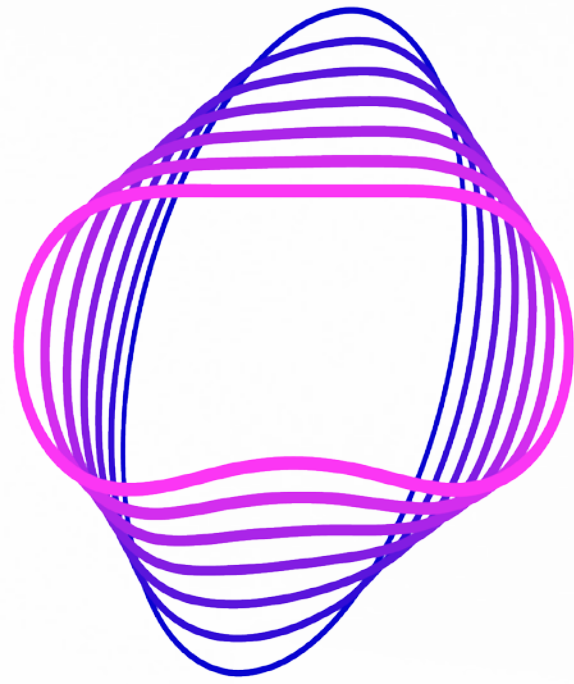




METaverse ACADEMY

Building Deep Tech Ecosystems

Connecting startups, academia, and innovation infrastructure to foster the next generation of XR and deep technology ventures.



Co-funded by
the European Union



Learning Objectives

This module will guide you through the essential components of building thriving ecosystems for deep tech innovation.

Ecosystem Fundamentals

Understand what makes a healthy startup ecosystem and the key ingredients for sustainable innovation

XR & Deep Tech Assets

Identify the critical actors, infrastructure, and resources needed to support extended reality and deep-tech ventures

Incubator Impact

Learn effective strategies for incubators to foster cross-sector partnerships and drive cultural transformation

What Is a Deep Tech Ecosystem?

A deep tech ecosystem is a complex, interconnected network of organizations and resources that collectively support science-driven innovation with high societal impact potential.

Unlike traditional startup environments, deep tech ecosystems require specialized infrastructure, longer-term commitment, and interdisciplinary collaboration to transform breakthrough research into market solutions.



Why Ecosystems Matter for XR Startups

Access to Specialized Infrastructure

XR startups require access to expensive equipment, testbeds, and facilities that would be prohibitive to develop independently. Shared resources through ecosystem partnerships dramatically reduce capital requirements.

Real-World Validation

Connections to actual users and industry partners enable startups to conduct pilots and validate their technologies in authentic environments, accelerating product-market fit.

Policy & Procurement Pathways

Established ecosystem relationships provide startups with channels to influence policy development and access public procurement opportunities that can provide crucial early revenue.



XR-Specific Stakeholders

The XR landscape requires specialized ecosystem participants who understand the unique challenges and opportunities of immersive technologies.



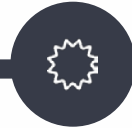
XR Technology Providers

Hardware manufacturers (Meta, Microsoft, Pico), software platforms (Unity, Unreal), and specialized component developers who provide the technological foundation.



Sector-Specific Partners

Educational institutions, healthcare facilities, manufacturing plants, and other domain experts who understand vertical applications of XR technology.



Standards Organizations

Bodies like OpenXR, WebXR, and IEEE working groups that establish interoperability standards and best practices for the emerging XR industry.



Public Testbeds

Smart campuses, digital innovation hubs, and municipal living labs that provide environments for large-scale XR deployment and testing.

Building Startup–Industry Bridges



Pilot Projects



Create structured pilot programs where corporates can test XR solutions in controlled environments with clear success metrics and timeline.

Need-Based Research



Match academic research capabilities with real industry challenges through problem-focused innovation events and challenges.

Co-Development



Facilitate IP-sharing agreements and joint development frameworks that protect startup interests while enabling corporate engagement.



Innovate forward

Tech Parks and Innovation Districts

68%

Growth Rate

European tech parks hosting XR companies have grown significantly faster than traditional business parks since 2018.

3.4x

Collaboration Multiplier

Co-located startups are 3.4 times more likely to form partnerships with neighboring organizations than dispersed companies.

€2.3B

Infrastructure Investment

The EU has committed to innovation district development specifically for deep tech over the next five years.

Tech parks and innovation districts create physical hubs where startups, researchers, and corporate partners can share specialized facilities, creating natural collaboration opportunities and knowledge spillovers.

University–Industry Collaboration: EU Examples

INESC TEC (Portugal)

A private non-profit research institution that bridges academia and industry, with over 30 years of successful applied research projects and spin-off companies.

- 13 research centers across multiple technology domains
- Over 800 researchers and 100+ spinouts
- Strong focus on industrial applications

KU Leuven/IMEC

World-leading research hub for nanoelectronics and digital technologies with exceptional commercialization record.

- €583M annual research budget
- 4,000+ researchers from 95 countries
- Venturing program with specialized support

CERN Venture Connect

Initiative connecting CERN's cutting-edge physics research with entrepreneurial talent to create deep-tech startups.

- Entrepreneurship meetups and hackathons
- Knowledge transfer partnerships
- IP licensing for new ventures

Fostering a Culture of Innovation

Creating a thriving deep tech ecosystem requires intentional cultural development that breaks down traditional barriers between academic research and entrepreneurship.

This cultural transformation must address risk aversion, siloed thinking, and disconnects between theoretical research and market applications.

Successful innovation ecosystems actively celebrate and reward knowledge transfer while making entrepreneurship a visible and respected career path.



Interdisciplinary Collaboration

Create structured opportunities for cross-department interaction through shared challenges and facilities.



Incubator Role in Culture Shift



Research-Market Connector

Serve as a bridge between academic innovation and commercial opportunities by translating research into market applications and connecting researchers with business expertise.



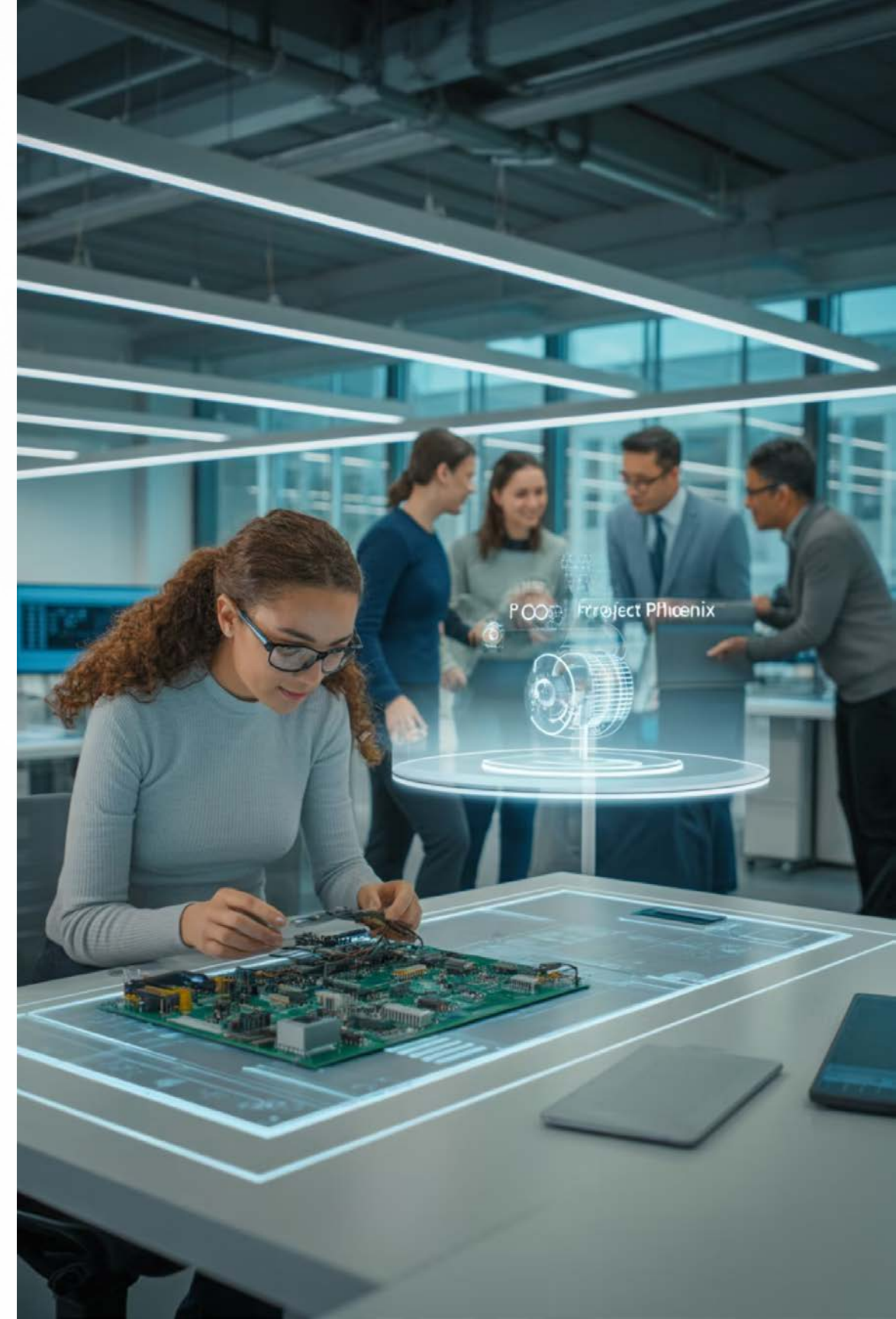
Entrepreneurial Education

Provide structured training in business fundamentals, market validation, and startup methodologies specifically adapted for deep tech ventures with longer development cycles.



Visibility Amplifier

Showcase startup success stories across campus through events, media coverage, and recognition programs that highlight the impact of commercialized research.



Ecosystem Mapping: What to Include

A comprehensive ecosystem map identifies all potential resources and partners available to deep tech startups, revealing both strengths and gaps.

Research Assets	External Partners	Infrastructure
- Specialized laboratories and equipment - Research groups with relevant expertise - Faculty champions and entrepreneur-friendly researchers - Technology transfer and IP management resources	- Corporate innovation teams and R&D departments - Industry associations and consortia - Public sector agencies and procurement offices - Specialized investors and funding mechanisms	- XR labs and visualization facilities - Digital fabrication and prototyping spaces - Testing environments and user research facilities - Computing resources and specialized data platforms

Tool: Ecosystem Mapping Canvas

A structured approach to visualizing your ecosystem helps identify strategic opportunities and critical gaps that need to be addressed.

The mapping process should be collaborative, involving multiple stakeholders to ensure a comprehensive view and shared understanding of the ecosystem.

Create digital versions using collaborative tools like Miro, Notion, or presentation software that can be easily updated as the ecosystem evolves.

1 Identify All Stakeholders

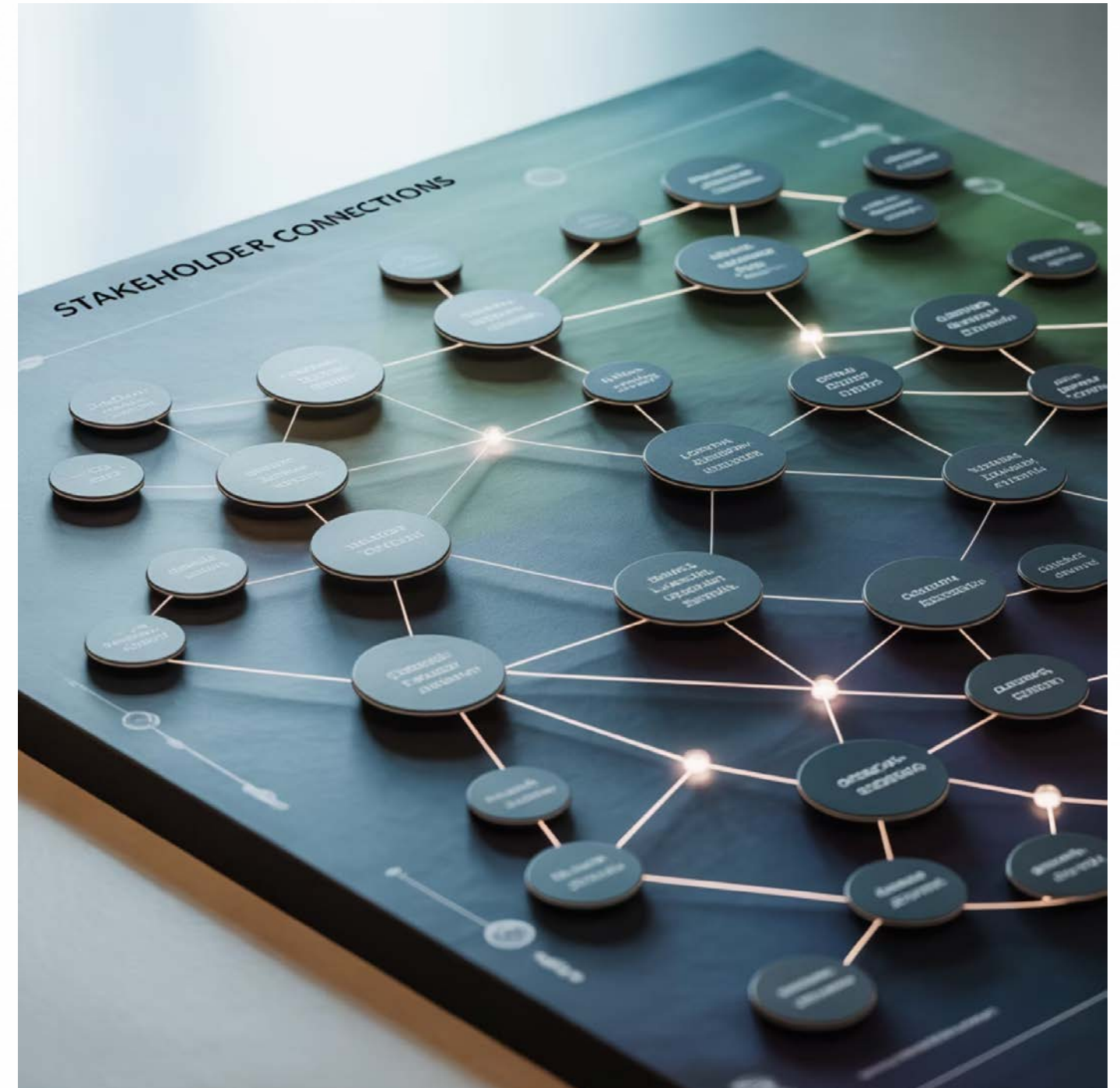
Map every potential partner, resource provider, and beneficiary in your ecosystem.

2 Chart Value Flows

Document what each stakeholder contributes and receives within the ecosystem.

3 Highlight Gaps & Opportunities

Identify missing connections and potential new value exchanges.



Tool: Stakeholder Matchmaking Sheet

A stakeholder matchmaking sheet systematically aligns startup needs with ecosystem resources, making connections more intentional and strategic.

Needs Assessment

Document specific requirements of each startup:

- Technical resources (labs, equipment, data)
- Expertise (domain knowledge, mentoring)
- Market access (pilot sites, early customers)
- Capital (grants, investment, revenue)

Ecosystem Inventory

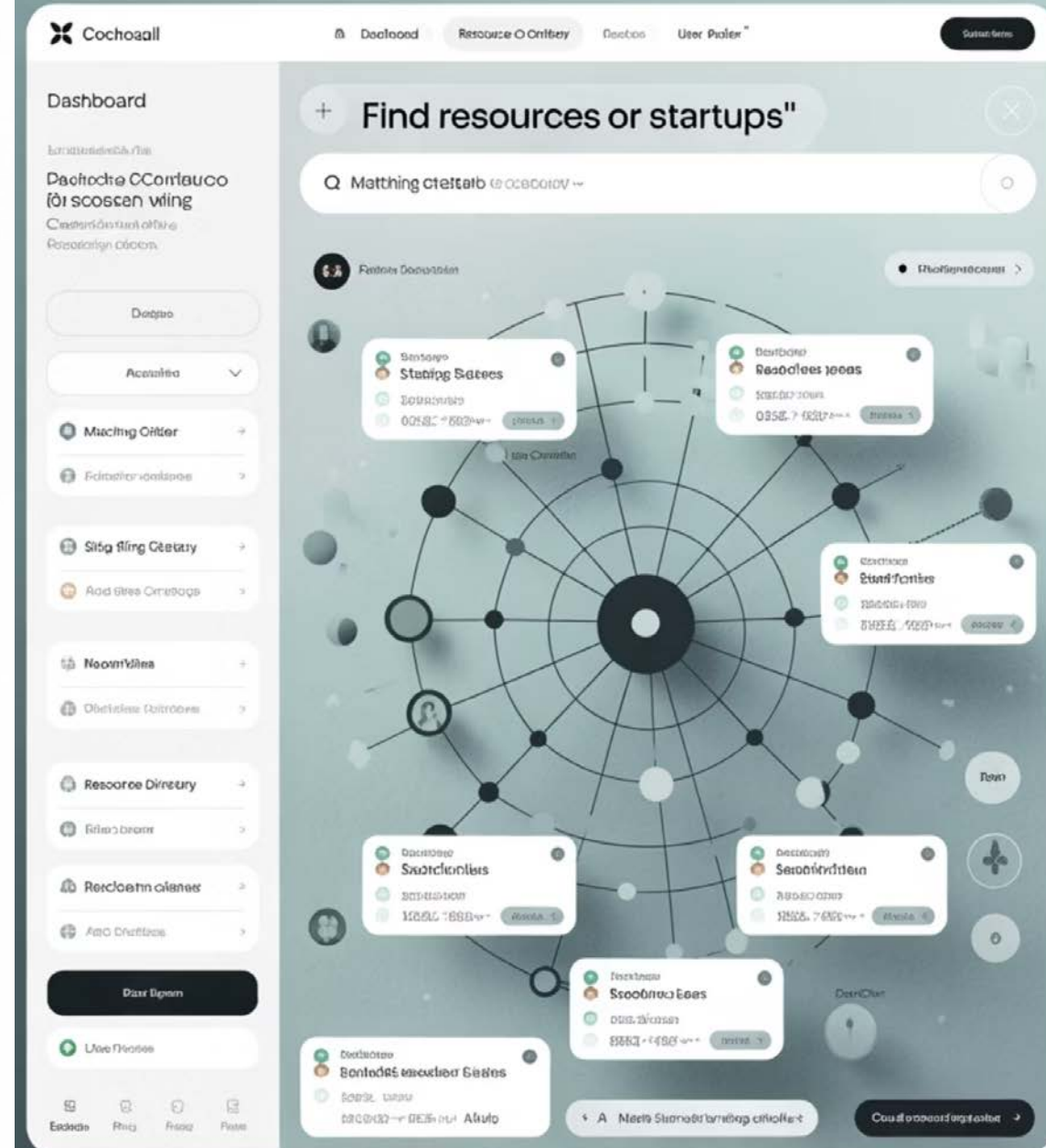
Catalog what each ecosystem actor can provide:

- Available resources and capabilities
- Strategic priorities and interests
- Constraints and requirements
- Potential value from collaboration

Strategic Deployment

Use the matchmaking sheet during:

- Pitch days and demo events
- Quarterly planning sessions
- Corporate innovation workshops
- Strategic partnership negotiations



Case Snapshot: Deep Tech Matchmaking



XR Surgical Training Startup

A university spinout developed advanced haptic feedback technology for surgical simulation in virtual reality, but needed clinical validation.

The Challenge

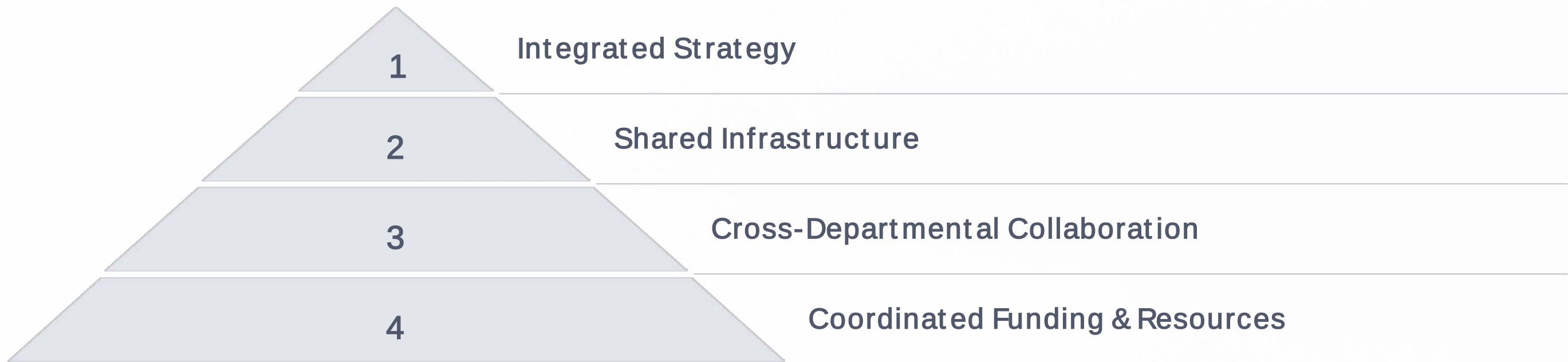
Despite promising technology, the startup struggled to find medical professionals willing to test their early prototype and provide feedback on the clinical realism and training value.

Ecosystem Solution

The university incubator connected the startup with the medical faculty's simulation center, providing:

- Access to surgical residents for user testing
- Clinical expertise to refine the simulation
- Validation data for marketing and fundraising
- First reference customer through a pilot program

Avoiding Fragmentation



Ecosystem fragmentation is a common challenge that undermines effectiveness. When departments, faculties, and organizations create parallel structures without coordination, resources are wasted and startups struggle to navigate the system.

Infrastructure Sharing
Develop shared-use policies for specialized equipment and labs across departments to maximize utilization and prevent duplicate purchases.

Breaking Academic Silos
Create formal collaboration mechanisms between faculties and reward interdisciplinary projects through recognition and resource allocation.

Funding Coordination
Establish an innovation oversight committee to align innovation investments and prevent competing or redundant initiatives.

Measuring Ecosystem Strength

Effective ecosystems require ongoing assessment and measurement to track progress and identify areas for improvement.

Collaboration Metrics

- Number of joint projects initiated
- Cross-sector partnerships formed
- Co-development agreements signed

Satisfaction Ratings

- Startup founder experience scores
- Partner satisfaction surveys
- Resource accessibility feedback



Output Measures

- Startup formation rate
- University spinouts launched
- Patents filed and licensed

Participation Indicators

- Faculty engagement in entrepreneurship
- Corporate participation in events
- Student involvement in innovation



EU Ecosystem Support Initiatives



Startup Europe & EIT Programs

The European Commission's Startup Europe initiative connects regional startup ecosystems, while the European Institute of Innovation and Technology (EIT) funds domain-specific innovation communities in digital technology, health, manufacturing, and other sectors.



Regional Innovation Valleys

The New European Innovation Agenda (NEIA) establishes Regional Innovation Valleys that bring together actors from across the innovation value chain in specific geographic areas, with dedicated funding and coordination support.



S3 Smart Specialisation

Smart Specialisation Strategies (S3) help regions identify and develop their unique competitive advantages through targeted investment in research and innovation, with platforms for interregional collaboration on shared priorities.

Key Takeaways



Ecosystem Acceleration

Well-connected ecosystems dramatically accelerate innovation by reducing friction, providing resources, and creating unexpected collisions between ideas and resources.



Proactive Incubation

Incubators must move beyond passive support to actively build and strengthen ecosystem connections through intentional mapping, matchmaking, and barrier removal.



Cultural Foundation

Sustainable ecosystems require a cultural foundation that values collaboration across traditional boundaries and celebrates the transformation of research into impact.

Building effective deep tech ecosystems is not an accidental process but requires deliberate strategy, consistent effort, and long-term commitment from all stakeholders. The rewards—accelerated innovation, economic development, and solutions to complex challenges—make this investment worthwhile.



Reflection Prompt

What actors and assets are missing in your university's deep-tech ecosystem?

Consider your current innovation ecosystem and identify:

- Key stakeholders who are underrepresented or absent
- Critical infrastructure or resources that would accelerate XR development
- Potential bridges between existing assets that aren't currently connected
- Policy or cultural barriers preventing ecosystem development

How might you take a leadership role in addressing these gaps? What first steps could you take to strengthen your local deep tech ecosystem?