



# **HELIX MODELS AS A METHODOLOGICAL BASIS FOR ORGANISATIONAL AND ECONOMIC SUPPORT OF INNOVATIVE ENTREPRENEURSHIP**

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# Problem statement

This presentation aims to provide a theoretical justification for the use of helix models as a methodological basis for the organisational and economic support of innovative entrepreneurship in the context of integration into the European space.



# Evolution of Helix Models

The Helix models address the limits of traditional linear innovation systems by emphasizing collaboration across different sectors.

The Triple Helix model (1990s) unites universities, business, and government. Universities take an active role in innovation, governments provide regulation and support, and businesses focus on commercialization.

The Quadruple Helix (2000s) adds civil society—media, NGOs, and cultural organizations—making innovation more socially relevant.

The Quintuple Helix (2010s) includes the natural environment, integrating sustainability and green transition goals.

This evolution reflects a shift toward innovation that balances economic growth, social impact, and environmental responsibility.



## Core Differences Between Models

| Model              | Main subjects of interaction               | Focus of interaction                                 | Integration level | Examples of application in the EU                                 |
|--------------------|--------------------------------------------|------------------------------------------------------|-------------------|-------------------------------------------------------------------|
| Triple Helix       | Universities –<br>Business –<br>Government | Innovation and<br>commercialization of<br>knowledge  | Institutional     | S3, regional innovation<br>strategies                             |
| Quadruple<br>Helix | Triple Helix + Civil<br>society            | Social relevance of<br>innovations                   | Social            | Horizon Europe, Interreg,<br>Cultural projects                    |
| Quintuple<br>Helix | Quadruple Helix +<br>Natural environment   | Sustainable development,<br>environmental innovation | Ecosystem         | Green Deal, Innovative<br>policies for sustainable<br>development |



## Practical Application in the EU

In the EU, helix models underpin Smart Specialisation Strategies (S3), fostering regional innovation through cooperation among four or five key actors. They are applied in regions such as Catalonia (Spain), Eastern Finland, Łódź Province (Poland), and South Moravia (Czech Republic).

These models are embedded in programmes like Horizon Europe, Interreg, Erasmus+, and Digital Europe, where they guide the creation of consortia, stakeholder engagement, and policy development. Projects such as RRI2SCALE and TeRRItoria connect universities, businesses, governments, and civil society to build sustainable innovation systems.

Interreg and Erasmus+ initiatives further support regional clusters, entrepreneurial education, and environmental awareness, aligning with the Quintuple Helix concept. Overall, helix models provide a practical framework for digital transformation, the green transition, and strengthening SMEs within European innovation ecosystems.



## Conclusions

It is evident that Helix models of interaction constitute an effective tool for the organisational and economic support of innovative entrepreneurship. These mechanisms facilitate overcoming fragmentation in the interaction between science, business, government, and society. Their practical significance is confirmed by their widespread implementation in EU programmes, which opens up new prospects for Ukrainian enterprises in the context of European integration. It is recommended that future research endeavours concentrate on the development of models for adapting helix structures to the national business environment, with a view to expanding their application in SME development policies.

**Thank you for your  
attention!**

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