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MAPPING AND ASSESSING THE REGIONAL STARTUP ECOSYSTEM OF UKRAINE TO IDENTIFY OPPORTUNITIES

Abstract

These theses present the results of an analytical review of the development of Ukraine's startup ecosystem in 2021–2025, with a focus on its regional specificities, resilience, adaptability, and growth opportunities. The study was conducted by the Knowledge Valorization Centre (KVC) of University "Ukraine" with the involvement of KVC experts, mentors, and student project teams. Special attention is given to inclusive approaches in developing entrepreneurial competencies and ensuring the accessibility of innovation infrastructure for all groups of learners.

The purpose of this analytical review is to provide a comprehensive assessment of the development of Ukraine's startup ecosystem during 2021–2025 and to identify key trends, structural shifts, challenges, and opportunities shaping the country's innovation landscape.

The review covers investment activity, innovation infrastructure, human capital dynamics, government support, sectoral structure, and adaptive mechanisms demonstrated by startups under the conditions of full-scale war. Particular attention is paid to assessing ecosystem resilience, recovery rates after 2022, emerging growth zones, and factors that either stimulate or hinder innovation-driven development. The analysis focuses on the national startup ecosystem while accounting for regional specificities and differences across major innovation hubs.

The geographical scope includes key technological and business hubs representing the regional innovation landscape:

- **Kyiv** – the leading innovation center (UNIT.City, Sector X, etc.) with the highest concentration of startups and IT companies;
- **Lviv** – one of the most dynamic clusters with a strong IT sector and rapidly expanding tech ecosystem;
- **Kharkiv** – a major engineering and technology center significantly affected by the war;
- **Dnipro and Odesa** – important regional hubs with active IT companies, R&D centers, and growing startup communities.

The review also considers the relocation of Ukrainian startups to EU countries in 2022–2023 and the formation of Ukrainian innovation diasporas abroad, which intensified the transnational dimension of the ecosystem.

The Ukrainian startup ecosystem in 2021–2025 demonstrates several structural characteristics: high pre-war growth dynamics; a developed innovation infrastructure; significant disruption due to the full-scale war (2022–2023); strong resilience and rapid recovery; and high investment efficiency. This period became one of the most challenging yet simultaneously one of the most dynamic in the ecosystem's history.

Analytical Overview of Ukraine's Startup Ecosystem (2021–2025). The review shows that Ukraine's startup ecosystem underwent significant transformation caused by strong pre-war expansion, severe wartime challenges, and remarkable resilience during recovery.

In 2021, Ukraine had more than 2,000 technology startups that attracted over $780 million in investment, particularly in IT outsourcing, artificial intelligence, fintech, cybersecurity, and gaming. Innovation infrastructure expanded through UNIT.City, Lviv Tech Cluster, Kharkiv IT Cluster, and accelerators such as Sector X, Startup Wise Guys Ukraine, and Radar Tech. Government initiatives — including the launch of Diia.City — strengthened the regulatory environment for digital business and increased market confidence (UVCA, 2021).

The full-scale invasion in 2022 created unprecedented challenges. Around 120,000 highly qualified professionals left the country, intensifying the "brain drain" and limiting human capital (UVCA, 2023). Investment activity slowed, some programs were suspended, and many startups relocated temporarily or permanently to safer regions of Ukraine or the EU. Despite this, the ecosystem

demonstrated strong resilience: over 70% of startups continued operations during the war, showing adaptability under uncertainty, logistical disruptions, and infrastructure damage (StartupBlink, 2024).

By 2023, the ecosystem entered a phase of recovery and scaling (Google for Startups, 2023). More than 2,600 startups were active, and the total value of the tech sector tripled compared to 2020 (Ministry of Digital Transformation, 2024). The share of IT in GDP continued to grow, and IT service exports reached $6.7 billion — 41% of total service exports. Ukraine rose to 46th place in the global StartupBlink ranking, reflecting growing international recognition (Brave1, 2024).

Sectoral diversification accelerated: defense tech (drones, reconnaissance systems, battle management systems), cybersecurity, logistics technologies, and healthtech grew rapidly. Ukrainian defense tech became one of the most notable emerging sectors globally (Dealroom, 2024).

Forecasts by UVCA, the Ministry of Digital Transformation, and StartupBlink for 2025 predict further expansion of defense tech, increased interest from Western investors, continued development of Diia.City, improved access to European innovation and grant programs, and deeper integration into European technology value chains. The ecosystem's sustained adaptability indicates significant potential for further development even under prolonged instability.

Data analysis provides insight into the overall condition and dynamics of the ecosystem. A SWOT analysis synthesizes findings and incorporates insights from stakeholder workshops. It identifies strengths (e.g., strong universities), weaknesses (e.g., lack of early-stage funding), opportunities (emerging technological trends), and threats (unstable regulatory environment).

A significant contribution to the development of digital and entrepreneurial competencies within the initiative is the implementation of student projects under the IMPACT-Campus program. Research groups led by students Serhii Kurnakov, Adelina Dolina, Dasha Kasianchyk, and Iryna Romanchuk presented project concepts demonstrating practical application of artificial intelligence tools, digital platforms, and entrepreneurial thinking — fully aligning with the goals of AI-driven educational innovation.

An additional element of the broader ecosystem is a project by Mykola Talanchuk, Oleksandra Dubas, and Yulia Povovych, bachelor's students in Management, who developed the Ukrainian Freelance Framework, a digital platform inspired by the Upwork model. The platform connects Ukrainian professionals with global clients, ensuring transparent ratings, secure payments, cultural and language support, and direct work without intermediaries. Targeting SMEs and startups in Europe and the USA, the solution enhances the competitiveness of Ukrainian talent, expands mobile accessibility, and integrates with social networks — strengthening Ukraine's digital economy and expanding international opportunities for Ukrainian specialists.

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A deeper analysis of gaps and bottlenecks demonstrates insufficient support in several areas: a shortage of qualified personnel, the absence of "missing middle" funding, and a lack of experienced mentors. Benchmarking against international methodologies (Startup Genome, OECD) provides an external assessment of competitiveness.

The assessment helps identify practical opportunities for new initiatives. Priority is given to those that close critical gaps or strengthen unique competitive advantages. For example, if experienced mentors are lacking, a structured mentorship program is developed.

Following the identification of priorities, an action plan is formed, including objectives, resources, success metrics, and engagement tools (workshops, networking, corporate innovation challenges). To ensure effectiveness, a feedback mechanism is implemented: regular reviews, evaluation of outcomes, startup success tracking, analysis of investment attraction, and feedback from mentors and mentees.

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