



## Beyond Individual Projects:

# Odesa Polytechnic National University as a Hub for the Development of Transdisciplinary R&D Clusters

### Transdisciplinary R&D Initiative Architecture



Odesa Polytechnic National University

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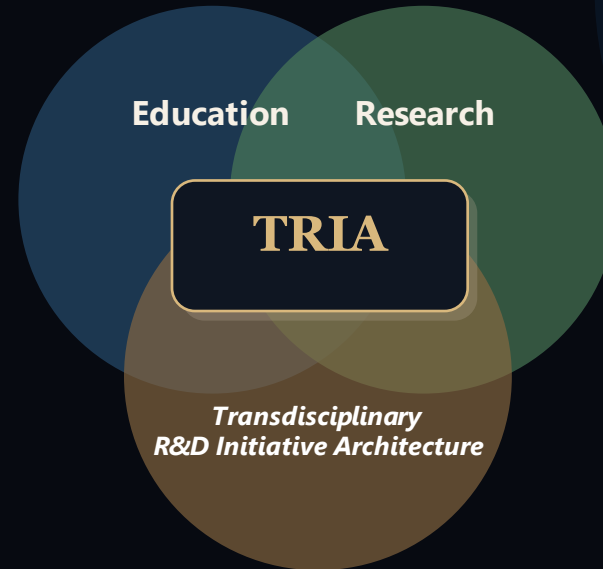
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# Beyond Individual Projects

Odesa Polytechnic National University  
as a Hub for the Development of  
Transdisciplinary R&D Clusters



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Earth System Science · Artificial Intelligence · Innovation Ecosystems



# The Structural Crisis of Project-Based Universities

## Fragmentation

Isolated projects  
No accumulation  
Duplication

## Short-Termism

Funding cycles  
No continuity  
Reactive logic

## Disconnection

Education  $\neq$  Research  
Research  $\neq$  Innovation  
Weak integration



**Institutional Instability**

*Project-driven logic → Loss of systemic capacity*



# Why Projects Do Not Accumulate

## Broken Logic

Project 1 → output  
Project 2 → output  
Project 3 → output

(no connection)

- ✗ Fragmented results
- ✗ No continuity
- ✗ No system formation

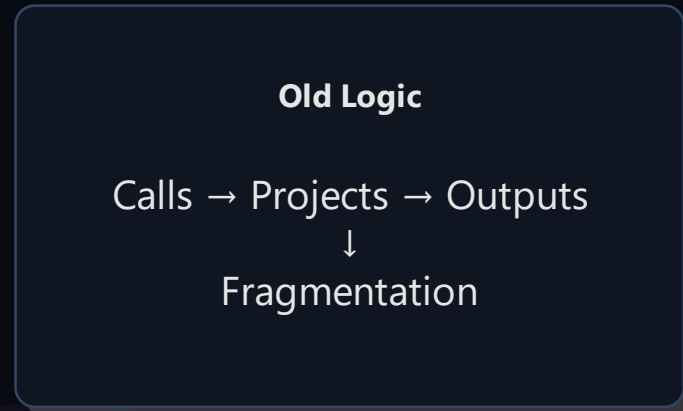
## Desired Logic



- ✓ Accumulation
- ✓ Structural memory
- ✓ Scalability



# From Projects to Initiatives



STRUCTURAL TRANSFORMATION





# TRIA Model: Conceptual Definition

## Acronym

T — Transdisciplinary integration  
R — R&D ecosystems  
I — Initiative-driven structures  
A — Institutional architecture

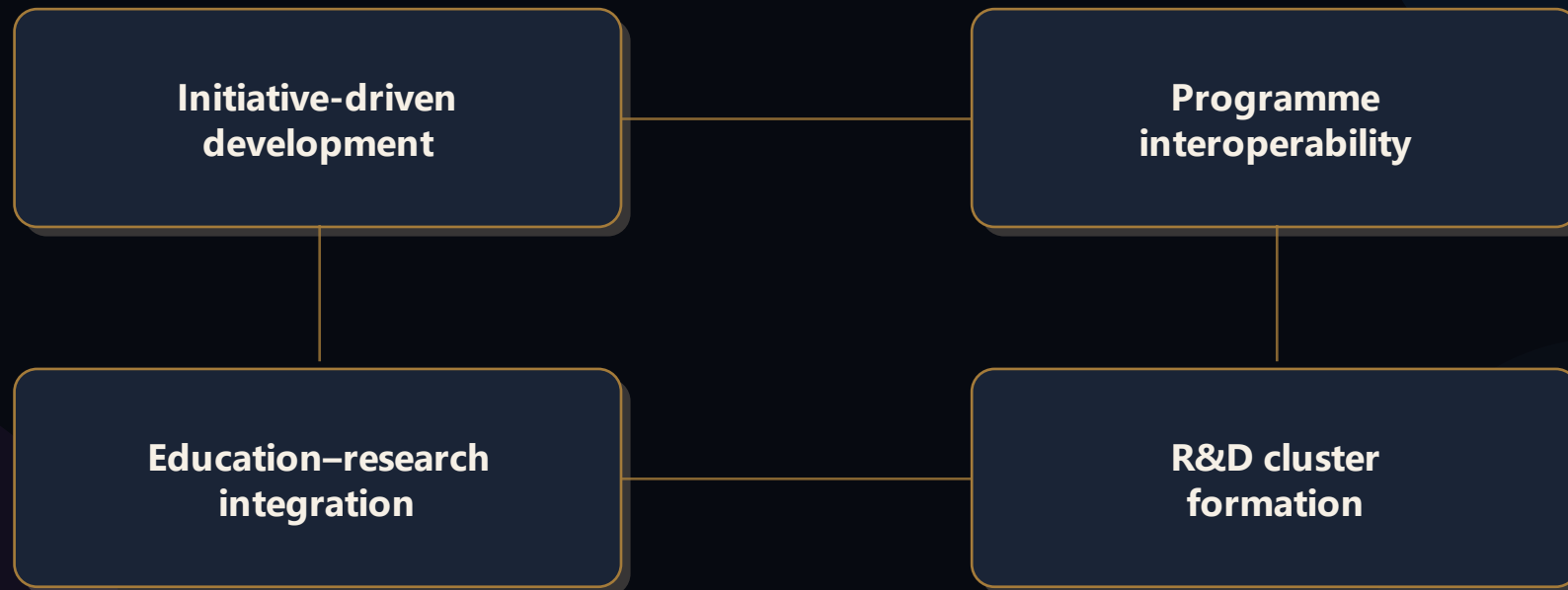
## Definition

Institutional architecture for organising global research initiatives, project ecosystems, and transdisciplinary R&D clusters



# TRIA as an Operating System

## Interdependent Principles



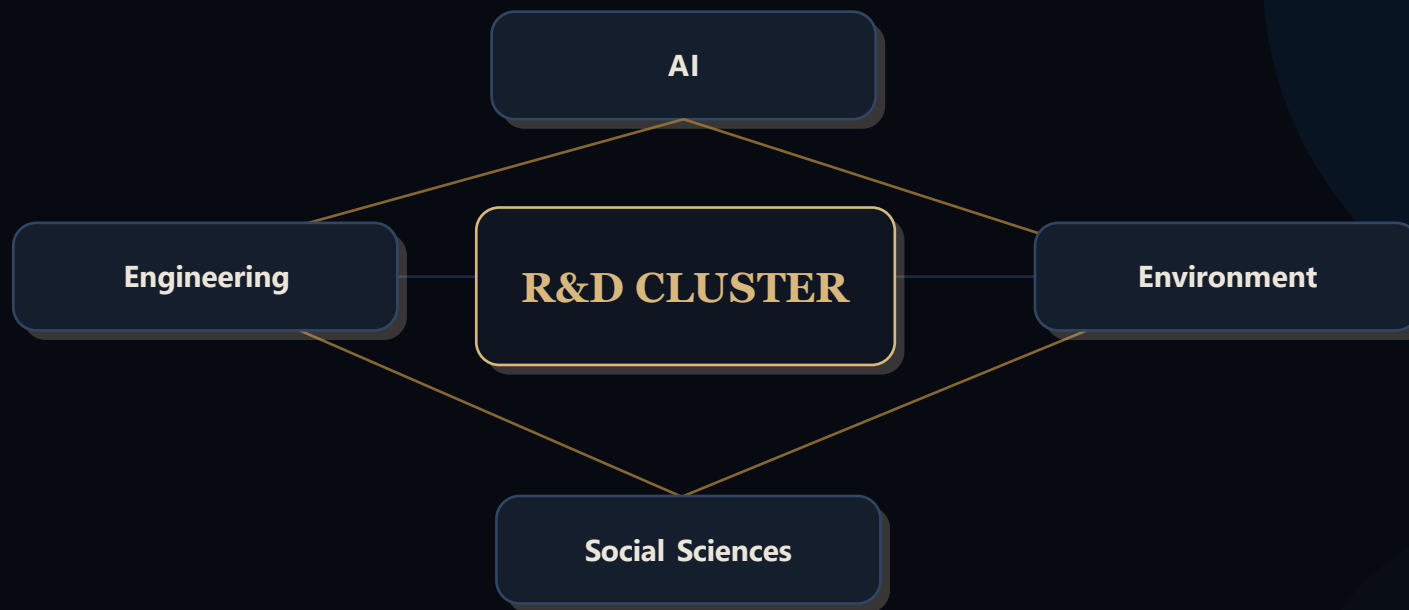


# Initiative as a Generative Structure





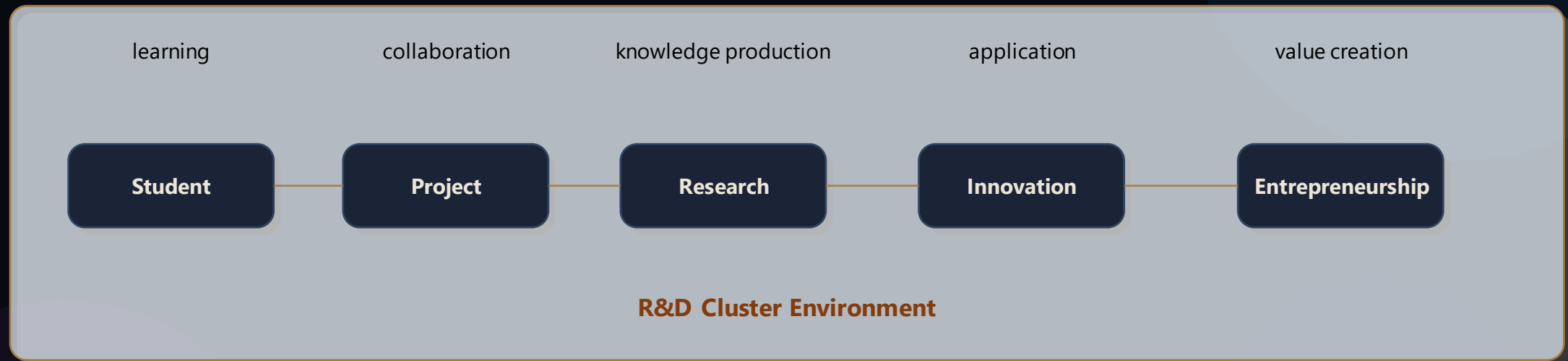
# R&D Clusters as Structured Ecosystems



- Data exchange
- Joint research
- Technology development
- Societal application



# Embedding Education into R&D Clusters





# Operationalisation: TRIA Initiative Portfolio

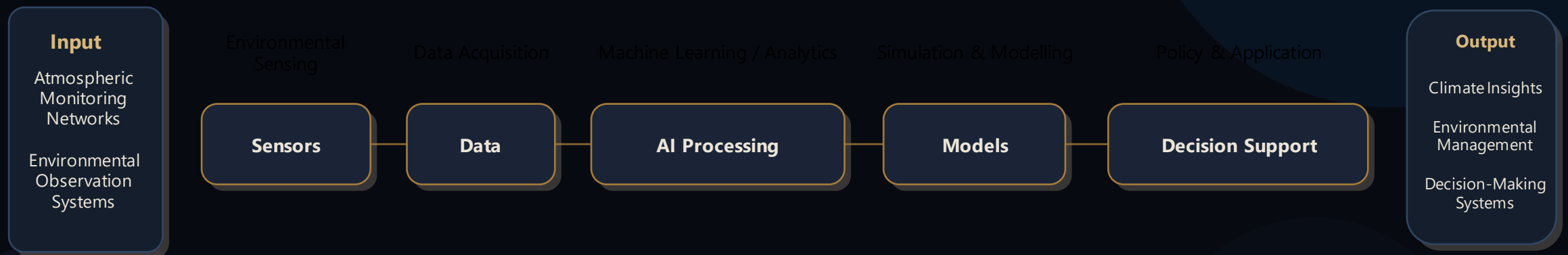
Domain	Strategic Initiative	Focus
Cyber-Physical Systems & Robotics	SACPS, AICSAR	intelligent systems, robotics
AI & Data Analytics	AIDAQ	AI, data, quantum-inspired computing
Environmental Monitoring	AQAM-UR, AQAM-CE	atmospheric observation systems
Energy & Infrastructure	SERLI-SI	sustainable systems, smart infrastructure
Innovation Ecosystems	IREE-FT	future technologies, innovation platforms
Responsible AI & Governance	ATARI	ethics, governance, policy
Sustainability & Education	SUST-INC, CLIMGOV	higher education transformation

## System logic



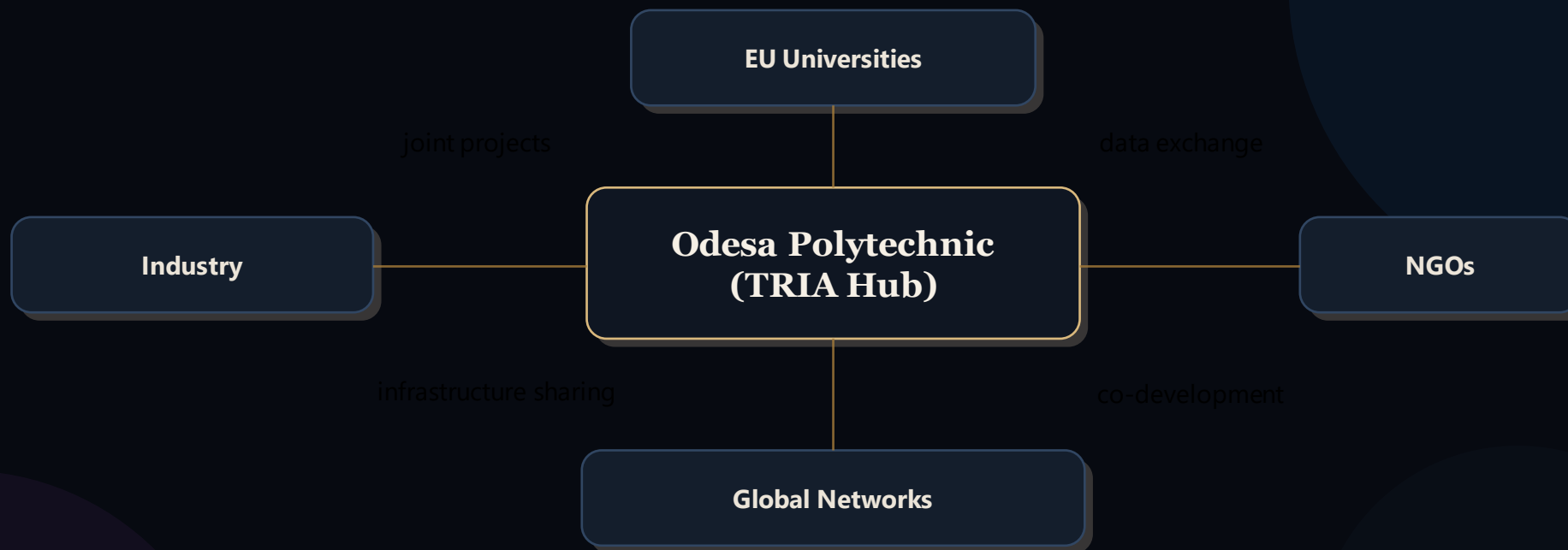


# Earth System Science as a Convergence Domain





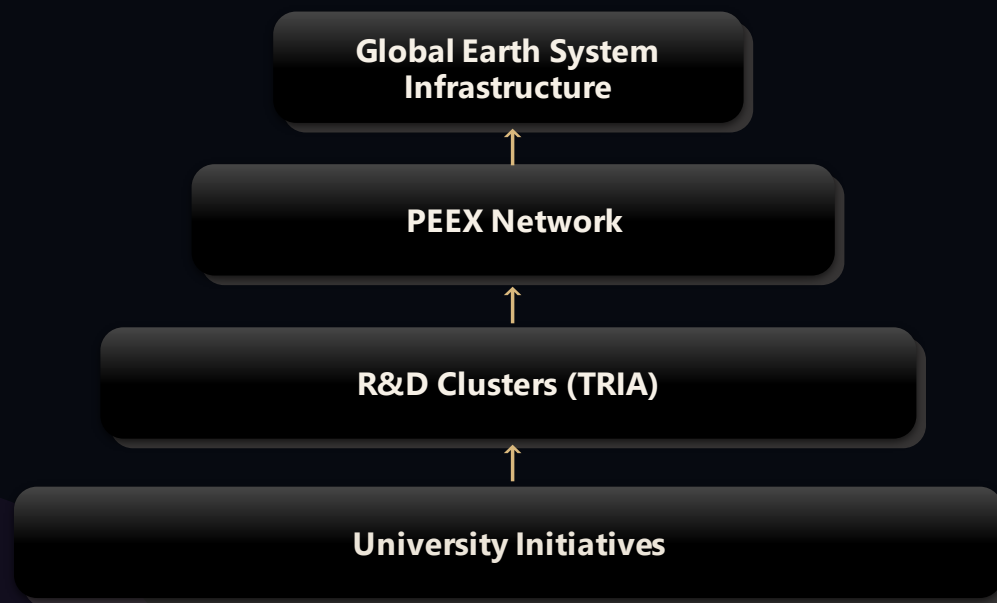
# Integration into Global Research Ecosystems



Horizon Europe · Erasmus+ · Interreg · Nansen · Bilateral programmes



# Alignment with PEEX

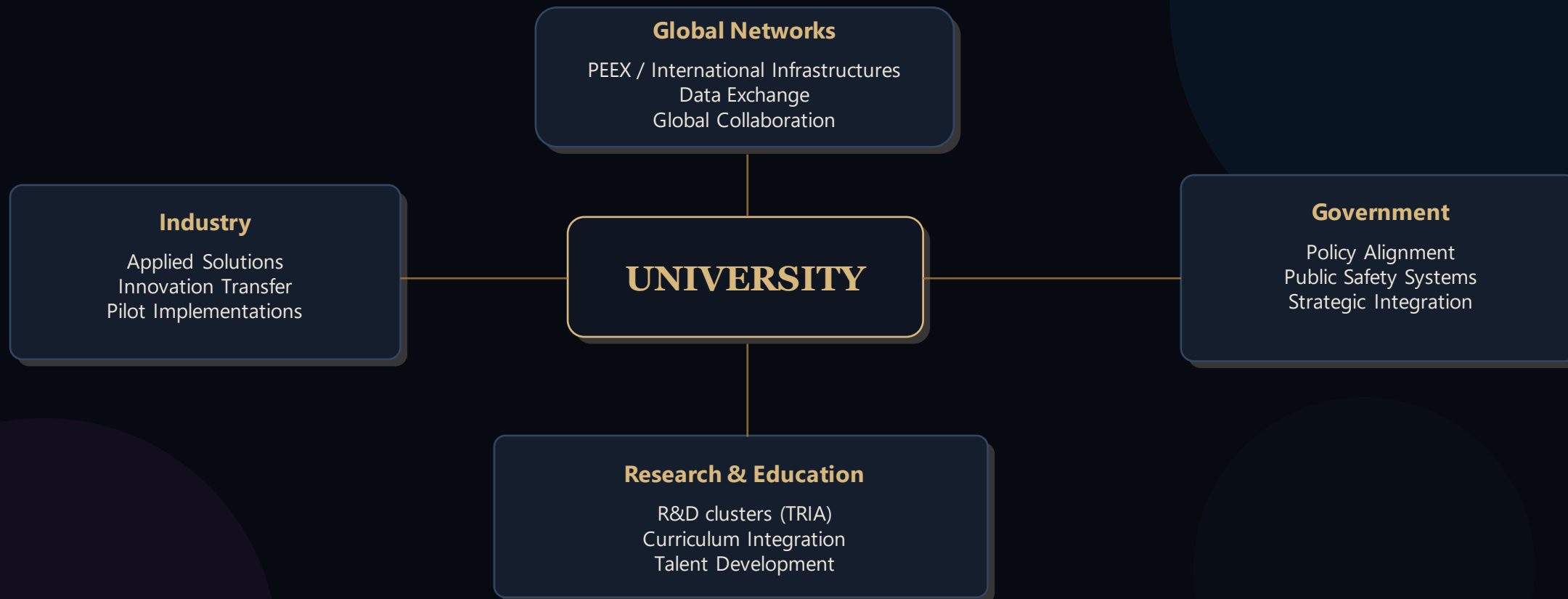


## Layer Descriptors

- Global Observation Systems
- Atmospheric Monitoring Networks
- Transdisciplinary Integration
- Initiative-Driven Structures



# University as a Hub





# System-Level Impact

## Institutional Level

- transformation of university role
- integration of research and education
- creation of R&D clusters
- improved coordination capacity

## Ecosystem Level

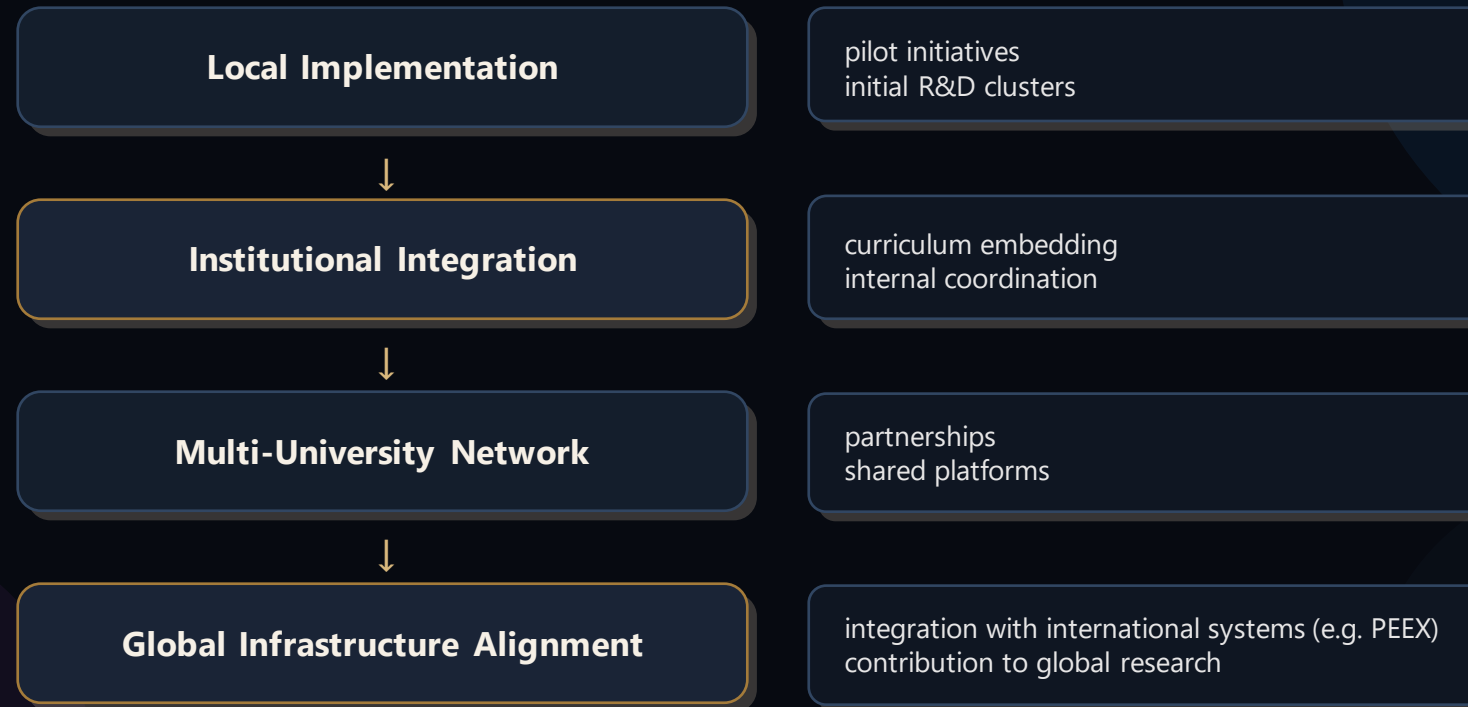
- connection to global infrastructures (e.g. PEEX)
- cross-sector collaboration (industry–government–academia)
- knowledge transfer acceleration
- scalable innovation environment

## System Level

- contribution to global research networks
- support for large-scale challenges (climate, safety, AI)
- long-term sustainability of initiatives
- integration into international frameworks



# Scalability & Future Development





# Call for Collaboration

## **TRIA as a Framework for Building Research Management Capacity**

Research Management Facility  
Call: HORIZON-WIDERA-2026-04

Planned opening date: approximately 23 April 2026  
Deadline: 24 September 2026

## **Consortium invitation**

A consortium with Odesa Polytechnic National University at its core is being formed for this call

We invite:

- universities
- research institutions
- research support offices
- innovation agencies

to join as:

- full partners
- associated partners



# Q&A

## Questions & Discussion

**Odesa Polytechnic National University**  
**Department of Foreign Relations**

 [vmz@op.edu.ua](mailto:vmz@op.edu.ua)

 [op.edu.ua](http://op.edu.ua)

**Open for consortium discussions**  
**HORIZON-WIDERA-2026-04**

Let's discuss how to collaborate!