

INNOVATIVE MANAGEMENT TOOLS AS A BASIS FOR ECONOMIC SECURITY

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Abstract. The *subject* of the present study is the conceptual, theoretical and applied foundations of the use of innovative management tools as the basis for strengthening national economic security. The study demonstrates the dual role of innovations: as sources of new opportunities for sustainable development and, concomitantly, as a factor of additional risks that must be managed strategically. *Methodology.* The study employed general scientific methods of analysis and synthesis, as well as induction and deduction. A monographic method was also used to systematise innovative tools. A comparative analysis was employed to highlight international approaches to innovation management systems, while a thematic study was conducted to evaluate the application of innovative tools in Ukraine with a view to ensuring economic security amidst war and global instability. The article aims to systematise theoretical and applied approaches to innovative management tools, reveal their role in ensuring national economic security and identify the opportunities and contradictions that arise from their interaction. *Results.* The study shows that innovation management tools support every stage of the innovation cycle, from idea generation to monitoring and scaling up. These tools enable organisations and governments to increase resilience, improve competitiveness and reduce their dependence on external technology providers. However, innovation also creates new risks, including cybersecurity threats, social inequality, environmental challenges and regulatory gaps. Achieving a balance between innovation development and economic security requires public policies that integrate openness to global technologies with the protection of national interests. Despite the war, Ukraine has mobilised its innovative potential by integrating state institutions, the IT community, startups and volunteers into joint resilience systems. In 2024, Ukrainian startups attracted 1.8 billion USD, with fintech, agritech, artificial intelligence and green technologies leading the way. This demonstrates how innovation tools can directly contribute to economic and national security. Nevertheless, according to the National Economic Security Index developed by the International Institute of Freedom, Ukraine scored only 35.2 out of 100 in 2024. This indicates a low quality of governance and an inability to ensure sustainable growth and defence capability. *Conclusion.* The study proves that innovative governance tools are essential for ensuring national economic security. These tools enable growth to be combined with adaptability, technological progress with increased resilience and global integration with the preservation of national sovereignty. However, their effectiveness depends heavily on the quality of state institutions, the regulatory environment, and the political system's ability to strike a balance between openness and protection. The primary task in Ukraine is to modernise the institutional architecture and create a favourable environment for innovation. Only then can innovative governance tools become a sustainable foundation for the long-term economic security and competitiveness of the state, rather than an episodic resource for survival.

Keywords: public administration, European integration, financial security, economic stability.

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1. Introduction

The modern global environment is characterised by high levels of turbulence and rapid technological change. This makes economic security issues not only a strategic challenge for states, businesses and societies, but also a basic prerequisite for their survival. The increasing interconnectedness of global markets, intensified competition, and the potential hazards of financial crises, cyberattacks, energy and logistics disruptions collectively constitute a novel paradigm in which conventional management methodologies are exhibiting diminishing efficacy. In this reality, innovative management tools are a critical factor in strengthening economic security, as they allow for flexible responses to challenges, risk prediction, and the creation of sustainable development systems.

It is widely acknowledged that innovation constitutes a primary factor in the economic security and competitiveness of an enterprise. Indeed, it is conceivable that innovation may be considered a fundamental principle of financial success. It is the contention of researchers that the innovation management system constitutes an integral component of micro-level economic security, manifesting in two distinct forms. It is evident that the processes of introducing innovations into economic activity are directly related to additional economic risks. These risks have been shown to lead to a decrease in the overall level of economic security of the enterprise. Conversely, the absence of innovation can pose a substantial risk and threat to the enterprise (Lobunska, 2021).

The utilisation of innovative management tools is not only a factor in the competitiveness of individual enterprises, but also a key element of national economic security. In a global economy where the speed of technological change and fierce competition determine the conditions for development, the ability of the state to generate, implement and scale innovations becomes critically important. The effective management of innovation processes has been demonstrated to facilitate the creation of new products and services. Furthermore, it has been shown to enhance the economy's resilience to external shocks, strengthen technological sovereignty, and reduce dependence on imports of critical technologies.

The systematic use of modern methodologies and digital platforms for innovation management creates a national innovation ecosystem that drives labour productivity and export growth, increases investment attractiveness, and strengthens macroeconomic stability. In this context, innovative tools are a strategic resource that determines a country's economic security and long-term competitiveness, as well as being a means of business development.

Therefore, the problems of forming and implementing innovative management tools in the overall economic security system are an important research issue.

2. Innovative Management Tools: Evolutionary Development and Modern Classification

The seminal definition of innovation was formulated by Joseph Schumpeter, a founder of innovation theory. He defined innovation as the process of introducing a new product, implementing a new production method, or developing a new market (Schumpeter, 1982) and introduced the concept of 'creative destruction' through the prism of innovative development. J. Schumpeter (1939) noted that innovation and entrepreneurship lead to the destruction of old business models and the creation of new ones, which contributes to economic growth.

Contemporary researchers also define innovation as 'a dynamic process through which problems and challenges are identified, new and creative ideas are developed, and new solutions are selected and implemented' (Sorensen & Torfing, 2012). In summary, it is irrefutable that innovation is a process which engenders novel solutions, with the overarching objective of achieving economic growth, enhancing the competitiveness of systems at diverse levels, and augmenting the level of social welfare.

Different approaches to the driving forces and outcomes of innovation management systems in the private sector have been proposed by researchers (Idris & Durmusoglu, 2021; Kogabayev & Maziliauskas, 2017; Stroiko, Rekhteta & Burkun, 2023), as well as in the system of state-owned enterprises (Podgorniak-Ktzykacz, 2014). These approaches consider innovation management tools from the perspective of improving organisational and communication processes and services, and their efficiency.

In particular, Kelvin's (2020) research provides substantial evidence that standardised innovation management systems have a significant positive relationship with an organisation's innovation potential and business efficiency. Innovation management is commonly regarded as a fundamental driver of a corporation's competitiveness.

The most common definition of an innovation management system is that of a homogeneous management system which accelerates the transformation of an organisation's innovation strategy into effective actions (Adams, Bessant & Phelps, 2006). In summary, the utilisation of these tools by organisations facilitates the identification of novel areas of opportunity and the development of new competitive advantages.

In 2006, the Spanish Association for Standardisation and Certification (AENOR) approved the first national innovation management standard, UNE 166002:2006. (Idris & Durmuşoğlu, 2021). This document set out a system of principles intended to help organisations streamline their innovation processes, boost efficiency, and ensure effective management from idea generation to commercialisation. Similar approaches have been developed in other countries. The BS 7000-1:2008 standard was developed in the United Kingdom (first published in 1989), and a number of countries adapted the Spanish model to suit their own needs: These include Portugal (2007), Mexico (2008), Brazil (2011) and Denmark (2010).

In addition to established standards, there has been a notable adoption of flexible and creative methodologies for managing innovation activities. These include Lean Startup (a process of rapid testing of business hypotheses), Design Thinking (an approach that prioritises user needs), Agile (an approach to adaptive project management), Open Innovation (the integration of external knowledge sources), TRIZ (a systematic approach to solving technical problems), and Design Sprint (a method of accelerating the testing of solutions). These approaches are utilised both independently and in complementary combinations with the objective of stimulating innovative development and enhancing the efficacy of management decisions.

Based on a monographic analysis, a generalised description of innovation management tools can be presented.

Modern innovation management tools serve as a comprehensive platform for organisations seeking to establish a systematic process for moving from the conception of an idea to the creation of real economic value. These tools facilitate the generation of ideas, the establishment of priorities, the selection and implementation of promising solutions, and the monitoring of the impact of innovation on the enterprise's activities.

3. Innovative Management Tools and Economic Security: Complementarity and Contradictions

Innovative management tools represent a pivotal resource that underpins the economic security of the state. The implementation of these measures has been demonstrated to facilitate the attainment of technological sovereignty, enhance the stability of the national economy, and confer a competitive advantage in global markets. The International Liberty Institute defines national economic security as "a state of the economy in which economic actors operate under the rule of law, respect for property rights, economic freedom, and a competitive monetary, financial, tax, customs, and regulatory environment in a regional and global context" (International Liberty Institute, 2024, p. 33).

Table 1
Description of innovation management tools

Purpose of the tool	Characteristics	Tools	Expected result
Idea generation tools	Methods and platforms that facilitate the creation of new concepts, both within the organisation and with the involvement of external sources	Crowdsourcing platforms, hackathons, brainstorming, trend watching, the SCAMPER method	Increase in the number and variety of innovative ideas
Selection and prioritisation tools	Methods for evaluating, filtering and ranking ideas based on feasibility, potential and risk criteria	Automated evaluation systems, multi-criteria matrices, expert evaluation, business modelling (Business Model Canvas)	Selection of the most promising ideas for implementation
Innovation portfolio planning and management tools	Systems for coordinating and controlling the implementation of several innovation projects simultaneously	Portfolio management (Innovation Portfolio Management), Balanced Scorecard, Gantt Chart, Kanban	Optimal resource allocation, balance of risks and profitability
Innovation implementation tools	Methodologies and frameworks for implementing selected solutions	Agile, Scrum, Lean Startup, Design Sprint, TRIZ	Accelerated implementation and adaptation of innovative products and processes
Tools for monitoring and evaluating effectiveness	Systems for tracking progress, impact and economic effect of innovations	Innovation KPIs, innovation ROI, innovation accounting, analytics dashboards	Increasing transparency and manageability of the innovation process
Scaling and integration tools	Mechanisms for expanding successful innovations to larger market segments or other industries	Technology licensing, franchising, strategic alliances, open innovation	Market share growth and increased economic impact

Source: compiled by the authors based on Idris & Durmuşoğlu (2021); Kelvin (2020); Ukraine Startup Ecosystem (2025)

However, innovation and security do not always coexist harmoniously; sometimes they conflict. The main task of this research is to strike a balance between "complementarity" and "contradictions", and to explore the possibility of introducing innovative management tools into the overall economic security system.

On the one hand, innovation acts as an engine of growth, ensuring economic stability. It can facilitate collaboration between the government, academia, and businesses, fostering synergy and mitigating the unpredictability of the innovation process (Leydesdorff & Ivanova, 2016). In other words, when public and private institutions, along with the entire public administration system, work together, the country can compensate for its technological dependence and build internal economic security. Innovative management tools enable the state to achieve a high level of technological autonomy, which is indicative of the nation's economic security and cultural stability.

Conversely, innovation and innovative tools can create new challenges and threats to a state's economic security. The pursuit of innovation may not consider social equality, the protection of private information or environmental safety. Digital tools, for example, can violate privacy, increase energy consumption, and exacerbate inequality. In the absence of regulatory policy, economic innovation can threaten national security principles.

It has been proven that it is impossible to completely avoid innovation-related threats, since innovation and risk are interrelated. The modern business environment is characterised by high levels of dynamism, uncertainty and multifactorial influences. This forces companies to continuously improve their management decisions in order to ensure their own economic security (Pravdyvets, 2021).

A key aspect of this process is the systematic analysis and comprehensive assessment of performance. The choice of specific management methods and the tools used to implement them depends on strategic goals, the nature of risks and whether the aim is to influence the internal environment at the macro/micro level or adapt to external challenges.

Innovative management tools enable the combination of traditional analytical approaches with new methodologies, such as big data analytics, machine learning for risk forecasting and agile frameworks that ensure a rapid response to market changes. Using these tools increases the accuracy of management decisions and creates conditions for integrating economic security into everyday operations at state and company levels.

Concurrently, the implementation of innovative approaches may yield unintended consequences that are paradoxical in nature. Digital platforms and automated management systems facilitate expedited

information processing and diminished transaction costs; nevertheless, they concomitantly engender novel risks, including cyber threats, data leaks, and reliance on external technology providers. Consequently, the pursuit of innovation frequently necessitates augmented expenditure on information system protection, thereby engendering a dilemma between economic efficiency and security.

The issue of regulatory compatibility is also important: in many countries, government innovation policy is aimed at supporting entrepreneurship, but at the same time tightens control in the areas of personal data protection, financial monitoring and environmental responsibility. This engenders a scenario in which the implementation of innovative solutions intended to enhance competitiveness may encounter discord with the stipulations outlined by government security policy.

Consequently, innovative management tools and economic security complement each other, thereby enabling companies to enhance their resilience and expedite their ability to adapt to challenges. However, this interaction inevitably gives rise to contradictions that require strategic balancing – between efficiency and protection, between openness to global technologies and the preservation of national economic sovereignty.

4. Ukraine's Case in Applying Innovative Management Tools as the Basis for National Economic Security

Notwithstanding the ongoing war and considerable economic turbulence, Ukraine has exhibited remarkable internal fortitude, thereby establishing the basis for fortifying national economic security through the implementation of innovative management instruments. In 2024, Ukrainian startups attracted a record amount of 1.8 billion USD, which is 50% more than in the previous year. The most active sectors were fintech (700 million USD), agritech (300 million USD), AI (200 million USD) and green tech (200 million USD) (Ukraine Startup Ecosystem, 2025). It is evident that Ukraine is demonstrating active innovative development even in the context of war. The use of innovative management tools is becoming increasingly not only an element of business competitiveness but also an important component of the state's economic security strategy. In the context of prevailing military and global challenges, the nation is compelled to explore novel development models that emphasise flexibility, technological autonomy, and the capacity to seamlessly incorporate contemporary solutions into economic processes.

This paper examines the main areas in which innovative management tools are actively used in the context of Ukraine's economic security:

1. **Digital management tools.** The development of the digital ecosystem "Diia" is an example of the large-scale digitalisation of management processes. This increases the efficiency of interactions between businesses and the state while creating conditions that foster transparency and reduce corruption risks, thereby promoting economic stability. In the context of military operations, the ecosystem also protects basic services and ensures that management decisions are available even in crisis situations.

2. **Introduction of open innovation and crowdsourcing in the fields of security and defence.** For example, the "Drone Army" was developed by combining state resources, private innovative companies, and volunteer initiatives. This clearly demonstrates how open innovation tools can enhance national security by mobilising the knowledge and technologies of different stakeholders.

3. **The spread of agile methodology, lean startup and design thinking** in the Ukrainian business ecosystem, which are particularly actively used by IT companies, startups and export-oriented enterprises. This allows for rapid entry into international markets and reduces dependence on traditional sectors of the economy that are vulnerable to global shocks. Therefore, innovative approaches are becoming an important factor in diversifying the economy and, consequently, ensuring the country's economic security.

4. **The use of portfolio management of innovations** in large infrastructure projects and planned reconstruction projects. This strikes a balance between short-term decisions aimed at rapid economic recovery and long-term strategic initiatives that lay the groundwork for future growth.

Ukraine's experience demonstrates that innovative management tools not only improve business efficiency, but also effectively contribute to the economic security of the state. Integrating them into the national strategy enables the country to counter external threats, ensure technological development and establish a competitive economic model amid global turbulence. However, alongside these positive developments, Ukraine is facing a significant number of challenges in the area of economic security.

In 2024, the International Liberty Institute (Kyiv, Ukraine) presented a study entitled 'The Concept of National Economic Security of Ukraine' (International Liberty Institute, 2024), which was based on an economic security index. This index was developed by the Institute's experts and is comprised of quantitative, qualitative, and sociological indicators, which are grouped into eight categories: legal and institutional; macroeconomic; monetary and financial; tax and budgetary; regulatory; infrastructure; social; and intangible. All indicators are included in the Economic Security Index of Ukraine and are collectively assessed

on a scale from "0" to "100", forming four groups of countries:

- First group (0 – 25 points). Unsatisfactory quality of the indicator/parameter or 'red danger level' according to the risk colour coding.
- Second group (from 25,1 to 50 points). Low quality of the indicator/parameter or 'orange danger level' according to the risk colour coding.
- Third group (50,1–70 points). Satisfactory quality of the indicator/parameter or "yellow danger level" according to the risk colour coding system.
- Fourth group (70,1–100 points). High quality of the indicator/parameter or "green danger level" according to the risk colour coding.

According to this index, Ukraine received a score of 35.2 points in 2024, corresponding to an orange danger level. What conclusions can be drawn from this rating? The quality of Ukraine's public administration institutions, their functionality and mode of operation are such that they do not permit high, long-term economic growth and development, nor do they facilitate the creation of a strong material and technological base for the country's independent military defence capability.

Ukraine is currently facing a variety of global challenges and threats, requiring the development of a new national economic security architecture. In order to achieve this, it is essential to establish a competitive manufacturing sector, adopt modern technologies, integrate into global and regional value chains, and foster the development of human capital. An effective security system should be developed based on an analysis of risk maps at global and European levels. This should take into account errors and weaknesses in economic policies in other countries.

The state of public administration institutions, the effectiveness of macroeconomic and regulatory policies, and business access to finance, resources and infrastructure are of particular importance. The rapid and multi-vector changes in the global economy require significant renewal of state institutions because the old Ukrainian model often became a risk factor for sustainable growth itself. The excessive concentration of political and economic power in the hands of the state has resulted in a regulatory, tax and legal environment that is significantly disadvantaged in international competition.

Consequently, Ukraine remains one of the poorest countries in Europe, characterised by low labour productivity, limited investment attraction and insufficient integration into global trade. This vulnerability is further compounded by significant security risks that endanger the lives, health and property of citizens.

Thus, economic security is interpreted as a state in which businesses and citizens can operate within a stable legal environment that protects property

rights and freedom of economic activity. This environment should be comparable to the best global practices in terms of its financial, tax and regulatory aspects.

The main threats to economic security are both internal and external. External threats are associated with actions taken by foreign actors against Ukrainian producers. These require professional diplomacy, the formation of a positive international image, and the development of "soft power" through culture and civil society. Internal risks stem from the decisions and actions of political and economic agents, leading to increased production costs, reduced economic freedom, decreased productivity and a deteriorating investment climate.

5. Conclusions

To conclude this study, it can be argued that contemporary innovative management tools function not only as a means of enhancing the efficiency of individual enterprises, but also as a strategic resource for ensuring national economic security. In conditions of global turbulence, rapid technological transformations and military challenges, innovations are identified as a key condition for the stability of economic systems, their ability to adapt to changes and form long-term competitive advantages.

Firstly, the analysis confirmed the close relationship between innovations and economic security at different levels. For enterprises, innovations are both a source of additional risks and an inevitable condition for maintaining competitiveness. The absence of innovation over time can metamorphose into a strategic threat, thereby diminishing the resilience of a business to external shocks and eroding its position in the market. For the state, innovative development is defined by increased productivity, augmented export potential, enhanced investment attractiveness and fortified technological sovereignty. It is evident that these parameters exert a direct influence on the state of economic security.

Secondly, the study showed that innovation management tools evolve in two ways. On the one hand, there is the standardisation and

formalisation of processes. Examples of this include UNE 166002:2006 (Spain), BS 7000-1:2008 (Great Britain), and other national models. Conversely, it is the adoption of flexible methodologies such as Agile, Lean Startup, design thinking, Open Innovation, TRIZ and Design Sprint that enables organisations to respond swiftly to environmental changes and operate in an uncertain environment. Together, these approaches create a powerful toolkit that strikes a balance between structure and adaptability.

Thirdly, an analysis of innovation tools revealed their comprehensive coverage of all stages of the innovation life cycle, from idea generation to scaling and integration. Consequently, a closed management cycle is established, thereby enhancing transparency and effectiveness in innovation activities.

Fourthly, innovations have been demonstrated to contribute to the strengthening of national resilience, human capital development, and integration into global value chains. Conversely, these technologies have the potential to engender novel risks, including cyber threats, information leaks, social inequality, environmental degradation, and reliance on external technology providers. The development of a balanced state policy that combines support for innovative activity with the formation of reliable mechanisms of regulation and control is required.

Consequently, the utilisation of innovative management tools is imperative for ensuring national economic security. These factors enable the harmonious coexistence of growth and adaptability, technological progress and increased resilience, and global integration and the preservation of national sovereignty. Nevertheless, the efficacy of these measures is contingent upon the quality of state institutions, the regulatory environment, and the capacity of the political system to maintain a balance between transparency and protection. In Ukraine, the primary task is to modernise the institutional architecture and create a favourable environment for innovative development. It is only in such conditions that innovative management tools can evolve from a mere means of survival into a stable foundation for the economic security and competitiveness of the state in the long term.

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