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DIRECTIONS OF ENSURING HIGH EFFICIENCY OF THE ECOSYSTEM AND DYNAMIC DEVELOPMENT OF THE NATIONAL ECONOMY

Abstract. The article is devoted to a comprehensive analysis of the system-forming elements of the development of the national economic ecosystem, within which the interaction and coherence of processes at the micro-, meso- and macro-levels play a key role. It is shown that achieving high results of socio-economic development is possible only under the conditions of a consistent state policy focused on supporting innovative activity, accelerating digital transformation, forming highly qualified human capital, as well as strengthening the institutional environment and mechanisms of public administration.

The conceptual principles of interpreting the national economy as an open multi-level ecosystem are revealed, where the interaction between entities at different levels is determined by the quality of the institutional, resource and information environment. Particular attention is paid to the meso-level as a space in which clusters, regional networks and industry interactions are formed, ensuring the circulation of knowledge, technologies and resources. It is the meso-ecosystem that acts as a mechanism for leveling imbalances between local and national processes, strengthening the competitiveness of regions and creating conditions for scaling innovations. The effectiveness of the meso-ecosystem depends on the ability of actors to transform network alliances into more stable integration structures, which is critical for the steady production of innovations in the form of patents.

Much attention is paid to the micro-level of the economic ecosystem, which forms the foundation of organizational stability and determines the ability of an enterprise to function effectively in conditions of dynamic change. The importance of macroeconomic stability as a basic regulatory component is emphasized, which increases the predictability of economic decisions, builds investor confidence and minimizes systemic risks for the financial sector. It is revealed that foreign economic integration and expanded participation in global networks create opportunities for the country to scale domestic business, access to the latest technologies, attract investments and deepen international knowledge exchange.

It is proven that it is the combination of these areas that forms the strategic basis of the economic ecosystem, determines its competitiveness, adaptability and ability to long-term sustainable development.

Keywords: Ecosystem, Micro-, Meso-, Macro-Levels, Development, National Economy.

JEL Classification: O10; O30; R11; E60; F15.

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Introduction. In the context of global competition and technological transformations, the formation of a comprehensive system for ensuring the sustainable development of the national economy is of particular importance. The effectiveness of economic

growth is determined by the state's ability to create conditions for innovation development, entrepreneurship support, human capital strengthening, and ensuring macro-social and macroeconomic stability.

The purpose of the article is to generalize

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and develop a theoretical and methodological approach to identifying key directions for ensuring the effective functioning of the economic ecosystem and creating conditions for the dynamic development of the national economy.

To achieve this goal, the following tasks need to be addressed: to systematize the structural levels of the economic ecosystem (micro, meso, macro) and determine their role in ensuring sustainable development; to substantiate the key directions of state policy aimed at increasing the efficiency of the ecosystem; to identify the interrelationships between infrastructural development, macroeconomic stability and foreign economic integration as system-forming factors.

The object of the study is the process of systemic organization and interaction of the elements of the national economic ecosystem, which determine its effectiveness and ability for sustainable development. The subject of the study is the theoretical, methodological and applied principles of forming an effective system of directions, mechanisms and tools that ensure the increase of efficiency of the economic ecosystem and its dynamic development.

The research focuses on the integration of digital technologies as a catalyst for change, which allows not only for optimizing current processes but also for forecasting future trends, facilitating a transition from reactive to proactive ecosystem management. Thus, the article aims to propose an innovative approach that combines theoretical models with practical recommendations, taking into account the specifics of the EU and Ukrainian economies, where digitalization is becoming a key factor of competitiveness.

Literature Review. A summary of the works of Ukrainian and foreign researchers, particularly D. North, M. Porter, J. Schumpeter, A. Galchynskiy, V. Heyets, and others, allows us to identify key directions that form the basis of economic dynamics and an effective ecosystem.

The institutional theory of Douglas North (North, 1990) emphasizes that economic development is determined by the quality of institutions that set the “rules of the game” in society. An ecosystem evolves due to legal stability, rule of law, reduced transaction costs, increased transparency, and a regulatory system oriented towards innovation.

Michael Porter (Porter, 2022) argues that growth is possible only through constant innovation renewal, production modernization, and productivity increases. Creating innovative ecosystems requires cluster development,

network interaction between business and science, stimulation of innovation, formation of competitive markets, and an entrepreneurial environment.

Joseph Schumpeter (Schumpeter, 1976) explains the cyclical nature of the economy through waves of innovative breakthroughs (“creative destruction”), therefore an ecosystem should stimulate entrepreneurship, startups, and mechanisms for commercializing innovations.

Ukrainian researchers A. Galchynskiy (Galchynskiy, 2017) and V. Heyets (Heyets, 2020) focus on structural restructuring oriented towards high-tech industries, combining market mechanisms and state policy, strategic management, intellectualization of production, human capital development, and the social dimension (welfare and justice).

In the study by Fimiar S. V. and Koval D. O. (Fimiar et al., 2025), an innovation ecosystem is considered as «a living social organism that is constantly changing under the influence of the actions of its agents and business units, between which there are multidimensional internal connections». It is emphasized that the functioning of such a system is based on the principles of self-development, self-organization and self-regulation, and its stability depends on the presence of an effective regulatory mechanism.

At the same time, these classical concepts, formed mainly in the era of the industrial economy, have significant limitations in the conditions of modern digital transformation. A key contradiction arises: stable evolutionary models (institutional, cluster, cyclical) cannot keep up with the accelerated, often chaotic dynamics of the digital economy, where breakthroughs in AI, Big Data, and blockchain exceed the adaptive capabilities of institutions. This leads to the productivity paradox – significant investments in digital technologies do not always convert into proportional productivity growth and economic results (Włodarczyk & Wisła, 2025).

At the same time, it is important to note the following:

- North’s institutional model faces a dilemma when data and cybersecurity regulation can stifle innovation, creating a false choice between security and the pace of progress (Bradford, 2024);

- Porter’s cluster theory partially loses relevance in a world of virtual platforms, where geographical proximity is replaced by digital integration, and network effects amplify monopolization instead of open competition;

- Schumpeter’s “creative destruction” insufficiently explains modern disruption

Table 1. Approaches to defining the concept of «ecosystem»

Author(s) / Source	Definition
A. Tansley (Tansley, 1935)	An ecosystem is a complex of living organisms and their physical environment, functioning as a single whole and being in constant interaction.
B.-Å. Lundvall (Lundvall, 2010)	An innovation ecosystem (national innovation system) is a network of interacting institutions involved in the process of creating, disseminating, and utilizing knowledge and technologies.
J. Moore (Moore, 1996)	A business ecosystem is an economic community of interconnected organizations and individuals that jointly develop innovations and create value for the market.
K. Schwab (Schwab, 2016)	A digital ecosystem is a dynamic environment for the interaction of technology, business, government, and society, shaped by digital platforms and network effects.
M. Jacobides (Jacobides, 2022)	An ecosystem is a set of complementary actors whose activities are coordinated around a shared value proposition without rigid hierarchy.

processes in the digital sphere, where new mechanisms for managing uncertainty and the risks of platform dominance are needed (Lundgaard & Rosenstand, 2019; McMullen, Jeffery, & Shepherd, 2006);

– the approaches of Galchynskiy and Heyets, developed in the context of post-Soviet transformations, insufficiently integrate digital tools for dynamic development under crisis conditions (war, pandemics), when digital infrastructure becomes critical and traditional policy lags behind. Current trends point to the transformation of social entrepreneurship into sustainable business models that ensure ecosystem inclusiveness (Fauzi et al., 2022).

This contradiction manifests in the practice of Ukraine and the EU: despite the existing theoretical base, institutions and clusters cannot keep up with the speed of technological shifts, which slows down the innovation cycle and reduces the economic effects of digital transformations.

This very contradiction justifies the need for further research. It calls for developing a theoretical and methodological approach that integrates classical concepts with digital realities, to create adaptive ecosystem management mechanisms and ensure the dynamic development of the national economy amid uncertainty and Ukraine's European integration.

Research Methodology. The methodological basis of the research consists of a complex of complementary scientific approaches and methods ensuring a comprehensive study of the current state and structural characteristics of the ecosystem. In analyzing the level of ecosystem development, a systems approach was used, which allows viewing the national economy as a set of interconnected micro-, meso-, and macro-level subsystems forming a single integrated space of economic interaction. A structural-functional approach was applied to determine the

role of individual ecosystem elements and their impact on the formation of economic development resilience and dynamics.

To assess the current state of the infrastructure, institutional, and innovation environment, methods of comparative analysis, index approach, and economic diagnostics were used, based on data from international rating systems (GII, EIS, WEF), national statistical indicators, and materials from expert-analytical reports. The method of economic-logical generalization was applied to identify key trends and problems of ecosystem effectiveness.¹

Methods of analysis and synthesis, induction and deduction made it possible to perform a theoretical generalization of approaches to identifying directions for improving ecosystem performance. Predictive methods were used to formulate possible development scenarios for the ecosystem, taking into account innovative, digital, and structural transformations. Graphic-analytical methods ensured the visualization of interconnections between key ecosystem elements and allowed for representing its development dynamics.

Generalization of the obtained data was carried out based on the method of expert assessments and content analysis, which allowed for the formulation of scientifically grounded conclusions regarding priority directions for ensuring high effectiveness of the national ecosystem.

Main Results. The classical interpretation by A. Tansley has a biological origin and lays the foundation for systems thinking, but it does not consider socio-economic and managerial aspects. The approach by B.-A. Lundvall emphasizes institutional and knowledge-based interaction but primarily considers the

1 WIPO. Global Innovation Index 2025 : Ukraine Ranking. Geneva : World Intellectual Property Organization, 2025.

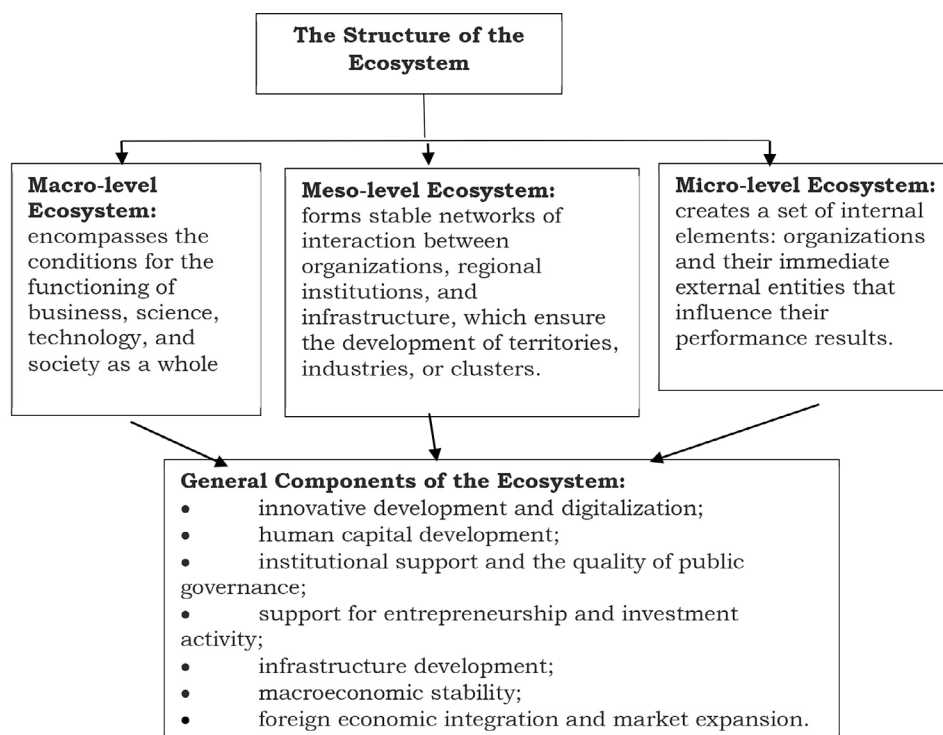


Fig. 1. Structural elements of the ecosystem of the national economy

Source: compiled by the authors based on sources Galchynskyi, (2017); Heyets, (2020).

ecosystem at the macro level. The business ecosystem concept by J. Moore shifts the focus to entrepreneurial interaction and value creation but does not sufficiently reveal internal management mechanisms. Modern approaches (Jacobides, 2022) emphasize the network, platform, and digital nature of ecosystems, which is fundamentally important in the context of the digital economy. At the same time, this creates the need for further research aimed at developing and substantiating key strategic vectors aimed at ensuring stable and effective functioning of the innovation ecosystem. The presented definitions (see Table 1) differ in their object of analysis and the logic of interaction between ecosystem elements.

The structure of the national economy's ecosystem will be considered at the macro-, meso-, and micro-levels (see Fig. 1), and its components will be characterized.

The macro-level ecosystem is the highest level of economic and social interaction. In innovation, entrepreneurship, and digital studies, the macro-level always reflects national and global factors that shape the development environment. Ukraine's innovation potential remains limited. According to the Global Innovation Index, Ukraine ranks 60th-66th, significantly lagging behind world innovation leaders, indicating weak institutional structures and insufficient levels of research

and technological investment¹. Data from Ukrpatent confirms low dynamics in patent activity, correlating with general trends in the country's innovation capacity (Ukrainian Institute, website <https://ukrpatent.org>).

According to the European Innovation Scoreboard, Ukraine's innovation ecosystem is only 32.5% of the EU average, explained by low structural readiness, an insufficient share of innovative SMEs, and weak design innovation potential².

Nevertheless, certain segments show positive dynamics. The European Commission notes a relatively high level of broadband internet development and knowledge-intensive services, creating a foundation for the growth of digital startups and the IT sector. This gap in the innovation potential of small and medium-sized enterprises (SMEs) necessitates a deeper understanding of the mechanisms behind digital transformation. As synthesized by Ramdani et al. (2022), digital innovation in SMEs is a complex process that requires the alignment of technological capabilities with organizational readiness and ecosystem sup-

1 WIPO. Global Innovation Index 2025 Ukraine Ranking. Geneva: World Intellectual Property Organization, 2025.

2 European Commission. European Innovation Scoreboard 2025. Luxembourg: Publications Office of the European Union, 2025. URL: https://research-and-innovation.ec.europa.eu/statistics/performance-indicators/european-innovation-scoreboard_en (date of access: 01.02.2026).

port to overcome structural barriers.

Given this situation, a targeted policy is necessary. To approach EU standards, Ukraine needs to strengthen R&D, support innovative SMEs, venture financing, institutional support, and digital infrastructure.

When analyzing Ukraine's innovation ecosystem, it is important to consider its macro-level constraints, i.e., low indicators in GII and DESI, which indicate systemic obstacles. But existing strengths - the potential of the IT sector, digital services, continuous high-speed internet - can be growth points.

To improve the macro-level ecosystem, institutional reforms, innovation incentive policies, startup and R&D support, digital transformation, and infrastructure are needed. This is a complex of factors that form the operating conditions for businesses and innovation development. The development of regional startup ecosystems is a key indicator of the effectiveness of the meso-level of the national economy (Smachilo et al., 2023). Therefore, the macro-level ecosystem includes state policy, institutional framework, economic conditions, infrastructure, human capital, culture, natural resources, and international connections.

The meso-level ecosystem encompasses the totality of interconnected actors, institutions, infrastructural, and resource components that ensure the functioning of economic processes within a specific region, industry, or territorial-economic formation. Unlike the macro-level, dominated by national institutions, or the micro-level, covering the activities of individual enterprises, the meso-level acts as an intermediate link, determining the real dynamics of national economic development. Specifically, the effectiveness of these interactions is grounded in user-producer relationships, which, as Lundvall argues, are fundamental for interactive learning and the successful internationalisation of the national innovation system (Lundvall, 2010).

Key actors form the core of the ecosystem, ensuring production, innovation, and organizational processes. The main actors include: small, medium, and large enterprises that create the main regional economic product; industry companies and production associations that ensure regional economic specialization; clusters and industrial groups that form network models of interaction and increase competitiveness; innovative enterprises, startups, knowledge-intensive companies; research institutes, scientific centers; universities as basic knowledge generators, creating a "triad" of business-science-govern-

ment interaction. The role of universities as key meso-level actors extends beyond knowledge generation; their own institutional sustainability and global standing are critical indicators of ecosystem health. As Alberti et al. (2025) highlight in their critical review of sustainability rankings, such metrics provide a framework for assessing how higher education institutions contribute to long-term environmental and social stability, which ultimately reinforces regional competitiveness.

In this context, higher education institutions (HEIs) function as strategic co-innovation partners that enhance ecosystem efficiency by compensating for internal resource gaps within firms and facilitating co-innovation processes, effectively helping enterprises reach their optimum possibility frontier (Vailant & Lafuente, 2025). Modern approaches suggest viewing the university at the heart of the city not merely as an educational hub, but as an active subject of community impact, necessitating the development of new scales to assess such interaction (Rieviezzo et al., 2025).

The efficiency of the meso-ecosystem is determined not only by economic indicators but also by the level of integration of social innovations. Social entrepreneurship acts as a connecting link that transforms philanthropic initiatives into sustainable business models, ensuring inclusive growth and social resilience of regional networks (Fauzi et al., 2022).

Thus, meso-level actors form a polycentric model where different economic sectors perform specific functions and interact through market and non-market mechanisms.

Meso-level institutions set the rules of the game for all ecosystem participants. They shape resource access conditions, define permissible forms of economic activity, and ensure the predictability of interactions, thus creating a favorable regulatory environment for innovation and stable regional development. The institutional environment includes: regional authorities (regional state administrations, local councils); industry regulators and agencies; local regulatory and legal acts; regional development strategies and socio-economic growth programs; mechanisms for supporting innovative entrepreneurship, clusters, and SMEs.

Meso-level infrastructure provides resource, technological, and organizational support to ecosystem actors. It includes: business incubators, entrepreneurship support centers; technoparks, scientific and engineering

parks; industrial parks and production hubs; technology transfer and knowledge commercialization centers; logistics networks, transport corridors, warehouse centers; regional digital transformation centers.

Thus, this infrastructure forms a spatial-organizational framework that determines the speed of innovation diffusion and the efficiency of economic processes.

Financial mechanisms play a key role in ensuring the stability of the meso-ecosystem, providing capital inflow, supporting innovative projects, and stimulating regional development. Financial infrastructure includes: regional development and investment agencies; venture funds, business accelerators; grant programs of international organizations; local budgets and special targeted programs; banking institutions, credit unions, and other financial intermediaries.

The meso-level is the scale at which competencies, entrepreneurial ability, and innovation are best manifested. Human potential determines the quality of economic growth and innovation capacity, namely: educational programs of universities, colleges, and professional business schools; professional associations and industry unions; staffing agencies and employment centers; innovation communities, entrepreneurial networks; local labor resources and demographic potential.

Digitalization has become a basic element of modern regional ecosystems. It ensures the speed of information exchange, management quality, access to electronic services, and improves the efficiency of interaction between meso-system actors. Key components: telecommunications networks, broadband internet access; regional e-government platforms; digital services for business – electronic registries, e-services; data centers, cloud computing; data collection and monitoring systems.

A developed network of partnerships ensures rapid knowledge dissemination and creates synergy between actors, realized in the form of: interregional and industry cooperation networks; consortia – scientific, educational, industrial; public-private partnerships; cooperation agreements between business and science; cluster and industry associations.

The meso-level ecosystem is a complex multi-component system combining economic, institutional, social, and digital elements. Its effectiveness is determined by the balance between actors, resources, and the regional institutional environment.

The micro-level ecosystem encompasses the immediate environment of an entity (enterprise, organization, individual) that

directly influences its functioning, development, and performance results. This is the level where interaction is direct, regular, and intensive.

The micro-level ecosystem is formed as the immediate operating environment of an organization or individual economic agent and encompasses the totality of internal and external factors that directly determine behavioral models, operational efficiency, and development dynamics. Unlike macro- and meso-ecosystems, which set general frameworks and rules of operation, the micro-ecosystem reflects the specific configuration of interactions at the enterprise, work collective, or individual entity level, where each element has a direct and rapid impact on performance results.

The central component of the micro-level is the internal environment of the organization, covering personnel potential, staff competencies, management structure, established values and behavioral norms, as well as material-technical and financial resources. The interrelation of these elements determines the level of organizational capacity and the enterprise's ability to adapt, innovate, and function productively. Corporate culture plays an integrative role: it sets interaction norms, shapes communication styles, and influences internal staff motivation, thereby determining decision-making quality and responsiveness to environmental changes.

In the micro-ecosystem structure, external actors of direct interaction occupy an important place, i.e., those stakeholders with whom the organization contacts systematically and regularly. These include suppliers of material resources and technologies, clients, logistics and service partners, as well as competitors, collectively shaping local market dynamics. The presence of stable cooperative ties, trust, and mutual adaptability between actors determines business process stability and flexibility in responding to risks. Furthermore, the micro-environment includes local institutions – local self-government bodies, professional associations, local educational and scientific institutions, which shape personnel flows, enhance competency potential, and promote firm innovativeness. In this context, recent studies by Liu et al. (2025) further emphasize that the effectiveness of an enterprise's micro-ecosystem is fundamentally contingent upon the depth of its integration into such professional networks. Specifically, these professional connections among small and medium-sized enterprises (SMEs) serve as a critical catalyst for digital innovation, enabling firms to adapt more rapidly to

Table 2. Structuring the main directions of ensuring the development of the national economy

Strategic Block	Substantive Directions	Expected Effect
Innovation-Technological Development	Innovations, Digitalization, Infrastructure	Productivity growth, technological renewal
Human-Institutional Development	Human Capital, Institutions, Governance	Increased labor efficiency, reduction of transaction costs
Macroeconomic and Global Integration	Macroeconomic Stability, Foreign Economic Integration	Strengthening positions on global markets, development stability

Source: compiled by the authors based on sources Heyets (2020); Bradford, (2024)

technological shifts and enhancing overall organizational resilience.

The leading structural component of the modern micro-ecosystem is the communication-information environment, which integrates all internal and external processes. The use of digital tools – from CRM and ERP systems to cloud services and online communication – creates a foundation for operational decision-making, continuous document flow, transparent interaction between employees, and effective customer flow management. In the digital ecosystem, information becomes a key resource, and its circulation speed determines organizational competitiveness.

A special dimension of the micro-level is the personnel ecosystem, encompassing the totality of individual social, professional, and psychological factors. This includes personal connections, working conditions, level of professional workload, opportunities for training and development, as well as the non-work environment – family, friends, social institutions of the immediate surroundings. The interaction of these elements shapes individual motivation, stress resilience, readiness for change, and the employee's ability to integrate into organizational processes. Thus, the personnel micro-ecosystem acts as a transitional link between the internal organizational environment and the broader socioeconomic space.

Collectively, all these components create a complex, multi-level micro-ecosystem structure where internal organizational resources, external stakeholders, information flows, and the human factor function as interconnected and interdependent elements. The effectiveness of this system determines the enterprise's adaptability to market challenges, capacity for innovation, productivity, and development stability. That is why the micro-ecosystem is a key analytical level for modern strategic management, organizational dynamics, and the study of competitive advantages.

Characterizing the significance of key de-

velopment directions of the ecosystem in the national economy allows summarizing the presented directions into three substantive blocks (see Table 2).

The development of the national economy depends on a comprehensive combination of macroeconomic stability, institutional quality, innovation potential, and the efficient use of resources. Several key directions are critical for ensuring sustainable economic growth.

The formation of a competitive national ecosystem requires the coordinated development of an environment in which state institutions, business structures, scientific and educational organizations, financial institutions, and civil society interact. The generalization of theoretical approaches shows that ensuring high results in the development of the national economy is possible only under the conditions of a comprehensive approach to the formation of economic policy. The most significant are the directions related to innovation-technological renewal. Innovation development and digitalization ensure technological renewal, growth in labor productivity, and production competitiveness. To mitigate the «productivity paradox» – where substantial investments in digital technologies fail to convert into proportional economic growth – the ecosystem must focus on the development of adaptive human capital. The effectiveness of digitalization at the micro- and meso-levels is contingent upon the capacity of institutions and management structures to rapidly capitalize on technological implementations by updating business processes (Fauzi et al., 2022).

The development of human capital is also of paramount importance. It includes education, vocational training, healthcare, and social support, which enhance labor potential.

Simultaneously, institutional quality and macroeconomic stability serve as fundamental prerequisites for the effective implementation of other directions. Effective institutions are a guarantee of the predictability of economic

decisions, reduction of transaction costs, and increased investment attractiveness.

Support for entrepreneurship and investment activity creates conditions for the development of small, medium, and innovative businesses.

In an integrated economic ecosystem, each element performs a certain system-forming function, and the stability of this interaction depends on the quality of three basic subsystems: infrastructure, macroeconomic, and foreign economic. It is they that shape the environment in which micro- and meso-level entities gain the opportunity for development, innovation, cooperation, and scaling of their activities.

Infrastructure, in a modern understanding, is considered not only as a set of material objects but as a network framework of the national ecosystem that ensures the circulation of resources, information, and knowledge among all its elements. Transport, energy, digital, and logistics systems perform the role of a “fabric of connections,” which ensures the reduction of transaction costs for enterprises at various levels and expands the space of economic opportunities through the rapid movement of goods, data, people, and capital. Furthermore, this integrated infrastructure promotes more balanced regional development by integrating peripheral territories into national production and logistics chains, while also enhancing innovation capacity through the development of digital infrastructure, which creates prerequisites for the formation of startup hubs, technological clusters, and new business models (North, 1990).¹

In a systemic dimension, the infrastructure subsystem performs a connecting function in the ecosystem, ensuring synergy between actors at the micro-, meso-, and macro-levels.

Macroeconomic stability ensures the predictability of ecosystem participants' behavior and minimizes risks associated with economic turbulence. Inflation stability, budget balance, and consistent monetary policy form a regulatory environment that guarantees the protection of the value of economic resources and savings and stimulates long-term investment, as low volatility makes investment decisions predictable.

Macroeconomic stability creates a

foundation for the development of a financial ecosystem, which includes banks, investment funds, venture capital, insurance, and credit institutions. This contributes to the competitiveness of the private sector, as a predictable environment lowers the cost of credit and promotes enterprise modernization.

In the context of the ecosystem approach, macro-stability performs the role of an institutional field within which micro- and meso-agents operate, and the quality of this field determines their ability to adapt and innovate.

Foreign economic integration ensures the inclusion of the national ecosystem in global flows of resources, technologies, information, and knowledge. Expanding sales markets, participating in international production chains, and deepening trade and economic ties perform several key functions. Firstly, it allows for the scaling of internal innovations and the commercialization of industrial and agricultural products in foreign markets, as well as attracting an inflow of technologies and capital, which strengthens the national innovation potential. Secondly, such integration contributes to increased productivity of enterprises integrated into global value chains, disseminates international standards that stimulate production modernization, and forms a competitive environment that enhances the efficiency of the domestic market (Porter, 2022; Tiesheva, 2021).

In the structure of the ecosystem, international economic interaction serves as an exchange channel through which the circulation of technologies, knowledge, investments, and management practices occurs, directly influencing the development of micro- and meso-levels.

The conducted analysis of the system-forming elements of the national ecosystem, taking into account the interaction of micro-, meso-, and macro-levels, as well as data from international rankings (GII, EIS, DESI) for 2025, revealed that economic efficiency depends on a balance of institutional reforms, digital transformation, and global integration. Studying the experience of the EU and Ukraine showed that, despite progress in digital services (Ukraine ranks 66th in GII 2025 with improvement in innovation output), gaps in productivity persist due to insufficient adaptation of classical models to digital dynamics, which requires proactive strategies for sustainable growth².

Strategic directions and instruments identified based on the analysis focus on

1 European Commission. European Innovation Scoreboard 2025. Luxembourg: Publications Office of the European Union, 2025. – URL: https://research-and-innovation.ec.europa.eu/statistics/performance-indicators/european-innovation-scoreboard_en (date of access: 01.02.2026).

2 WIPO. Global Innovation Index 2025: Ukraine Ranking. Geneva: World Intellectual Property Organization, 2025.

digital integration and reforms to overcome productivity paradoxes, taking into account EU-Ukraine plans for 2025-2026 (e.g., Ukraine Facility and the government action plan). They ensure dynamism through resource synergy and adaptation to challenges.

1. Innovation-Technological Development: Direction on digitalization and infrastructure (energy, transport). Instruments: R&D grants, technoparks, AI analytics for monitoring (e.g., ITU Digital Profile 2025 for Ukraine).

2. Human-Institutional Development: Focus on human capital and governance. Instruments: Educational programs (e-learning), public administration reforms (ESBU), venture financing for SMEs.

3. Macroeconomic and Global Integration: Stability and foreign trade. Instruments: Updating the EU-Ukraine DCFTA, investment agencies, blockchain for transparency, with an emphasis on recovery (economy, security).

These elements form an adaptive ecosystem where instruments (grants, platforms) accelerate growth, as seen in the EU Green Deal and the Ukrainian plan for 2025-2029, ensuring a transition to sustainable dynamics.

Conclusion. As a result of the conducted research, it was found that today, global changes are taking place in the national economy. Infrastructure development is a key element in ecosystem formation, as it ensures spatial integrity, resource mobility, and the integration of all levels of economic activity. Macroeconomic stability acts as a critical institutional factor, creating an environment of predictability, stimulating investment, and contributing to the sustainable development of the private sector. Foreign economic integration enhances the openness of the ecosystem, forms channels for technological renewal, and creates conditions for market expansion.

The obtained theoretical propositions form a methodological basis for developing state strategies for infrastructure and innovation development, as well as policies for integration into global economic spaces. Thus, to ensure the sustainable development of the national economy, it is important to combine investments in technology, people, institutions, and integration into global economic processes. It is precisely the comprehensive combination of these directions that forms a resilient, competitive, innovative national economy in the long term.

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НАПРЯМКИ ЗАБЕЗПЕЧЕННЯ ЕФЕКТИВНОСТІ ЕКОСИСТЕМИ ТА ДИНАМІЧНОГО РОЗВИТКУ НАЦІОНАЛЬНОЇ ЕКОНОМІКИ

Стаття присвячена комплексному аналізу системоутворюючих елементів розвитку національної екосистеми, у межах якої ключову роль відіграють взаємодія та узгодженість процесів на мікро-, мезо- й макрорівнях. Показано, що досягнення високих результатів соціально-економічного розвитку можливе лише за умов послідовної державної політики, орієнтованої на підтримку інноваційної діяльності, прискорення цифрової трансформації, формування висококваліфікованого людського капіталу, а також зміцнення інституційного середовища та механізмів державного управління.

Розкрито концептуальні засади трактування національної економіки як відкритої багаторівневої екосистеми, де взаємодія між суб'єктами різних рівнів визначається якістю інституційного, ресурсного та інформаційного середовища. Особливу увагу приділено мезорівню як простору, у якому формуються кластери, регіональні мережі та галузеві взаємодії, що забезпечують циркуляцію знань, технологій і ресурсів. Саме мезоекосистема виступає механізмом вирівнювання дисбалансів між локальними та національними процесами, підсилюючи конкурентоспроможність регіонів і створюючи умови для масштабування інновацій.

Велику увагу приділено мікрорівню екосистеми, яка формує фундамент організаційної стійкості та визначає здатність підприємства ефективно функціонувати в умовах динамічних змін. Підкреслено значення макроекономічної стабільності як базового регулятивного компонента, що підвищує передбачуваність економічних рішень, формує довіру інвесторів та мінімізує системні ризики для фінансового сектору. Розкрито, що зовнішньоекономічна інтеграція та розширення участі в глобальних мережах створюють для країни можливості масштабування вітчизняного бізнесу, доступу до новітніх технологій, залучення інвестицій і поглиблення міжнародного обміну знаннями.

Доведено, що саме сукупність цих напрямів формує стратегічну основу екосистеми, визначає її конкурентоспроможність, адаптивність і здатність до довгострокового стійкого розвитку.

Ключові слова: екосистема, мікро-, мезо-, макрорівні, розвиток, національна економіка.

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