

Платформа 3. СТАЛЕ ПІДПРИЄМНИЦТВО ТА СОЦІАЛЬНА ВІДПОВІДАЛЬНІСТЬ: НОВІ ГОРИЗОНТИ ПІДПРИЄМНИЦЬКОЇ ОСВІТИ

UDC 330.341.1:502.131.1

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INTERNATIONAL EXPERIENCE IN DEVELOPING INNOVATIVE PARTNERSHIPS IN THE CIRCULAR ECONOMY

The transition from a linear to a circular economy is one of the most pressing global transformations aimed at achieving sustainable development. This paradigm involves minimizing waste, maximizing resource utilization, and regenerating natural systems [2]. However, the complexity and multifaceted nature of this transition require not only technological innovations but also a profound change in business models, policies, and public awareness. In this context, innovative partnerships play a critically important role, combining diverse knowledge, resources, and competencies to create new solutions and systemic changes.

Innovative partnerships in the circular economy can be considered a form of collaborative innovation, where various actors work together to develop and implement new products, processes, or business models that promote circularity. This can include cooperation in the areas of: Research and Development (R&D), i.e., joint projects for the development of new materials, processing technologies, or methods to extend product life cycles; Creation of new business models – development and implementation of service-oriented models (Product-as-a-Service), reverse logistics systems, platforms for resource exchange; Ecosystem formation – creation of industrial symbioses where the waste of one enterprise becomes a resource for another; Regulatory framework – joint work on developing stimulating policies and standards. Literature emphasizes that successful partnerships are based on shared values, trust, transparency, and a clear distribution of roles and responsibilities [3]. Moreover, innovative partnerships promote collective learning and knowledge sharing among participants, which is vitally important for accelerating systemic changes. Analysis of international experience reveals a variety of approaches to forming innovative partnerships in the circular economy.

The European Union is a leader in promoting the circular economy, where innovative partnerships are a cornerstone of the strategy. In the Netherlands, the country actively develops industrial clusters and industrial symbioses, where companies exchange by-products and energy. An example is the Chemelot Industrial Park, where various chemical enterprises are integrated into a single network, minimizing waste and consumption of resources [1]. The government actively supports such initiatives through grants and tax incentives, as well as promotes networking. In Denmark, Kalundborg Symbiosis successfully operates, one of the oldest and most famous examples of industrial symbiosis. Here, companies from various industries (energy, pharmaceuticals, gypsum board production) exchange water, energy, and materials. This success is based on long-term trusting relationships and clear economic benefits for each participant.

Partnerships here are often the result of private initiative, but are supported by a favorable regulatory framework. Finland actively implements national roadmaps for the circular economy, which involve cross-sectoral cooperation. The Sitra's Circular Economy KICK-OFF project is an example of an initiative that brings together startups, large companies, and investors to develop circular solutions [5].

Asian countries, particularly China and Singapore, demonstrate growing interest in the circular economy, often with strong state support. In China, the government actively promotes eco-industrial parks and encourages enterprises to transition to circular models. Partnerships are often formed within the framework of state programs that involve joint research and development between universities, research institutes, and industrial enterprises. This allows for rapid scaling of innovative solutions. Singapore positions itself as a "green" hub, actively investing in R&D and startups specializing in circular economy technologies. Partnerships between the government, the private sector, and academic institutions are key to the development of innovative solutions in the areas of recycling waste, water purification, and renewable energy sources (National Research Foundation [4]).

In North America, especially in the USA and Canada, corporate initiatives and a dynamic startup ecosystem dominate. In the USA, many large corporations (e.g., Dell, Nike) actively invest in the development of circular products and business models through internal innovation laboratories and partnerships with startups. This includes cooperation with companies specializing in recycling secondary raw materials or developing new materials. Universities also play a significant role, performing custom research for business. Canada focuses on the development of circular innovations in specific sectors, such as agriculture and forestry, where partnerships between farmers, researchers, and processing enterprises help optimize resource use and reduce waste [6].

Analysis of international experience allows for the identification of key success factors and typical barriers in forming innovative partnerships. Factors of success include: clear vision and common goals, as partners must have a common understanding of circular economy goals and their role in achieving them; trust and transparency – a high level of trust between participants is fundamental for successful cooperation; mutual benefit – each participant in the partnership must see clear economic, environmental, or social benefits from cooperation; government support – financial incentives (grants, tax breaks), a favorable regulatory environment, and policies that promote circularity are critically important; access to knowledge and technologies – the ability to exchange knowledge, expertise, and technologies accelerates innovative processes; the presence of intermediaries (facilitators) – organizations or individuals who help establish connections, manage projects, and resolve conflicts, are very valuable; scalability – projects must have the potential for scaling to generate significant impact.

Among the barriers, one can distinguish: lack of trust and conflicts of interest – inability to agree on common goals or the distribution of benefits can destroy the partnership; insufficient funding – high initial investments and a long payback period can hinder innovative projects; regulatory complexity – legislative and regulatory barriers can complicate the implementation of new circular models; lack of awareness and knowledge – insufficient understanding of circular economy principles and the benefits of partnerships can be an obstacle; technological challenges – the need to develop new recycling technologies or create new materials can be a complex task; resistance to change – existing business models and established practices may resist the transition to circularity. Ukraine is on the verge of large-scale economic and environmental transformations, and

the transition to a circular economy is strategically important for its sustainable development and European integration [7].

Considering international experience, the following recommendations can be formulated regarding the development of innovative partnerships:

- Development of a National Circular Economy Strategy with an emphasis on partnerships: the strategy should clearly define the role of innovative partnerships and provide mechanisms for their support. This includes creating roadmaps for key sectors of the economy;
- Stimulation of the creation of industrial clusters and eco-industrial parks: the government should provide financial and tax incentives for companies that unite to create industrial symbioses;
- Financial support and investments: creation of special funds, grant programs, and "green" investment mechanisms for circular economy projects implemented through partnerships;
- Strengthening cooperation between science, business, and government: creation of platforms for knowledge exchange, conducting joint R&D projects, involving scientific institutions in the development of practical circular solutions;
- Development of competencies and increasing awareness: introduction of educational programs on the circular economy at all levels, conducting information campaigns for business and the population;
- Simplification of the regulatory environment: review and adaptation of the legislative base to eliminate barriers and create incentives for circular business models. This may include simplifying licensing for recycling enterprises and waste disposal;
- Attracting international partners and experience: Use of international technical assistance programs and exchange of experience with countries that have already achieved significant success in the circular economy.

Thus, innovative partnerships are an integral element of a successful transition to the circular economy. International experience demonstrates that effective cooperation between government, business, scientific institutions, and civil society allows us to overcome existing barriers, generate new ideas, and accelerate the implementation of circular solutions. For Ukraine, which seeks to integrate into the European and global circular future, the development of such partnerships is a key priority. Through targeted policies, financial support, and stimulation of trust and cooperation, Ukraine can create a favorable environment for the flourishing of circular innovations and the achievement of ambitious goals for sustainable development during the period of post-war recovery.

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