
2.3.	Principles of enterprise management in crisis conditions (<i>Roman Iakushko</i>).....	70
2.4.	Development of innovative it clusters in the context of turbulence (<i>Polina Puzyrova, Ievgen Sadovskyi</i>).....	83
2.5.	Principles of work motivation in agricultural enterprises (<i>Yurii Tyschenko, Iwona Mstowska</i>).....	92
2.6.	Organization of employee motivation at the enterprise in conditions of economic turbulence Organizacja motywacji pracowników w przedsiębiorstwie w warunkach zawirowań gospodarczych (<i>Mykola Subora, Andrii Skomorovskyi</i>).....	106
2.7.	Managing labor relations in remote work environments (<i>Maksym Riznychenko</i>).....	121
2.8.	The role of the customs service in ensuring the economic security of Ukraine in the conditions of globalization Роль митної служби в забезпеченні економічної безпеки України в умовах глобалізації (<i>Tetiana Vlasiuk, Yaroslav Naumenko</i>).....	132
2.9.	Methodological principles of strategic management of financial risks of the bank (<i>Kazimierz Łukawiecki, Denys Yakovunyk</i>).....	141

2.10. Theoretical aspects of managing the sustainable development of territorial communities in the conditions of a secure environment. <i>(Prohoniuk Liudmyla)</i>	151
2.11. The influence of management style and methods in ensuring the effective functioning of the enterprise <i>(Mariela Macola, Olena Yakovunyk)</i>	159
2.12. Theoretical aspects of designing the organizational structure of the enterprise <i>(Dmytro Palamarchuk)</i>	172
2.13. The impact of military risks on the staffing of the public sector in the region <i>(Nataliia Shyshpanova)</i>	184
2.14. Educational smart technologies as innovative methods of training and development of enterprise personnel Освітні smart-технології, як новітні методи навчання і розвитку персоналу підприємства <i>(Shatska Zorina, Biriukov Yevhen)</i>	192
2.15. Management of inclusive development of the national economy Управління інклюзивним розвитком національної економіки <i>(Anna Oleshko, Olena Budiakova)</i>	202

PART 3

HOSPITALITY AND TOURISM INDUSTRY: STATUS AND CHALLENGES ІНДУСТРІЯ ГОСТИННОСТІ ТА ТУРИЗМУ: СТАН ТА ВИКЛИКИ

3.1. Motivation and stimulation of staff work in restaurant service <i>(Oleksii Aleksandrov)</i>	213
3.2. Current state and features of further development of the hotel industry in Ukraine Сучасний стан та особливості подальшого розвитку готельного господарства України <i>(Kateryna Dodilova, Yuliia Zemlina, Viktoriya Poluda)</i>	222
3.3. Improving hotel management during martial law <i>(Mykhailo Sosnovskyh)</i>	230

PART 4

**TRANSPORT AND LOGISTICS SYSTEMS IN TODAY'S CONDITIONS
ТРАНСПОРТНО-ЛОГІСТИЧНІ СИСТЕМИ В УМОВАХ СЬОГОДЕННЯ**

4.1. Research on liberalization of the railway freight transportation market (<i>Vitalii Voronov</i>).....	247
4.2. Aspects of warehouse logistics management at enterprises of the agricultural sector of the economy (<i>Mykola Ohiienko</i>).....	256
4.3. Basics of organization of the logistics system for product distribution at enterprises (<i>Yurii Lysytsia</i>).....	268
4.4. Global supply chains management in the context of international business (<i>Alona Ohiienko, Todeusz Pokusa</i>)	281
4.5. Modern directions of optimization of transport logistics (<i>Andrii Ohienko, Ihor Honchak</i>).....	293
4.6. Innovative energy-saving technologies in irrigated agriculture systems in the conditions of post-war reconstruction (<i>Vasyl Hruban, Oleksiy Sadovuy</i>).....	306
ANNOTATION	312
ABOUT AUTHORS.....	321

INTRODUCTION

ВСТУП

Актуальність та важливість синергії соціально-економічного розвитку є не лише теоретичними проблемами, але й ключовими факторами практичної реалізації сталого прогресу сучасного суспільства. Метою цієї монографії є дослідження взаємодії та синергії різних складових соціально-економічного розвитку на прикладі таких важливих сфер, як фізична культура і спорт, управлінські процеси, індустрія гостинності та туризму, а також транспортно-логістичні системи. Кожна з цих сфер має значний вплив на економічний потенціал країни, рівень соціального добробуту населення та сприяє розвитку інших галузей. Водночас, сучасні глобальні та локальні виклики вимагають інноваційних підходів до управління і синергії цих сфер для досягнення стійкого розвитку. Монографія складається з чотирьох основних розділів, кожен з яких розглядає окремий аспект соціально-економічного розвитку в умовах сучасних трансформацій:

1. Сучасні проблеми фізичної культури та спорту. Цей розділ присвячено аналізу розвитку фізичної культури та спорту в контексті сучасних соціальних і економічних викликів. Особливу увагу приділено ролі спорту у формуванні здорового способу життя населення, а також його впливу на економіку через створення робочих місць, інфраструктуру та міжнародну співпрацю.

2. Актуальні проблеми управління: за видами діяльності. Розділ досліджує проблеми, пов'язані з управлінням у різних сферах економічної діяльності, акцентуючи увагу на оптимізації управлінських процесів, інтеграції інноваційних методів управління та розвитку людського капіталу як основи для сталого розвитку.

3. Індустрія гостинності та туризму: стан та виклики. У цьому розділі аналізується роль індустрії гостинності та туризму у формуванні соціально-економічного розвитку, зокрема, в умовах постійних змін попиту, розвитку технологій та зростаючих вимог до екологічної сталості і соціальної відповідальності підприємств цієї галузі.

4. Транспортно-логістичні системи в умовах сьогодення. Останній розділ присвячений транспорту та логістиці, їх впливу на економіку та інтеграцію різних регіонів у глобальні виробничі та торговельні мережі. Обговорюються проблеми ефективності, безпеки, екологічності та адаптації транспорту до змінюваних умов, включаючи цифровізацію та розвиток інфраструктури.

Загалом, монографія пропонує системний підхід до розгляду проблем соціально-економічного розвитку через призму взаємодії ключових секторів економіки та суспільства.

Part II

**CURRENT MANAGEMENT
PROBLEMS: BY TYPE OF ACTIVITY**

**АКТУАЛЬНІ ПРОБЛЕМИ
УПРАВЛІННЯ: ЗА ВИДАМИ
ДІЯЛЬНОСТІ**

2.4. Development of innovative it clusters in the context of turbulence

The development of IT innovation clusters in the face of turbulence is extremely important, as the current economic and social environment is characterized by high uncertainty, rapid technological change, geopolitical challenges, globalization and digitalization.

Turbulence creates both challenges and opportunities for innovation, especially in the IT sector, which plays a key role in the transformation of economies and societies. Turbulent conditions stimulate the development of new technologies and solutions. Innovation clusters in the IT sector allow for more efficient integration of the latest technologies (artificial intelligence, blockchain, big data) into global economic processes [1; 3; 6; 8].

Turbulence, pandemics, war, economic crises, or political instability require the creation of flexible structures that can quickly adapt to changes. Innovation clusters bring together companies, universities, startups, and other stakeholders to facilitate the rapid exchange of knowledge and resources.

In a world where competition for talent and investment is becoming increasingly fierce, the development of clusters allows individual regions or countries to create “magnets” for specialists, ensuring the growth of the local IT ecosystem even in difficult conditions. IT clusters contribute to economic diversification, which is important for regions with unstable traditional industries. Innovative cooperation reduces dependence on individual industries and increases resilience to external shocks [2; 4; 10; 13].

Turbulent conditions often stimulate the reorientation of capital to innovative areas. IT clusters act as a platform for interaction between investors and businesses, ensuring the inflow of financial resources. In the context of the digital transformation of the global economy, developed IT clusters help countries remain competitive in the international arena. Turbulence creates a need for new social solutions. IT clusters can initiate the development of innovations for healthcare, education, crisis management, and other important areas.

The development of innovative IT clusters in the context of turbulence is a relevant and necessary task that allows the economy to adapt to new challenges, creating conditions for sustainable development, attracting talent and capital, and increasing global competitiveness. Innovation clusters are geographically concentrated groups of interconnected companies, universities, research centers, startups, investors, and government agencies that collaborate to drive innovation and economic growth. In the IT sector, such clusters often become the main drivers for technology development, the creation of new products and services, and the

formation of the digital economy. In this case, turbulence means instability and unpredictability in the socio-economic, political, or technological environment, which can be caused by wars, economic crises, technological breakthroughs, changes in regulatory conditions, or global pandemics [5; 7; 9].

Such conditions create both threats and opportunities for the development of innovation clusters. The impact of turbulence on the development of IT clusters is shown in the following (Table 1):

Table 1

Impact of turbulence on the development of IT clusters

Factor	Significance.
Changes in demand for technology	Growth of cybersecurity due to geopolitical risks
Outflow or inflow of talent	Migration of specialists due to instability
Access to funding	Reduction of investments or their redistribution

Source: [1-11].

Adaptation of clusters to the conditions of instability contributes to the creation of flexible management strategies, strengthening of international cooperation and integration of new business models, such as remote work and outsourcing. At the same time, the role of the state is manifested in the formation of incentives to support clusters (grants, benefits, regulatory relief) and protection of national interests in the field of technology.

Innovative trends in IT clustering include the introduction of artificial intelligence, blockchain, metaverse, and the development of ecosystems for the integration of startups and corporations [11; 12; 15].

The practical value of developing innovation clusters in turbulent conditions will allow creating sustainable models of cooperation that will help minimize risks and strengthen the position of the IT industry at the national and international levels. The development of innovation clusters in the IT sector under conditions of turbulence depends on many factors that can be divided into external and internal (Tables 2, 3) [2-7; 11; 13;14; 15].

Table 2

External factors influencing the development of innovation clusters in the IT sector under conditions of turbulence

Factors	Description
Economic	<p>Financial stability - economic crises, inflation, or currency fluctuations can affect access to capital.</p> <p>Investment climate - the level of investor confidence in the region and the availability of venture capital.</p> <p>The level of development of the digital economy - the growing demand for IT products and services stimulates innovation.</p>
Political	<p>Political stability - conflicts or changes in government can limit long-term planning.</p> <p>Government support - availability of cluster incentive programs, preferential taxation, and subsidies.</p> <p>International relations - sanctions, access to global markets, partnerships with other countries.</p>
Technological	<p>Level of digital infrastructure - access to high-speed Internet, data centers, cloud services.</p> <p>Technological trends - active development of AI, blockchain, IoT, and other technologies promotes the development of specialized clusters.</p>
Social	<p>Migration processes - outflow or inflow of skilled workers due to turbulence.</p> <p>Culture of innovation - support for startups, mentoring, and collaboration between business and education.</p> <p>Demand for digital solutions - the need for innovative IT products due to changes in the way society lives.</p>
Environmental	<p>Energy stability - the impact of power outages on cluster operations.</p> <p>The use of environmentally friendly technologies - the trend towards green IT solutions.</p>

Source: [2-15].

Table 3

Internal factors influencing the development of innovation clusters in the IT sector in turbulent conditions

Factors	Description
Organizational	Quality of cluster management - availability of competent managers, effective management structure. Interaction of participants - the level of cooperation between companies, universities and government agencies. Strategic adaptability - the ability to quickly change strategy in response to challenges.
Intellectual	Qualification level of employees - availability of highly qualified IT specialists. Training and development - continuous education, professional development courses.
Innovative potential	R&D volume - investments in research and development activities. Risk appetite - the ability of companies and clusters to implement new solutions.
Financial	Availability of funding - internal reserves, grants, or venture capital investments. Resource efficiency - the ability to optimize costs.
Infrastructural	Cluster localization - access to offices, coworking spaces, incubators, and accelerators. Digitalization of processes - automation of work and use of modern platforms.

Source: [2-15].

There is a loss of qualified personnel due to migration and a decline in investment due to economic instability [1-5].

The development of innovation clusters in such conditions requires a balance between adaptability and strategy, as well as cooperation between cluster members to mitigate risks and find new opportunities.

For the development of innovation clusters in the IT sector, turbulence can act as a catalyst or a barrier. In the first case, there is an increase in demand for IT products due to crisis conditions (e.g., automation, cybersecurity, remote work) and acceleration of technology adoption due to the need for adaptation. On the other hand,

The development of innovation clusters in the IT sector in the face of turbulence has significant potential to strengthen the economy, support business and ensure stability, the benefits of which are shown in Fig. 1 [6-12].

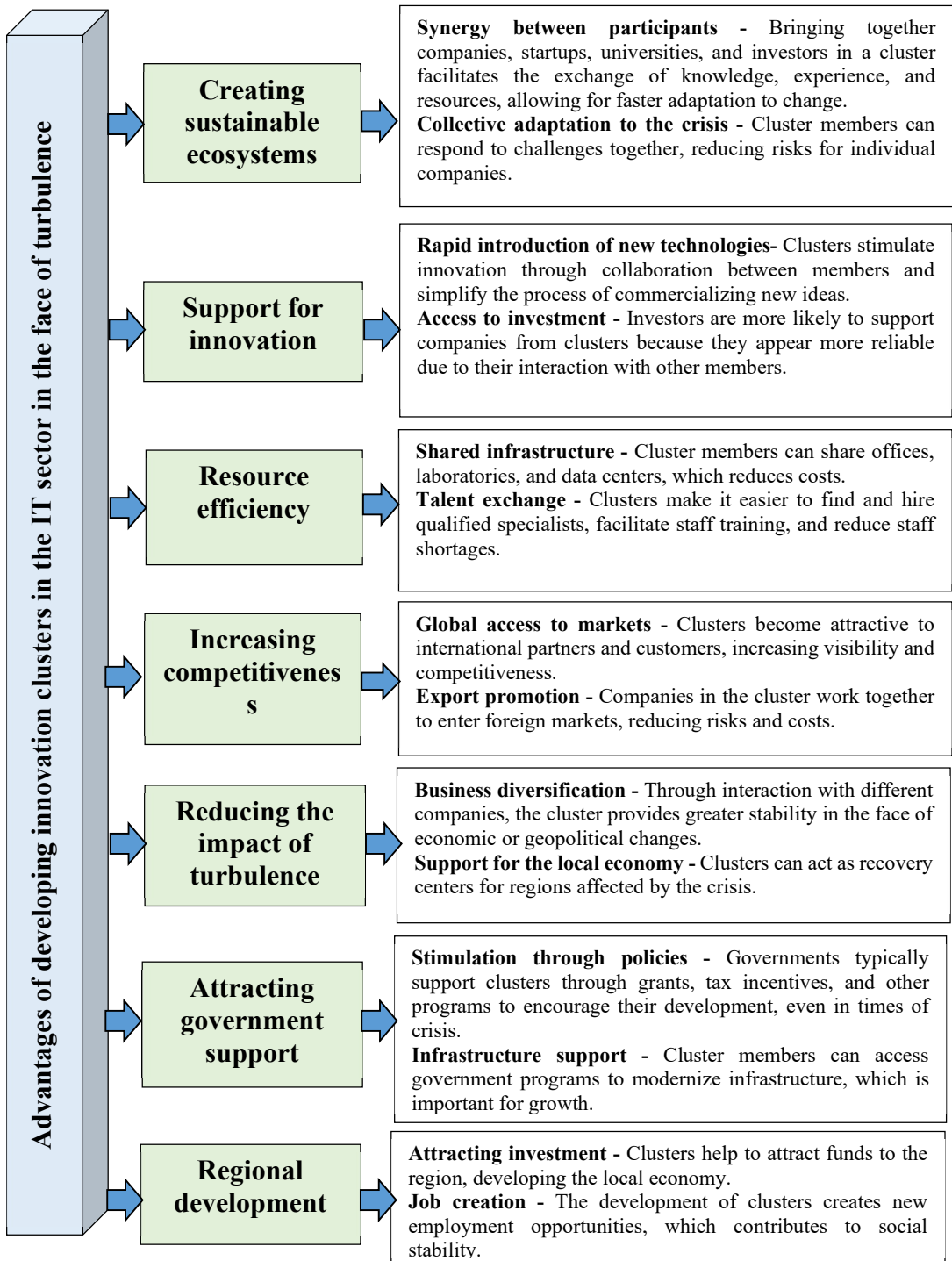


Fig. 1. Key benefits of developing innovation clusters in the IT sector in turbulent times

Source: [6-12].

Therefore, IT innovation clusters ensure both economic and social sustainability, minimizing the negative effects of turbulence and providing a platform for growth.

Along with the benefits of developing innovation clusters in the IT sector in the face of turbulence, there are also certain obstacles.

Turbulence caused by geopolitical, economic, or social factors that affect the speed of adaptation, access to resources, and global competition (Table 4).

Table 4

Challenges and opportunities for the development of innovation clusters in the IT sector in the face of turbulence

Challenges of turbulence	Development opportunities in the face of turbulence
<p>Decline in investment activity In an unstable environment, investors are more cautious about investing, especially in startups and high-risk projects.</p>	<p>Localization of innovations Clusters can focus on developing products that solve local problems, particularly in times of crisis (cybersecurity, distance education, medtech, etc.).</p>
<p>Emigration of personnel IT professionals may move to more stable regions, creating a shortage of qualified personnel.</p>	<p>Globalization of talent Thanks to remote work, turbulence can increase the exchange of specialists between countries, attracting new ideas and experience.</p>
<p>Risks to infrastructure Instability can affect access to physical and digital resources, such as data centers or cloud services.</p>	<p>Government support In unstable environments, governments can stimulate innovation through grants, tax breaks, or the creation of technology parks.</p>
<p>Unpredictable markets Constant changes in legislation, currency fluctuations, or sanctions can create barriers to the operation of IT clusters.</p>	<p>Fast adaptation Turbulence fosters the development of startups that can respond quickly to market changes.</p>
	<p>Market diversification IT clusters can expand their presence in global markets, reducing dependence on one country or region.</p>

Source: [8-14].

In order to effectively develop innovative clusters in the IT sector in the face of turbulence, it is necessary to use strategies for the further development of IT clusters:

1. Creation of a collaborative ecosystem - a partnership between universities, business and government to share experiences and develop innovations.
2. Digitalization of processes - using AI, big data, and blockchain to manage the cluster.
3. Startup acceleration - investing in startup development programs to create innovative products.
4. Human resources development - investing in the training of IT specialists through retraining and advanced training programs.
5. Flexibility and adaptability - developing strategies to respond quickly to market and environmental changes.

Successful examples of cluster adaptation include Ukraine, where during the war Ukrainian IT clusters focused on developing solutions for the defense industry and cybersecurity. Israel - despite constant threats, Israeli innovation clusters remain leaders in technological progress, focusing on startups and research.

Thus, turbulence can become a catalyst for innovation if risks are properly managed and focus is on key areas. The development of IT clusters requires flexibility, rapid adaptation and integration with global markets.

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2.5. Principles of work motivation in agricultural enterprises

Labor has always been a source of spiritual and material values, so the problem of motivating people to work has never lost its relevance¹⁰¹. Attempts were made to increase the motivation of work activity already in the first stages of the emergence of social production. Later, from different positions and under different names, scientists began to study what is today called the problem of motivation, i.e. various aspects of encouragement, stimulation, and activation of labor. Methods of motivation have always been associated with a specific level of production development, needs, culture, existing social conditions, and religion. At the same time, for a long time, humanity has been trying to change employee behavior, guided not by scientific approaches, but by the “trial and error” method¹⁰².

An important feature of the society is the priority of attention to personnel - the main element of production, economic growth and competitiveness. The experience of developed countries of the world proves that not a single management task in any field of activity can be completed without the interest of the employee who performs it¹⁰³. Knowledge of corporate personnel motivation is an institution for creating the best incentives for employees. In any case, the activities of employees are aimed at achieving significant social benefits from the company, but at the same time, the activities of the company are based on the contributions of employees.

¹⁰¹ Oksentyuk, A. (2012). Foreign and scientific evidence on personnel management. *Galician Economic Newsletter*, 2012(1(34)), 66-72.

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