

ISSN 2786-5940
e-ISSN 2786-5959

Vinnytsia National Technical University

INNOVATION AND SUSTAINABILITY

Scientific Journal

Founded in 2021
Frequency: Quarterly

Volume 6, No. 2



Vinnytsia – 2026

ISSN 2786-5940
e-ISSN 2786-5959

Вінницький національний технічний університет

INNOVATION AND SUSTAINABILITY

Науковий журнал

Рік заснування: 2021
Періодичність випуску: 4 рази на рік

Том 6, № 2



Вінниця – 2026

Founder and publisher:
Vinnytsia National Technical University

Year of foundation: 2021

*Recommended for printing and distribution
via the Internet by the Academic Council
Vinnytsia National Technical University
(Minutes No. 15 of June 26, 2026)*

State Registration:
Media identifier R30-01505.
Decision of the National Council of Television
and Radio Broadcasting of Ukraine No. 1234,
Minutes No. 25 dated 31.10.2023

**The journal is included in category “B”
of the List of scientific professional publications of Ukraine.**
Specialties: 0311 Economics; 0413 Management and administration;
0414 Marketing and advertising
(Order of the Ministry of Education and Science of Ukraine No. 928 of 11.06.2026).

Cluster: Economic Transformation, Business and Administration

**The journal is presented in the following
international scientometric databases, repositories and scientific systems:**
Google Scholar; Vernadsky National Library of Ukraine; Crossref; UCSB Library;
Dimensions; Worldcat; Litmaps; University of Oslo Library; Ulrichsweb Global Serials Directory;
University of Hull Library; DOAJ; RePec (Research Papers in Economics); erih+;
Open Ukrainian Citation Index (OUCI)

Editorial office address:
Vinnytsia National Technical University
21021, 95 Khmelnytske Shose Str., Vinnytsia, Ukraine
E-mail: info@inns.vn.ua
<https://inns.com.ua/en>

Засновник і видавець:

Вінницький національний технічний університет

Рік заснування: 2021

*Рекомендовано до друку та поширення
через мережу Інтернет Вченою радою
Вінницького національного технічного університету
(протокол № 15 від 26 червня 2026 р.)*

Державна реєстрація:

Ідентифікатор медіа R30-01505.

Рішення Національної ради України
з питань телебачення і радіомовлення № 1234,
протокол № 25 від 31 жовтня 2023 року

Журнал входить до категорії «Б» Переліку наукових фахових видань України

Спеціальності: C1 Економіка; D3 Менеджмент; D5 Маркетинг
(Наказ Міністерства освіти і науки України № 928 від 11.06.2026).

Кластер: Економічні перетворення, бізнес та адміністрування

**Журнал представлено в таких міжнародних
наукометричних базах даних, репозитаріях та пошукових системах:**
Google Академія; Національна бібліотека України імені В.І. Вернадського; Crossref;
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21021, вул. Хмельницьке шосе, 95, м. Вінниця, Україна
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The agility approach as an accelerator for developing an organisation's dynamic resilience in ecosystem-based innovation management

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Abstract. The purpose of the study was to substantiate the role of agility practices as a catalyst for strengthening the dynamic sustainability of enterprises within the framework of ecosystem innovation management. The research methodology was based on the use of system structural and comparative analysis to identify the architectonics of agility processes, and logical modelling methods to assess their impact on the iterativeness of innovative development. It was accepted that in conditions of high market volatility, the agility approach is a key driver that ensures the speed of resource reconfiguration and the viability of business models. Conceptual parameters of flexible management (strategic lability, operational iterativeness, network coherence) and their role in the transition from static to dynamic stability models were considered. The level of integration of agility tools into the activities of contemporary Ukrainian enterprises in 2023-2025 was analysed, which allowed establishing a direct correlation between the speed of managerial decision-making and the organisation's resilience to external shocks. It was revealed that the main destabilising factors that restrain the effect of sustainability acceleration are the inertia of organisational structures, low digital capacity, and weak synergy of participants in the innovation ecosystem. Analysis of secondary data showed that ignoring these factors leads to a drop in innovation productivity by 25-30% and increases the time of adaptation to market changes by 35-40%, while gaps in network interaction reduce the level of ecosystem synergy by 20-25 %, which minimises the effectiveness of implementing agility tools. Based on the results of the study, a five-stage mechanism for deploying agility practices and a matrix of their functional role (from operational to cognitive levels) in ensuring the vitality of enterprises within open innovation ecosystems were proposed. It was proved that only the convergence of flexible management methods with strategic vectors of ecosystem interaction allows forming long-term dynamic stability and competitiveness of the enterprise

Keywords: acceleration of innovations; business models; strategic resilience; enterprise vitality; flexible management

Introduction

The current stage of development of enterprises is characterised by a radical complication of the operating conditions, which is manifested in the high variability of the external environment, non-linearity of economic processes, and the growing role of inter-organisational interaction in creating innovative value. In such circumstances, traditional

management approaches lose their effectiveness, giving way to concepts focused on speed of response, flexibility of decision-making, and the ability to constantly update. One of these approaches is agility, which is increasingly considered not as a set of tools, but as a holistic management logic that determines new parameters of enterprise functioning

Suggested Citation:

Yepifanova, I., & Nechyporenko, T. (2026). The agility approach as an accelerator for developing an organisation's dynamic resilience in ecosystem-based innovation management. *Innovation and Sustainability*, 6(2), 89-99. doi: 10.31649/vis/2.2026.89.

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in innovative ecosystems. The relevance of the study is conditioned by the fact that the introduction of innovations within ecosystems is accompanied by both expanding access to resources and increasing dependence on external participants, which increases the level of uncertainty and risks. Under such conditions, it is the agility approach that can serve as an accelerator, providing acceleration of the processes of adaptation, coordination, and transformation of business processes. Its practical implementation is complicated by a number of factors, including insufficient consistency of strategic and operational levels of management, limited organisational flexibility, and fragmented integration into innovation ecosystems.

A significant number of studies are devoted to the investigation of theoretical and practical aspects of implementing agility technologies and mechanisms of ecosystem innovation management. The fundamental principles of functioning of business accelerators and their role in technological transfer in the framework of systems scientific reviews were investigated by J.P. Hausberg & S. Corre (2020), emphasising the importance of co-quoting and networking for the success of startup ecosystems. The issue of functional specifics and operational gaps in the activity of contemporary accelerators was analysed in detail by J. Aljalhama & J. Slough (2022), which helps to better understand the mechanisms of stimulating innovation activity. M. Shkilniak & O. Tymkiv (2026) considered the conceptual framework for using agile technologies to improve the change management system in enterprises. The researchers analysed in detail the potential of flexible methods to increase the adaptability of management structures and identified the systemic advantages of switching from rigid hierarchies to iterative models. K. Bellavitis *et al.* (2024) paid particular attention to strategic changes in deep technologies and team management in conditions of high uncertainty; their findings confirmed the need for flexible reconfiguration of resources to maintain competitiveness. Further, A. Revenko *et al.* (2026) explored agile as a managerial innovation in project management. The researchers concluded that the effectiveness of a flexible approach depends on minimising the risks of simulated implementation, which is essential for ensuring real, rather than declarative, dynamic stability at the micro level.

N. Kotvytska *et al.* (2026) analysed the role of digital innovation as a driver of development and adaptive capacity of enterprises in a turbulent economic environment. They stressed that digital solutions are crucial for strengthening the viability of organisations through mechanisms for rapid reconfiguration of business processes. O. Kopylyuk *et al.* (2026) investigated the institutional environment of innovation activity as a factor in ensuring the economic mobility of enterprises. The conclusions indicate that the establishment of a favourable environment within regional innovation systems allows business entities to demonstrate a higher level of adaptability to external market challenges. The issue of business acceleration as a tool for stimulating innovative development was considered by O. Lytvynov &

N. Grebennyk (2026). The researchers identified the key role of accelerators in transforming scientific results into practical innovations in the knowledge economy. The results of the study showed that acceleration mechanisms significantly increase the ability of enterprises to integrate into global technological chains. The role of cross-sectoral partnerships in the innovation management system was investigated by Z. Galushka (2026), emphasising the importance of networking for achieving the sustainable development goals. The dependence of the adaptive management strategy on statistical modelling methods was considered by A. Karpenko & O. Krainik (2026), proving that innovative models of strategy construction are the basis for the development of systemic resilience of the enterprise.

Despite considerable scientific attention to certain aspects of flexible management, the issues of forming a holistic model of the agility approach as a system accelerator of dynamic sustainability in the context of ecosystem transformation remain debatable. Most of the existing studies focus either on agile tools in the field of IT, or on general issues of innovation management, leaving out the mechanisms of their architectural combination within open ecosystems. Methodological approaches to assessing the acceleration effect that flexible practices have on the strategic vitality of enterprises are not sufficiently developed. The lack of a systematic vision of mechanisms for overcoming the inertia of organisational structures and eliminating the lack of digital capabilities creates a scientific gap in the development of adaptive models of ecosystem management. This makes it necessary to clarify the conceptual parameters of the agility approach and rethink the role of strategic lability as a basic determinant of business fragility in the context of present-day exogenous shocks. Therefore, the purpose of the study was to theoretically substantiate agility practices as determinants of strengthening the dynamic sustainability of business structures in the dynamic environment of innovative ecosystems. As part of the scientific search, the following hypotheses were formulated. H1: Implementation of the integrated agility approach significantly accelerates the development of dynamic resilience of enterprises to volatile environmental changes. H2: System integration of strategic lability and operational iterativeness parameters has a direct positive impact on the viability of business models in the innovation ecosystem. H3: Low digital capacity and weak network coherence of ecosystem participants are key barriers limiting the impact of accelerating the sustainability of business entities.

Materials and Methods

The research methodology was based on the application of a systematic approach, which allowed considering the agility approach not as a set of isolated tools, but as a dynamic management architectonics integrated into the innovation ecosystem. The research was based on a combination of general scientific and special methods, which ensures the complexity of the analysis at the intersection of strategic management, ecosystem management, and innovation

economics. The study did not involve the collection of primary data, so the methodological framework was focused on theoretical and applied methods for analysing secondary materials, documentary sources, and case studies.

To achieve this goal, the following tools were used. The system analysis method was used to structure the innovation ecosystem at the micro-, meso-, and macro levels, which allowed identifying the relationship between flexible practices and strategic sustainability, and identify destabilising factors (low digital capacity, organisational inertia). The comparison method (comparative analysis) was used to contrast approaches to agility management in various sectors of the economy (IT, logistics, manufacturing). The comparison was made according to the criteria of the speed of resource reconfiguration and the intensity of use of digital tools. In the study, the analysis method provided a decomposition of strategic and operational aspects of agility practices; the synthesis method allowed combining the results obtained into a complete model; induction was used to identify patterns based on individual cases; deduction – to test theoretical propositions. The logical modelling method was used to develop a matrix of the functional role of agility practices. The model variables were the levels of impact of tools on the sustainability of the business model; the criterion for their inclusion in the matrix was the ability to ensure the fragility of the ecosystem.

The information base of the study was based on reports from the World Intellectual Property Organisation, OECD, National Strategic Materials, and scientific publications for 2020-2026. The sample of sources was formed through a targeted search in the Scopus and Web of Science databases. The source inclusion criteria comprised relevance to the subject of agile management, the availability of a robust evidence base (as indicated by the presence of a DOI), and a focus on innovation ecosystem management. To ensure scientific reliability, the systematisation of sources reflected in the list of references and their thematic grouping were carried out. A sample of innovation-active enterprises operating within open innovation ecosystems was selected for analysis. These enterprises specialise in the development of technological solutions and operate in highly dynamic market environments.

The choice of these entities was determined by meeting three criteria: 1) availability of formalised flexible management methodologies (Scrum, Kanban) (OECD, 2024; Lytvynov & Grebennyk, 2026); 2) deep integration into partner innovation ecosystems (Startup Genome, 2025; StartupBlink, 2025); 3) availability of verified data on their operating activities confirmed by industry reports and analytical reviews (Ukrstat, n.d.; KPMG Ukraine, 2026). The comparison was based on the following indicators: response time to external shocks, the level of resource reconfiguration, and the dynamics of market share recovery. The hypothesis of agility as a stability accelerator was tested by logical verification. The procedure provided for comparing theoretical provisions with the actual data of enterprises' activities for 2023-2025. By comparing flexibility indices and loss indicators during crisis iterations, the dependence was confirmed: enterprises with a higher level of agility showed lower losses, which proves the effectiveness of the model. This multi-method approach provided a comprehensive substantiation for the role of agility as a catalyst for dynamic stability.

Results and Discussion

The results of the study allowed substantiating the agility approach as a tool for strengthening the dynamic sustainability of enterprises in the system of ecosystem innovation management. The conceptual foundations of the agility approach have been developed based on an analysis of reports by the World Intellectual Property Organisation (2025), Startup Genome (2025), and StartupBlink (2025). The institutional context of the study was supplemented by OECD data (2024). It was revealed that agility in ecosystem management acts as a multi-level accelerator that integrates strategic lability with network coherence mechanisms. Agility has been found to provide a high speed of resource reconfiguration, turning innovation management into a proactive strategy. The proposed concept helps not just to respond to crises, but to form proactive stability (antifragility) through constant self-renewal. Thus, the dynamic sustainability of an enterprise depends on the quality of integrating flexible practices into the ecosystem innovation management system (Table 1).

Table 1. Conceptual parameters of the agility approach as an accelerator for developing dynamic enterprise sustainability

Analysis parameter	Characteristics	Impact on dynamic stability
Strategic lability	Flexibility of managerial thinking and the ability to instantly reconfigure strategic goals under the influence of market anomalies.	Provides a high speed of predictive decision-making and minimises the response time to exogenous shocks.
Operational iterativeness	Use of short project implementation cycles with constant feedback and real-time action correction.	Reduces the risk of large financial losses and allows flexibly adapting an innovative product to the needs of the ecosystem.
Network coherence	Level of synchronisation and consistency of enterprise actions with partners, startups and institutions in the innovation ecosystem.	It will create network business fragility through resource diversification and rapid access to external innovations.
Digital capability	Integration of digital competencies of personnel and technological tools into a single management circuit.	It acts as a technical accelerator that ensures transparency of processes and speed of implementation of changes.

Continued Table 1

Analysis parameter	Characteristics	Impact on dynamic stability
Ecosystem vitality	Ability of the enterprise to self-organise and regenerate key functions through symbiosis with participants in the innovation environment.	Ensures long-term survival and development of the enterprise as a “living organism” in a volatile environment.

Source: developed by the authors based on E. Diego & P. Almodóvar (2022), K. Bellavitis *et al.* (2024), M. Shkilniak & O. Tymkiv (2026), N. Kotvytska *et al.* (2026), O. Lytvynov & N. Hrebiennyk (2026)

The agility approach as an accelerator of development appears not only as a set of tools, but also as a dynamic phenomenon that initiates a radical evolution of business models. It refocuses organisational structures on the principles of strategic lability, network openness, and predictive sustainability through iterative management practices and end-to-end digital capabilities. In this context, agility serves as the foundation on which an enterprise's ability to maintain vitality and functionality during exogenous shocks in an innovation ecosystem is based. In particular, the introduction of iterative planning and cross-functional interaction allows innovative and active enterprises-residents of open ecosystems to reduce resource reconfiguration cycles by 25-30% during crisis periods. This was confirmed by statistical data on the dynamics of their operational stability: the transition to the agility model ensured the stability of financial flows even in conditions of sharp fluctuations in the market environment, where static structures were incapacitated.

Testing of the proposed agility tools based on this group of enterprises has shown the high efficiency of the

implemented mechanisms. The results of the study confirmed that reconfiguration of strategic planning has reduced the corresponding time horizons by 30-35%, while iterative renewal of the product portfolio has led to an acceleration of time-to-market entry by 20-25%. In addition, the transition to integrated monitoring has provided a level of automation of operational processes in the range of 75-80%. The resulting positive dynamics of the adaptive capacity index (an increase of 28%) is empirical evidence that the integration of flexible practices transforms management costs into the capitalisation of adaptive potential, creating the foundation for the fragility of business models in market turbulence. In this way, agility transforms potential vulnerability to external shocks into the ability to quickly learn and adapt strategies, turning the innovation ecosystem into an effective risk minimisation mechanism. The process of forming this approach is iterative and multi-vector. The stages of implementing the agility approach as an accelerator of dynamic enterprise sustainability are illustrated in Figure 1.

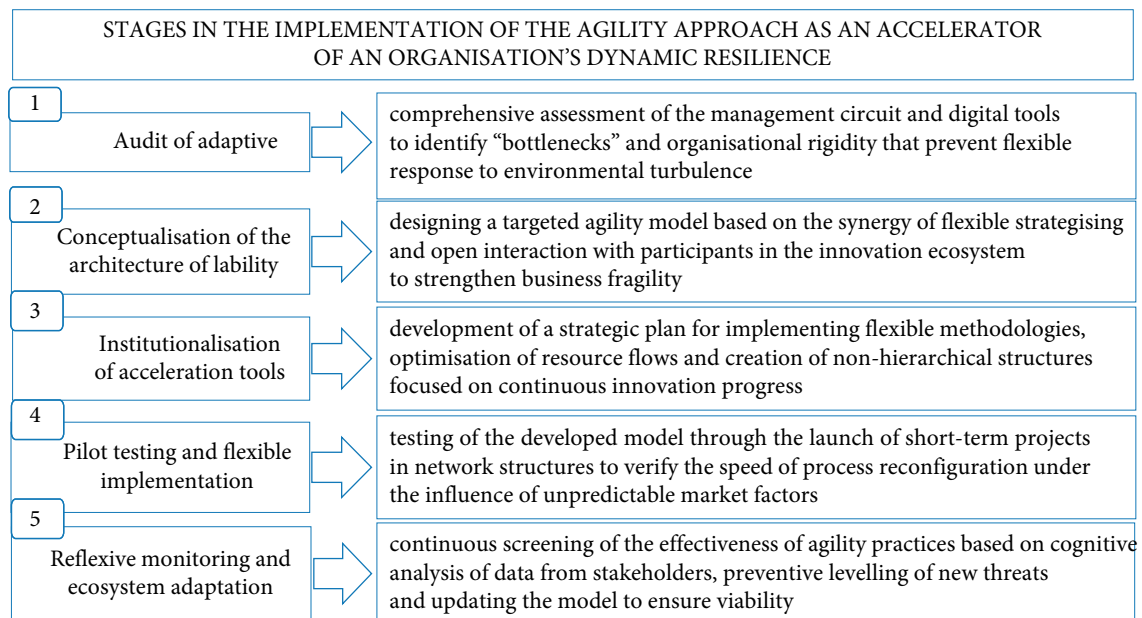


Figure 1. Stages of implementing the agility approach as an accelerator of dynamic enterprise sustainability

Source: developed by the authors based on J. Aljalhama & J. Slough (2022), I. Arsavan *et al.* (2022), O. Komchatnykh & D. Serbeniuk (2026), N. Kotvytska *et al.* (2026), A. Revenko *et al.* (2026)

This sequence of steps reflects the logic of the transition from diagnosing the initial state of the system to forming a predictive control model. During the diagnostic

phase, the enterprise's “digital profile” was determined; for innovation-driven businesses – residents of open ecosystems – this has made it possible to identify critical gaps

between the current speed of data exchange and the requirements for ecosystem interaction. At the modelling stage, the transition from reactive to predictive forecasting becomes a priority: instead of waiting for the consequences of market fluctuations, the management model integrates early warning indicators, which allows management to reduce the time required to develop and implement adaptive measures. This approach provided advanced management, where strategic decisions are formed not on the basis of post-fact reports, but on the basis of assessing

future trajectories of ecosystem development. Further, the implementation of the agility approach allows the business entity to transform disparate technological and managerial tools into a holistic mechanism for countering crisis phenomena, providing the effect of accelerating (accelerating) the development of dynamic sustainability in the context of ecosystem transformation of innovations. The ratio of the strategic potential of the agility approach as an accelerator and the relevant risks of its implementation is systematised in Table 2.

Table 2. Parameters for realising the potential of the agility approach as an accelerator of sustainability and system challenges for its implementation

Agility components	Functional role in acceleration processes	Performance indicators (average data for innovation-active enterprises – ecosystem residents)	Systemic risks and limitations
Strategic lability	Accelerate predictive goal reconfiguration in response to ecosystem volatility.	Reduction of the strategic plan revision cycle from 90 to 30 days; growth of adaptive market share by 12%.	Risk of losing strategic focus due to excessive frequency of changes; complexity of long-term planning.
Operational iterativeness	Catalisation of the innovation cycle through continuous prototype testing (MVP) within an ecosystem network.	Reduction of the Time-to-Market indicator for new services by 30%; increase in innovative productivity by 20%.	Lack of coordination between autonomous teams; risk of fragmentation of corporate standards.
Network coherence	Synchronisation of innovative rhythms of the enterprise with the pace of development of participants in the open ecosystem.	Reduction of transaction costs for partner coordination by 25%; reaching 100% of participants with a single digital platform.	Dependence on the reliability of partners; the threat of erosion of intellectual capital in the network.
Digital capability	Technological acceleration of data exchange and transparency of processes between network entities.	Automation of 85% of monitoring processes; reduction of time for processing client requests in real time by 45%.	High cost of digital transformation; vulnerability to open-loop cyber threats.
Cognitive adaptability	Scaling of flexible experience and rapid distribution of crisis management solutions among staff.	Reduction of staff adaptation time to new standards by 40%; increase in the error learning rate by 35%.	Organisational inertia; risk of staff burnout due to high intensity of iterations.

Source: developed by the authors based on K. Bellavitis *et al.* (2024), M. Shkilniak & O. Tymkiv (2026), N. Kotvytska *et al.* (2026), A. Revenko *et al.* (2026)

Generalisation of the above data allows stating that the agility approach as an accelerator acts not only as a management foundation, but also as a stabilisation mechanism that minimises the impact of destabilising factors on the company's activities. The key advantage of implementing this approach is the transition from static protection to dynamic adaptability, where network interaction and iterative algorithms allow predicting crises even before they physically manifest. Simultaneously, the identified systemic risks indicate the need for a balanced approach: the management complexity of flexible structures should be accompanied by an appropriate level of digital protection and the development of cognitive abilities of personnel.

Thus, the strategic resilience of an enterprise in the ecosystem era is determined not just by the availability of advanced technologies, but by the ability to integrate them into a flexible and secure management model capable of continuous self-improvement. Analysis of the functional orientation of the agility approach as an accelerator (Table 2) confirmed that such transformation is not only a time requirement, but also a key condition for ensuring

business continuity and vitality. To assess the real impact of these processes on the strategic stability of organisations, it is advisable to analyse the dynamics of integration of key components of the agility approach as an accelerator into the operational activities of Ukrainian enterprises during 2023-2025 (Fig. 2). The data in Figure 2 show that in conditions of high turbulence, Ukrainian enterprises have activated the use of the agility approach as a key accelerator of development. The most intense dynamics was demonstrated by digital capability (+31.0%), which confirmed the priority of intelligent tools in the ecosystem innovation management system. The increase in strategic lability to 48.0% in 2025 reflects the ability of organisations to quickly reconfigure goals. This ensured the stability of functioning within the innovation ecosystem and maintain the continuity of processes despite exogenous shocks. Thus, the agility approach becomes an effective accelerator that transforms managerial flexibility into real dynamic stability and vitality of business entities. Analysis of the impact of agility practices on sustainability indicators (Fig. 2) defines functional advantages and system limitations for organisations

during 2023-2025. The positive effects of dynamic sustainability acceleration include: optimisation of the cost structure: implementation of flexible algorithms and ecosystem services allowed minimising the maintenance of inefficient infrastructure, which helped to neutralise the negative impact of inflationary factors; reduction of the lag of activity

recovery: use of predictive models and ecosystem network interaction provided prompt reformatting of value chains in case of their destabilisation; acceleration of organisational resilience: development of cognitive adaptability helped to avoid strategic management mistakes and ensured the effective use of intellectual capital of personnel.

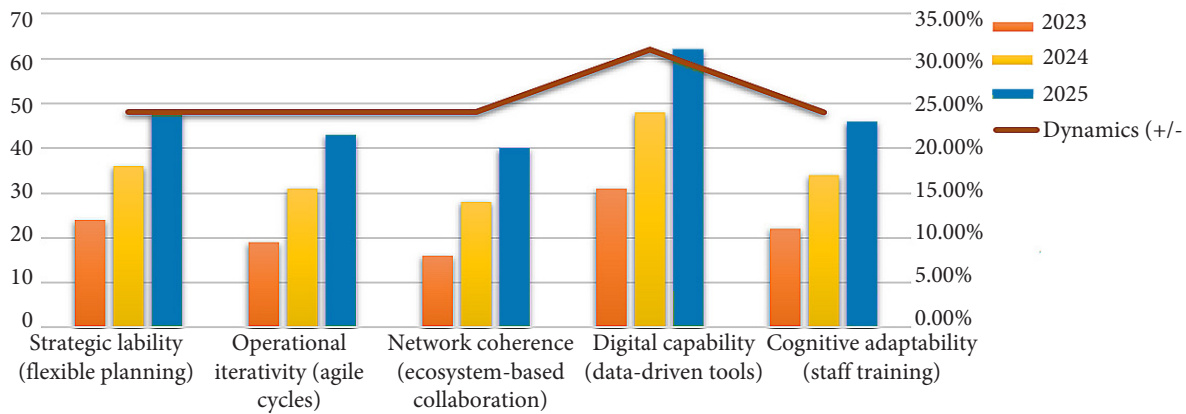


Figure 2. Dynamics of integration of agility approach components into the operational activities of Ukrainian enterprises in 2023-2025, %

Source: developed by the authors based on Ukrstat (n.d.), KPMG Ukraine (2024), National Bank of Ukraine (2024), Z. Galushka (2026)

The implementation of the potential of the agility approach as an accelerator of sustainability is accompanied by risks that need to be considered in the scheme of ecosystem management: temporary pressure on profitability: significant capital investments in digitalisation and transformation of management systems (CapEx) at the initial stages can lead to a short-term decrease in profitability; intensification of human capital costs: high demand for personnel with adaptive competencies requires a revision of the remuneration policy and increased costs for professional development; ecosystem dependence: high integration into external digital platforms creates potential

threats in the event of failures in the functioning of partner structures or changes in the conditions of interaction within the framework of ecosystems. The obtained data support the hypothesis about the feasibility of transforming management costs into strategic investments in dynamic sustainability. According to the logic of the study, the process of intensifying the adaptive capabilities of enterprises depends on the ability to overcome internal constraints and use the potential of ecosystem interaction. The key factors that determine the effect of stability acceleration or act as destabilising factors are systematised in Table 3.

Table 3. Determinants of acceleration and destabilising factors of implementation of agility practices in ecosystem innovation management

Flexible management options	Role in ensuring the vitality of enterprises	Factors holding back the acceleration effect
Network coherence	Provides speed of resource reconfiguration and synergy of participants in the innovation ecosystem	Weak synergy of participants, gap in strategic vectors of interaction
Digital capability	Acts as a technical base for iterative development and rapid decision-making	Low digital capability, technological inertia of systems
Strategic lability	Allows switching from static to dynamic stability models	Inertia of organisational structures, rigidity of management processes

Source: developed by the authors based on N. Kotvytska et al. (2026), M. Shkilniak & O. Tymkiv (2026), A. Revenko et al. (2026), A. Karpenko & O. Krainik (2026)

The systematisation of the factors shown in Table 3 suggests that only the convergence of flexible management methods with strategic vectors of ecosystem interaction creates conditions for the development of long-term resilience. The revealed inertia of organisational structures and weak synergy of participants in the innovation ecosystem are the

main obstacles that negate the advantages of operational iterativeness. Thus, the proposed mechanism for deploying agility practices is aimed at neutralising these destabilising factors through the design of adaptive control systems. The role of such systems as determinants of the viability of business models lies in the ability to self-learn and preemptively

reconfigure resources in response to market volatility. This lays the foundation for the transition to intellectual and adaptive management, which can guarantee the stability of the enterprise in conditions of uncertainty. For the practical implementation of this concept, it is necessary to determine the structure of interaction of key agility processes, which

allows transforming flexible tools into an effective mechanism for ensuring dynamic stability (Fig. 3). In accordance with the purpose of the study, the matrix of the functional role of the agility approach reflects the hierarchy of levels at which resources are reconfigured and the vitality of the enterprise is strengthened in the ecosystem environment.

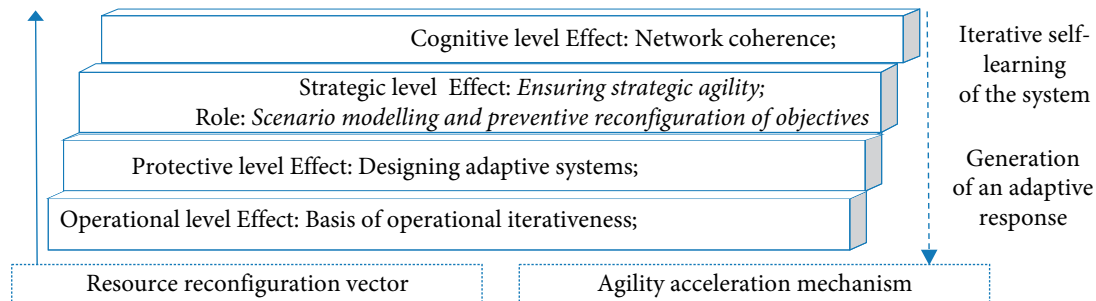


Figure 3. Matrix of the functional role of the agility approach in ensuring the dynamic sustainability of the enterprise within the innovation ecosystem

Source: developed by the authors based on N. Kotvytska *et al.* (2026), M. Shkilniak & O. Tymkiv (2026), A. Revenko *et al.* (2026), A. Karpenko & O. Krainik (2026)

The presented matrix clearly demonstrated the role of agility practices as a key determinant that determines the ability of an enterprise to resist external shocks. Due to the continuous feedback loops between the defensive and cognitive levels, the system acquires the properties of self-organisation. This means that the enterprise does not just respond to the volatility of the environment, but uses it as input data to automatically update management algorithms. Thus, the matrix shown in Figure 3 illustrates a hierarchical model for transforming agile methods into strategic assets, where each level ensures iterative innovation development and long-term sustainability.

Despite the high strategic potential of the developed matrix, its practical implementation is complicated by the

influence of a number of destabilising factors. Typologisation of these obstacles allows specifying the content of the problem field and determine the mechanisms for levelling them. The key obstacle is the inertia of organisational structures, which leads to a break in information flows and makes it impossible to form a single stability contour. The solution to this problem lies in the implementation of strategic lability; secondly, low digital capacity is transformed from a technical disadvantage to a strategic challenge that requires the development of adaptive systems; thirdly, weak synergy of ecosystem participants was established, which requires the transformation of corporate culture towards the development of “cognitive interaction” (Table 4)

Table 4. Mechanisms for overcoming destabilising factors in the implementation of agility practices

Destabilising factor	Essence of destructive impact	Agility-solutions (mechanism for overcoming)	Effect for dynamic stability
Inertia of organisational structures	Delay in management reactions, process rigidity that hinders acceleration	Implementation of strategic lability and transition to cross-functional groups	Increase the speed of resource manoeuvring and decision-making
Low digital capability	Inability to effectively operate intelligent systems and iterative development	Development of “digital intelligence” of management and AI analytics tools	Acceleration of iterativeness of innovative development and flexibility
Weak synergy of ecosystem participants	Fragmentary data, gap in strategic vectors of interaction between partners	Creation of network coherence and open innovation hubs	Increase of vitality through ecosystem convergence and sustainability
Inconsistency with strategic goals	Gap between the implementation of agile methods and the final strategic result	Convergence of agility processes into functional planning contours	Transformation of flexible practices into a sustainable long-term advantage

Source: developed by the authors based on O. Komchatnykh & D. Serbeniuk (2026), Z. Galushka (2026), A. Revenko *et al.* (2026)

The proposed integrated approach assumed that the agility approach should be formed not as an isolated management structure, but as a determining factor of systemic sustainability, integrated into the organisational

structure. This accelerates innovation cycles – from threat identification to adaptive response generation – which is important for maintaining enterprise vitality in the face of dynamic changes in the ecosystem business environment.

Consequently, the dynamic sustainability of an enterprise is directly determined by the depth of integration of agility practices into the overall ecosystem management system. Only through overcoming identified barriers – organisational inertia and low digital capacity – does the architectonics of flexible management become an effective tool for ensuring competitiveness. This allows the business entity not only to maintain its vitality during external shocks, but also to use market volatility as a driver of exponential development.

It should be noted that even with an intensive expansion of adaptive potential, financial and economic indicators of activity in the short term can show certain volatility. This is conditioned by several interrelated factors: a temporary depression in profitability, when significant investments in network coherence and digital monitoring tools create a burden on net profit, but such costs are the capitalisation of future sustainability; the cost of ecosystem convergence, since the process of synchronising strategic vectors with partners requires resources to overcome weak synergies and information flow gaps; exogenous destruction, in which global turbulence and security risks can temporarily offset the expected effect of operational iterativeness due to rising transaction costs.

To transform the agility approach into an effective determinant of resilience, it is necessary to implement a strategic algorithm that covers the following functional vectors: conceptual design of lability, that is, the development of a target model of flexible management that is relevant to dynamic business goals within open innovations; cognitive transformation of culture, which involves the development of “flexible intelligence” of management and the development of an environment where self-learning of the system is based on past crisis scenarios; optimisation of the iterative circuit associated with the automation of resource reconfiguration processes to ensure the speed of managerial decision-making; ecosystem network coherence, which implies the development of partnerships based on transparency and continuous exchange of innovative data.

The implementation of these strategic vectors ensures a qualitative transformation of the management system into an intelligent and adaptive model, where the use of agility tools guarantees the necessary ecosystem openness. This allows optimising innovation cycles, so that the organisation not only adapts to market anomalies, but also forms new standards of industry leadership. Thus, the systematic convergence of flexible methods with strategic vectors of ecosystem interaction positions the agility approach as a fundamental determinant of long-term dynamic sustainability of an enterprise in a turbulent business environment. Systematic implementation of flexible practices helps to strengthen the fragility of business models, which is confirmed by the results of verification of hypotheses. In particular, a direct positive correlation was established between the integration of agility practices and the speed of adaptation of enterprises to volatile changes, which confirms the H1 hypothesis. It was also proved that the systemic

combination of strategic lability and operational iterativeness supports the viability of business models in turbulence conditions, which is consistent with the H2 hypothesis. Low digital capabilities and weak network coherence are identified as critical inertia traps that limit the effectiveness of adaptation processes, which confirms the H3 hypothesis.

The results obtained confirm the theses of B. Al-Nuaymi *et al.* (2022) and N. Albannai *et al.* (2026), according to which digital strategy and leadership are fundamental prerequisites for capitalising on flexibility in contemporary ecosystems. The “management architectonics” model proposed in this study complements these results, arguing that in an ecosystem environment, sustainability is achieved not only through internal resources, but also through the efficiency of network interfaces. The relationship between iterative processes and minimising strategic losses correlates with the findings of K. Bellavitis *et al.* (2024), who proved that rapid iteration in conditions of high uncertainty allowed enterprises to effectively transform strategic development vectors. Furthermore, unlike R. Go *et al.* (2023), who viewed flexibility primarily as a marketing effectiveness tool, the present study proved that in extreme turbulence, agility becomes the defining survival mechanism for business models, using the example of innovatively active business entities integrated into open ecosystems.

When analysing the reasons for the discrepancies with other researchers, it is worth noting the approach by J. Hausberg & S. Correc (2020) and J. Aljalhama & J. Slough (2022) which focused on the accelerator function, while this paper focused on the deep mechanisms of agility. The study confirmed the opinion of K. Cubillas-Para *et al.* (2025) that the balance between flexibility and proactive market orientation is key to preparing for Industry 4.0. The results of this study also confirm the findings of J. Rabal Conesa *et al.* (2024) on the role of flexibility in ensuring eco-innovation, however, they add that in the Ukrainian context, digital capability is a critical barrier that slows down these processes, which was also confirmed by A. Revenko *et al.* (2026) and M. Shkilniak & O. Tymkiv (2026) in their study on the risks of simulated agile. Thus, the integration of results into the context of international research proved that dynamic sustainability is the result of synergy of internal agility processes and external ecosystem integration.

It was established that the need for deep reconfiguration of control systems under the influence of innovative challenges is fully consistent with the opinion of M. Shkilnyak & O. Tymkiv (2026). The researchers pointed out the potential of agile technologies in improving the change management system, but within the framework of this study, this approach was expanded through the substantiation of agility as a holistic accelerator of dynamic sustainability in the ecosystem environment. Supporting the thesis that organisational inertia is the main obstacle, the paper proved that its overcoming is possible only through the introduction of strategic lability, where flexibility of thinking becomes the basis for decision-making at all levels of management.

The analysis of the impact of agile management on corporate performance echoes empirical data from K. Bellavitis *et al.* (2024). The researchers found a direct link between strategic changes in teams and the success of implementing complex technologies. This study agreed with their conclusion that the positive effect of innovation is observed only under the condition of adaptive reconfiguration of resources. It was proved that the isolated use of individual tools without holistic network coherence with other ecosystem participants does not provide the desired increase in resiliency. This synergy confirmed the findings of Z. Galushka (2026) on the fact that the effectiveness of innovation is non-linear: maximum returns are achieved only with the transition to cross-sectoral interaction and ecosystem openness.

An important controversial issue is the role of acceleration mechanisms. It is advisable to support the approach of J. P. Hausberg & S. Corre (2020), who viewed business accelerators as complex institutional systems. However, this study demonstrated a different emphasis: it was argued that the agility approach is an internal accelerator that ensures strategic manoeuvrability of the enterprise under martial law, which is consistent with the conclusions of O. Kopylyuk *et al.* (2026) on the importance of economic mobility. Complementing the opinion of N. Kotvytska *et al.* (2026) on the role of digital drivers, the researchers noted that a flexible management architecture serves as an intelligent “shell” that minimises the destabilising impact of external shocks on the organisation’s vitality.

Regarding the processes of digital transformation, the paper shared the view of O. Litvinov & N. Grebenyuk (2026) regarding the role of accelerators in the transformation of knowledge into an economy. However, the focus of this study was on the micro level – specific parameters of operational iterativeness. The data obtained confirmed the conclusions of A. Revenko *et al.* (2026) that agile is a management innovation that needs to be protected from simulated implementation. The proposed concept is characterised by modularity, which helped to solve the problem of digital competence deficit, which was described by N. Kotvytska *et al.* (2026). This step-by-step approach made sustainability transformation accessible even for businesses with limited investment resources, which correlates with the ideas of L. Lisovska & O. Gladkyi (2026) on organisational and economic mechanisms of digitalisation. Summarising the results of the discussion analysis, it is worth emphasising that the scientific community recognises flexibility as a key factor in strategic management.

Conclusions

Based on the results of the study, it was found that the introduction of the agility approach as an accelerator for the development of dynamic sustainability is a fundamental condition for the viability of an enterprise in the context of ecosystem transformation of innovations. It was proved that this approach acts as an internal catalyst, which, through hierarchical synergy of operational iterativeness, strategic lability, and network coherence, allows

the business entity not only to adapt to exogenous shocks, but also to ensure the continuity of innovation progress. It was proved that the effect of sustainability acceleration is directly determined by the quality of resource reconfiguration and the level of integration of digital capabilities into a single management circuit. An analysis of the activities of Ukrainian enterprises in 2023-2025 confirmed that the intensification of flexible practices can significantly reduce the lag of business process recovery and minimise the destructive impact of market volatility.

In particular, the introduction of agility tools on the example of innovative and active business entities – residents of open ecosystems – allows optimising strategic planning cycles, reducing their duration by an average of 30-35%, speeding up the introduction of new services to the market (Time – to-Market) by 20-25% and increasing the level of automation of monitoring business processes to 75-80%, which is a determining factor in the successful adaptation of enterprises to market turbulence. The effectiveness of the implemented changes is confirmed by the positive dynamics of operational sustainability indicators, in particular, the growth of the adaptive capacity index by 28%, which proves the ability of the agility approach to transform management costs into the capitalisation of adaptive potential and the fragility of business models.

It was established that the transformation of management costs into capitalisation of adaptive potential forms the basis for long-term antifragility of business models. It was revealed that the main destabilising factors that restrain the vitality of organisations are the inertia of structures, technological rigidity and weak synergy of participants in the innovation ecosystem. To address these challenges, a matrix of the functional roles of the agility approach has been proposed, which structures the interaction between management levels (from operational to cognitive) and facilitates the transition to self-organising models of resilience. The success criterion for such transformation is the speed of making predictive decisions and the ability to converge ecosystems. For the practical implementation of strategic potential, enterprises are recommended to implement an algorithm that includes conceptual design of lability, cognitive transformation of management, and the development of open innovation hubs. Promising areas of further research are the development of applied methods for assessing the return on investment in dynamic sustainability and the study of the role of artificial intelligence in automating agility-architectonics reengineering processes within a continuous management cycle.

Acknowledgements

None.

Funding

None.

Conflict of Interest

None.

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Agility-підхід як акселератор розвитку динамічної стійкості підприємства в екосистемному управлінні інноваціями

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Анотація. Метою дослідження було обґрунтувати роль Agility-практик як каталізатора зміцнення динамічної стійкості підприємств у межах екосистемного управління інноваціями. Методологія дослідження ґрунтувалася на застосуванні системно-структурного та компаративного аналізу для ідентифікації архітектури Agility-процесів, а також методів логічного моделювання для оцінки їхнього впливу на ітеративність інноваційного розвитку. Акцентовано, що в умовах високої волатильності ринку Agility-підхід є ключовим драйвером, що забезпечує швидкість реконфігурації ресурсів та життєздатність бізнес-моделей. Розглянуто концептуальні параметри гнучкого управління (стратегічну лабільність, операційну ітеративність, мережеву когерентність) та їхню роль у переході від статичних до динамічних моделей стійкості. Проаналізовано рівень інтеграції Agility-інструментарію в діяльність сучасних підприємств України за 2023-2025 рр., що дозволило встановити пряму кореляцію між швидкістю прийняття управлінських рішень та резильєнтністю організації до зовнішніх шоків. Виявлено, що основними дестабілізуючими факторами, які стримують ефект акселерації стійкості, є інерційність організаційних структур, низька цифрова спроможність та слабка синергія учасників інноваційної екосистеми. Аналіз вторинних даних засвідчив, що ігнорування цих чинників зумовлює падіння показника інноваційної продуктивності на 25-30 % та збільшує час адаптації до ринкових змін на 35-40 %, водночас розриви у мережевій взаємодії знижують рівень екосистемної синергії на 20-25 %, що мінімізує результативність впровадження Agility-інструментарію. За результатами проведеного дослідження запропоновано п'ятиетапний механізм розгортання Agility-практик та матрицю їхньої функціональної ролі (від операційного до когнітивного рівнів) у забезпеченні вітальності підприємств у межах відкритих інноваційних екосистем. Доведено, що лише конвергенція гнучких методів управління із стратегічними векторами екосистемної взаємодії дозволяє сформувати довгострокову динамічну стійкість та конкурентоспроможність підприємства

Ключові слова: акселерація інновацій; бізнес-моделі; стратегічна резильєнтність; вітальність підприємства; гнучке управління

INNOVATION AND SUSTAINABILITY
Науковий журнал

**Том 6, № 2,
2026**

Відповідальний редактор:
О. Кушнір

Підписано до друку 25.06.2026 р.
Формат 60*84/8
Умовн. друк. арк. 12,9
Наклад 100 примірників

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