Position Paper

Regional Innovation Capacity: An Entrepreneurship Support Organisation View on Innovation Ecosystems

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POSITION PAPER – RESULTS OF HIGH-LEVEL EXPERT WORKSHOP 'COLLABORATIVE MODELS TO ACCELERATE EUROPE'S INNOVATION CAPACITY', BRUSSELS, 26 MARCH 2024.

Abstract: In the face of global challenges and the increasing need for localised economic resilience, Entrepreneurship and Innovation Support Organisations (ESO/ISOs), serve as crucial orchestrators within regional innovation ecosystems. Their unique position enables regions to construct, orchestrate, and promote local innovation ecosystems and facilitate the transition of new ideas into marketable innovations, essential for regional sustainable economic development, smart specialisation, and closing the innovation divide. This paper argues for increased recognition and support of ESO/ISOs within European innovation policy frameworks. It emphasises its role in enhancing regional innovation capacity through systemic integration and engagement of public administration, corporates, academia, investors, startups, and SMEs.

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KEY MESSAGES

1. **Implement Systemic and Place-Based Innovation Frameworks through ESO/ISO-led Partnerships.**
   The European Business and Innovation Centre community advocates for systemic change and the implementation of place-based innovation frameworks that emphasise collaborative and participatory governance models. The establishment of methods based on the Partnerships for Regional Innovation (PRI) pilot involving ESO/ISOs in leadership roles is essential. These partnerships connect a diverse array of innovation actors from both the private and public sectors, promoting a cohesive approach to innovation. Such policies should support further integrating ESO/ISOs into the governance frameworks of Smart Specialisation Strategies (S3) and other regional innovation initiatives, ensuring they can effectively contribute to and collaboratively steer regional innovation strategies.

2. **Enhance Structural and Financial Support for ESO/ISOs to Build Regional Innovation Capacities.**
   Developing robust support structures for ESO/ISOs is critical, including dedicated funding, capacity-building programmes, and infrastructural investments. Such support will enable ESO/ISOs to effectively manage and accelerate innovation processes, transforming regional attributes and academic research into commercial successes. Targeted investment strategies by the European Union will enhance the operational capabilities of these organisations, increasing regional economic development and competitiveness.

3. **Empower ESO/ISOs as Catalysts for Open Innovation and Cross-Sector Collaboration.**
   Policymakers at all levels must recognise and empower operating ESO/ISOs as constructive orchestrators within regional innovation ecosystems. These organisations' core mission is to facilitate ''open innovation'' by integrating diverse knowledge sources and fostering interdisciplinary collaboration across academia, industry, and government. We should establish supportive policies and strategic frameworks that expand the capacity of ESO/ISOs to drive innovative models and enhance their impact across various sectors.

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Contents

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Regional Innovation Capacity – An Entrepreneurship Support Organisation (ESO) View on European Innovation Ecosystems

EBN and its pan-European innovation of 170+ European Business and Innovation Centres (EU|BIC)[1] support the objective of increasing the 'capacity of regional economies to innovate and transform and adapt to an ever-changing and more competitive environment'. We are keen on contributing to the development and implementation of its various policies and actions that position Europe as a leading global innovation powerhouse by 2030 focusing on green, digital, and social innovation. Yet, we note that the **perspective of Entrepreneurship and Innovation Support Organisations (ESO/ISO), including European Business and Innovation Centres (EU|BICs), remain underutilised in policy development** aimed at building, strengthening, and interconnecting regional innovation ecosystems that promote innovation, research and development (R&D), and entrepreneurship.

A lot of ink has been spilt on ''how'' to drive and implement Regional Innovation System (RIS) and Smart Specialisation Strategy (S3) policies, as well as programmes for large-scale R&D and technology infrastructure investments that support cutting-edge research, innovation projects, and the European Innovation Council (EIC). This paper will address the ''who'' and ''what'' questions – i.e. **which type of organisations should be leveraged to increase innovation capacity, especially in emerging and moderate innovator regions**; what forms of collaboration promise and demonstrate the most results and what forms qualify to boost regional growth; and what funding mechanisms should be considered. It will particularly focus on entrepreneurial innovation ecosystem management and define – from an ESO/ISO perspective – the guiding principles to increase – adaptively and responsively – regional innovation capacity for the whole of Europe.

The pan-European ESO/ISO community, supported by EBN, believes policymakers should not see regional innovation capacity as an end to itself, but rather as a way to enhance Europe's value-gain from regional collaboration and economic competitiveness. We are convinced that the way forward is to apply a variety of systemic change and ecosystem-building frameworks to innovation capacity building, each grounded in the principles of "place-based transformation" and "cooperate locally to compete globally." This entails more radical measures than the EU typically adopts in its policy initiatives. It calls for actions tailored to a reality where innovation processes need to be more reflexive, systemic and risk-taking to cover multiple options that can lead to favourable upsides with minimal downside risks. We are confident

[1] EU|BICs are the evolution of the EC-BICs and are annually assessed on their impact on regional innovation ecosystem performance through the EU|BIC Quality Assessment Framework. EBN is the licensing organisation granting and monitoring the performance level of organisations holding the EU|BIC Quality label. Certified EU|BICs are ESO/ISO organisations specifically committed to driving regional sustainable economic development through entrepreneurial innovation. The pan-European/global certified EU|BICs and Associates member community comprises organisations, such as (university-based) incubators, accelerators, entrepreneurship and innovation centres, science and technology parks, technology transfer offices, regional development agencies, and R&D support actors such as research organisations, laboratories, and business consulting agencies. (See Box 1)

that **these approaches will contribute to solving the current simplistic dichotomies**, i.e. European vs Member State performance, emerging/moderate vs high/leading innovator regions, technology vs innovation and entrepreneurship policy support, **and ultimately promote a cohesive European innovation landscape.**

1. Definitions

Regional innovation capacity is commonly defined as the ability of regional innovation communities to exploit existing resources and create a sustainable competitive advantage by driving innovation activities in an ever-evolving environment (Pavão, P. N. R., Couto, J. P., & Natário, M. M. S. (2019)). Since innovation capacity covers the entire innovation value chain's performance of a specific region, it includes practices on:

- R&D investments (i.e. R&D expenditure in the academic, public and business sectors, and venture capital expenditure),
- innovation activities (i.e. companies (corporate, SMEs and startups) introducing product and business model innovation, innovative companies collaborating, and intellectual assets registrations),
- the overarching innovation ecosystem framework conditions, including the availability of talent and attractive research systems (i.e. Human Capital),
- the number of actors involved in innovation promotion and adoption (i.e. Market Education),
- presence of network and relationship builders promoting deals among parties operating in similar fields (i.e. Social Capital),
- managing and brokering new data and knowledge to those who need it in new sectors (i.e. Access to Knowledge),
- improving the capacity of innovation officers and agents of change in corporations and governments (i.e. Open Innovation), and
- introducing the local ecosystems to international actors (i.e. Internationalisation).

Regional innovation capacity also includes, although less prominently elements such as regional governance structures and performance, EU funding policies, complex adaptive organisations and systems, development of new systemic and transformative change structures, and novel forms of (public-private) collaboration.

This paper mainly focuses on **Entrepreneurial Innovation Ecosystems** such as the alignment structure of government, university, business, and other actors that interact to promote innovation and commercialisation of a core technology as their common value proposition (Drori, I., & Lavie, D. (2023). It also focuses on the modelling of the territorial innovation capacity by relevant factors with influence on the innovation capacity at a regional level. From an ESO/ISO perspective, this is the most complex element of regional innovation capacity in an ever-changing environment (see Box 2). As such, it requires particular attention from both the regional actors and the national and EU policy sides.

Entrepreneurial innovation ecosystems have multiple benefits: they allow for orchestration around the common goal of the emergence and evolution of technology ecosystems supporting regional economic development and competitiveness; this makes innovation systems a powerful promoter of multi-level

cooperation, coopetition (simultaneous cooperation and competition for resources), directionality and commonality for affiliated actors to accelerate the whole innovation process on the ground. Furthermore, entrepreneurial innovation ecosystems allow for the re-examination of the link between technological discovery and the creation of an innovation ecosystem that brings together stakeholders to commercialise that technology. **In short, regionally orchestrated innovation ecosystems have the potential to remove bottlenecks, improve collaboration, efficiency, impact, and effectiveness of regional innovation performance and accelerate the commercialisation of technology.**

These arguments suggest that entrepreneurial innovation ecosystems should be the default way of working for Europe in any undertaking aimed at raising regional innovation capacity. They also explain why industrial, technology, business (e.g. startup ecosystems), and research systems have been recurringly promoted by the European Commission made a prominent element of the R&D programmes, and Recovery and Resilience Facility and the related funds. At the same time, we saw only a relatively minor role for entrepreneurial innovation ecosystem building and management in Horizon 2020 and the current Horizon Europe programme[2] – even when comparable government (funding) programmes outside of Europe seem to take a far more pronounced approach towards integrated innovation ecosystem management[3].

This being said, we note that most of the structural funds and funding of Horizon Europe has been for Research & Innovation Actions (RIA), albeit geared towards either large-scale structural support (e.g. boosting energy efficiency measures and renewables, re-building markets in the wake of the Covid-19 health, economic, and subsequently the energy crises) with long-term and high-intensity strategic actions. RIA also supported projects aimed at supporting individual SMEs with short-term financial incentives and injections supporting economic recovery and the transition to a low-carbon economy. By prioritising financial support to large-scale regional actors or individual startups and scale-ups, the current framework programme is characterised by projects and a ‘’getting things done, at a loss of regional/independent/self/incremental initiative value’’. We need to aim for constructions that facilitate continuity and valorisation of the achieved results with the ability to ‘’move beyond projects in the next framework and combine project results to make them bankable’’.

At the same time, the New European Innovation Agenda (NEIA) sets ambitious goals that will influence all Research and Innovation Actions (RIA) projects. However, this agenda tends to underemphasise the dimension of innovation and entrepreneurship value chains, focusing narrowly on specific industries

[2] e.g. European Innovation Ecosystems - 70 and 90 million euros respectively for 2023 and 2024, within the European Innovation Council, and Regional Innovation Valleys – 115 million euros.

[3] In the context of the global competition for talent and leadership in science, technology, and innovation capacity that Europe faces, we highlight the US and Israeli initiatives as a reference: the new National Science Foundation (NSF) funding initiative called the Regional Innovation Engines – a programme that specifically focuses on catalysing and fostering innovation ecosystems across the US; the MIT Regional Entrepreneurship Acceleration Programme (REAP) – a global initiative to help regions accelerate economic growth and promote social progress through innovation-driven entrepreneurship (IDE); and, the Innovation Ecosystem Management methodology for implementation of challenge-based ecosystems on a regional and national level by the Israel Innovation Authority supported by the Israel Innovation Institute.

such as deep tech and targeting individual companies at certain Technology Readiness Levels or company growth phases. The current approach overlooks the detailed support structures needed, especially to bridge the gap between research and the market. Successfully **commercialising Europe's excellent research publications and patents depends not only on a cultural shift within academia but also on the availability of university-based incubators and other intermediary organisations**. These entities guide the process from the ground up, support valorisation, and maintain trusted collaborations between industry, academia, and businesses. These entities play a crucial role in aligning research and development supply with local market demands.

Europe needs to accelerate the entire innovation process from the ground up, holistically supporting its innovation and entrepreneurship chains. For these reasons, it is of primary importance to now consider the organisational and intermediary actor components of regional innovation capacity.

Our reflection starts by considering the recent historical setting in which Europe's innovation landscape emerged, with the triple-helix model being a reference model and pillar for innovation ecosystems among others through the Smart Specialisation Strategies (S3) investments. When contrasting the positive impact of S3 on raising regional innovation capacities with the persisting innovation divide between European Member States (MS) [obj][obj][4][obj], it is worth asking **what type of actor network, relational complexity and other factors are negatively affecting the growth of the innovation landscape in Europe**. The business and innovation community and policymakers should collectively call for acknowledgement of the other factors surrounding their local environments to understand the dynamics of systems of innovation in a contemporary regional setting facing global challenges. It is also worth discussing the **flexibility needed by dynamic innovation and entrepreneurship ecosystems to adapt to challenges and uncertainties** in their ever-changing and developing environment. Thereby acknowledging that coherence and relational coordination are crucial to comprehending the ecosystem's framework evolution vis-a-vis extinction, and the dynamics necessary to manage innovation and technological developments.

From our analysis, regional innovation capacity should not be interpreted as a black-and-white dichotomous process, but rather as an emergence with a spectrum of attributes of a complex adaptive system, network ties, co-evolution, self-organisation, and varying degrees of relational complexity. Foremostly, the **nature of interactions and interactors' ties are critical to consider within an innovation and entrepreneurship ecosystem. Relational coordination of inter-actors in the regional ecosystem is directly related to organisational performance.** Also, it is critical to consider the increased rates of technology adoption and diffusion required of MS and regions to achieve the EU's green and digital priorities. The pace at which new technologies replace old ones varies and is influenced by how quickly the entire ecosystem adapts to and adopts innovation (Adner, R., & Kapoor, R. (2015)). **The impartial role of (publicly funded and non-profit) ESO/ISOs has become increasingly important in**

[4] Reflecting on Enrico Letta's Single Market Report 'Much More Than a Market' (April 2024) it seems that while convergence between Member States has increased, growing disparities inside the same countries are a fundamental concern. Letta's report also states that cohesion policy remains crucial, but that a more dynamic approach is needed (following the recommendation of the High-Level Group on the future of Cohesion). The report also underlines that cohesion policy alone cannot address the imbalances and that too many EU policies are largely blind to their territorial impact.

today's pluralistic environments. By remaining neutral and not favouring the short-term goals of any business, these organisations effectively address the diverse needs and aspirations of all actors in the local innovation value chain. This approach accelerates the development and implementation of solutions to major global challenges.

In other words, beyond their crucial role in the Smart Specialisation Strategy's (S3) Entrepreneurial Discovery Process (EDP), Open Discovery Process (ODP) and governance networks, and in the commercialisation of innovation (business creation), **ESO/ISOs are increasingly acting as systems orchestrators. They enhance synergies, cooperation, and cross-border connections among European innovation ecosystems, focusing on strategic areas, challenges, and technologies**.

Amid this complex operating reality and the enlarged view of place-based entrepreneurial innovation ecosystems, actors should pay more attention to the impact of human and social capital[5]. The new reality in solving global challenges moves beyond the triple helix by including civil society and the natural/socio-environmental context of the system (quadruple/quintuple helixes), which calls for tailored approaches to regional innovation capacity building (see Chapter 3).

2. The quest for regional innovation hotspots

The intuitive approach to regional innovation capacity would assume that large-scale publicly funded actions such as S3 should allow regions to grow their innovation performance cohesively in line with better-performing regions in Europe. Short-term public investments should target the stimulation of individual actors (e.g., higher education institutes, startups and SMEs, industries, and civil society). Although successful in their limited scope, in light of the required speed for Europe's green and digital transformation paired with key trends that shape innovation such as globalisation, a multitude of sources and multi-disciplinarity, and the shifting from 'closed' to 'open innovation'[6] (see Box 2), this reasoning is flawed for several reasons.

Firstly, sustainable structural support systems are needed for governments and companies alike to nurture and grow innovative ''green shots'' for the rapid transition. As place-based (entrepreneurial) innovation relies on a holistic concept which, while addressing the needs of both supply and the demand sides, focuses on their intersection which is the economy itself, it requires place-based orchestration. Such mediation must acknowledge that innovation is not only technological, but it also relates to business models and behavioural patterns; interactions based on mutual interest and curiosity between the demand and supply parties are the main venues of innovations, as they improve knowledge creation,

[5] Social capital is meant here to be described as a binder between human capital inside all actors through the process of socialisation (formal or informal) to share knowledge and know-how, acquire resources, and gain forces to concentrate power.

[6] Open Innovation: ''The use of purposive inflows and outflows of knowledge to accelerate internal innovation, and to expand the markets for external use of innovation, respectively.'' (Chesbrough, et al, 2006).

learning and development processes. Innovation is a combining process – the biggest breakthroughs do not follow from a single discovery but from the connection of a variety of elements and fields of expertise.

It is worth noting that both individuals and organisations commonly tend to shy away from innovative steps and prefer to maintain business as usual. Overcoming the 'innovation paradox' (Oughton, C., Landabaso, M. & Morgan, K. (2002)) and developing an interconnected innovation ecosystem demands deep cultural change both within the participating organisations, as well as between them. **To promote a transformative process in an ecosystem, the leading player must show commitment to the process to show key actors that they are part of a shared/ample community and are not alone. By leading by example and encouraging a culture that celebrates entrepreneurial innovation and tolerates failure, ESO/ISOs create environments where risk-taking is the norm rather than the exception.** This cultural shift can drive greater creativity and ambition among startups, government, universities, and corporate actors. In adopting these roles, ESO/ISOs effectively coordinate and enhance the capabilities of their ecosystems, leading to greater innovation, faster growth of startups, and more robust economic outcomes. We witnessed from the members of the EU|BIC community that their leadership exactly in these areas can turn local and regional ecosystems into thriving hubs of innovation and entrepreneurship.

Ecosystemic approaches to innovation call for ''connectors that are multilingual and can speak simultaneously to the private sector, academia, and public administrations – without favouring any particular stake except for the health and strength of the regional innovation system''. Also, innovation ecosystem frameworks[7] allow for connectors, such as ESO/ISOs, to dynamically analyse, interpret and steer actions based on potential gaps in the system. Europe's regional ''ecosystems are very liquid while facing multiple changes they move in uncertainty.'' Therefore, we need to aim for holistic change, bridge silos and innovation stakeholders and create new systems of governance that bring together not only entrepreneurs, investors and multinational corporations, but also service providers, local and national governments, NGOs, academia, companies with potentially related technologies and more.

Secondly, regional innovation capacity relies on a mix of institutional capacity (knowledge, know-how and attitude) and strategic leverage of the unique regional industrial and educational characteristics, brought together in an enabling environment steered by a common vision. Currently, there are ''a lot of silos between governance domains and levels, as well as on an EU level where funds are too dispersed and spread over various DGs''. In terms of regional innovation capacity, most of the EU funding is carried out to strengthen either smart specialisation strategies, transform local industries and SMEs, or in R&D to support the creation of novel (deep) technology. Challenge-based approaches are an example of how actors (parts) can systemically overcome their siloed focus by working together as a whole. However, as we witness the pace of substitution and adoption of new technologies depends on the capacity of the

[7] EBN applies the EU|BIC Innovation Ecosystem Building Framework management methodology to assess the performance of regional innovation ecosystems and accordingly develop infrastructures, signal potential actors that new opportunities exist in a specific geographic area or field, form new coalitions, and make funds accessible. The main conditions for the proactive development of innovation ecosystems are based on a holistic concept that focuses on developing market education, social capital creation, access to knowledge, open innovation facilitation, and internationalisation.

ecosystem to adapt, not on the financial impulse given to either industrial, academic, or private sector actors individually. **Overcoming the siloed approaches in current policy approaches between regional, industrial, and technological policies will enable all participating actors to identify innovation that steers profitable transformations. ‘’All is innovation policy in the context of the current wicked, multilayered challenges’’.**

Recent studies and the PRI Playbook highlight the need for new governance mechanisms to emerge in parallel with developing ecosystems, particularly in moderate innovator regions or areas shifting towards specific industries or technology verticals. These mechanisms are crucial to addressing complex societal needs effectively. The governance of sustainability-related innovation challenges and the development of high/deep-tech innovation ecosystems require reflexive and experimental policy approaches. This is due to the inherent uncertainties and the multilevel nature of these issues. It suggests a **shift towards more adaptive governance models within smart specialisation strategies, moving away from traditional monitoring and evaluation (M&E) frameworks** that prioritise compliance over real-time feedback and learning. There is a specific role for government, university and support intermediary interactions in overcoming organisational and resource bottlenecks that inhibit the ecosystem's emergence. These methods call for innovative governance mechanisms that can facilitate interaction and collaboration among diverse stakeholders, including creating (in)formal networks like a Forum for Research and Infrastructure (FRI) to enhance cooperation across governmental and academic boundaries.

The integration of the concepts of coopetition and governance could be leveraged to drive forward policy innovations where diverse actors including government agencies, regional authorities, and private entities share resources, knowledge, and capabilities, despite potential conflicts of interest or agenda. Hence, the **need for governance that transcends traditional bureaucratic boundaries and integrates various policy stages — from design through implementation and evaluation — is clear**. A practical example of how this can be operationalised is through the creation of dedicated units which coordinate and oversee the implementation of national and regional initiatives, bypassing bureaucratic inefficiencies. If **coordinated by an impartial actor which serves as a platform for stakeholders to engage in strategic learning and accountability mechanisms, this approach can enhance the flexibility and responsiveness of governance structures in addressing sustainability challenges** by promoting a culture of shared responsibility and mutual learning.

Finally, the hegemonic form of dispersion of EU funds targeting either short to mid-term project-based collaborations or large-scale infrastructure co-investments hinders the accomplishment of sustainable results that strengthen innovation actions in the everchanging operating reality. If the criterion ‘’funding should follow innovation and not vice-versa as is most often the case’’ should be applied, **greater attention should be given to developing effective synergies between public and private investments, between existing Horizon Europe, Interregional Innovation Investments and ERDF frameworks, and collaboration between the JRC, DG RTD, DG GROW, DG REGIO and the Committee of the Regions (CoR)**. A greater emphasis should be given to promoting the regional dimension in EU policy and regional innovation ecosystems as the key to strengthening and achieving EU strategic autonomy for smart and sustainable growth.

EBN points out that in the changing nature of innovation in local and regional capacity building, ESO/ISOs are at the heart of regional innovation ecosystems with a strong culture of startups and business. Due to their integrated nature by function often as local agents for EU actions (e.g. operating as EIT KICs, ESA BICs, European Digital Innovation Hubs (EDIH), and Enterprise Europe Network (EEN) nodes), they are well positioned to advise and disperse funding that is needed for the initiatives that create favourable conditions for new and innovative technology-based companies to continue operating in their local area using these synergies and developing additional complementarities with other local stakeholders. The pursuit of a ‘’profitable green and digital transformation, is not about breaking differentiations. It is about understanding what each entity seeks to accomplish, which is to get public money to catalyse private investments. Especially, in low and moderate-innovator regions ‘’we need to help regional bodies and entities ‘’drink from the water’’ (read: integrate and leverage available funding). ESO/ISOs operating on the development of real-life practice and deeply embedded in the regional innovation context, need to be further encouraged and supported in their role as active drivers of innovation in the regions to train regional actors and enable important technological innovations to be transferred to the local economy.

3. Principles for Adopting Regional Innovation Ecosystem Building Methods

The European Business and Innovation Centre community believes that the following cumulative principles should guide the adoption of regional innovation capacity-building methods. We propose to engage the wider entrepreneurial innovation community, including policymakers, corporations, universities, and regional development stakeholders, as part of the ESO/ISO perspective.

Building on these principles, the European Commission and national/regional governments could develop guidance on the need for specific regional innovation capacity development actions which are appropriate for the unique state and type of the regional entrepreneurial innovation ecosystem. The S3 methodology is a well-known and selectively effective basis from which to define such guidance. However, in the emerging context which necessitates rapid and profitable transformations for the whole of Europe, it is either too generic or too concise and could benefit from the input of ESO/ISO actors in proposing the right regional innovation capacity-building approach for their territory. This guidance for further development would help innovation value-chain beneficiaries to understand where and how the ecosystem could be strengthened, and when other considerations have to be prioritised.

1/ Innovation ecosystem management frameworks and literacy for European regions and MS

Developing robust innovation ecosystem frameworks is essential for fostering regional growth and enhancing the capabilities of local innovation actors. Recent models from the US, Israel and Europe exemplify how structured management can facilitate the emergence and sustainability of innovation ecosystems. These frameworks strategically align various stakeholders—businesses, academia, and government—to integrate each player's strengths and foster a collaborative environment. Frameworks like these guide the development and scaling of groundbreaking technologies, making sure that these

innovations support wider economic and social objectives. By offering a clear framework, regional actors can gain a better grasp of their roles and responsibilities, which in turn leads to more efficient decision-making and allocation of resources.

In addition to frameworks, fostering innovation literacy among regional innovation actors is a cornerstone for effective ecosystem management. The EU|BIC Innovation Ecosystem Building Framework (EBN, 2023) serves as an exemplary tool, empowering local actors with the necessary knowledge and skills to develop and sustain ecosystems. This framework systematically outlines key areas, processes and best practices for building and managing regional innovation ecosystems, focusing on creating synergies among stakeholders and driving economic development through innovation.

A key aspect of this approach is understanding Value Networks: system change is about creating self-sustaining ecosystems by generating new flows of value across the system, incentivising actors towards cooperation within an overall systems-level function. By enhancing innovation literacy, regions ensure that actors are well-equipped to engage with complex ecosystem dynamics, facilitate knowledge transfer, and drive the commercialisation of innovative solutions. This literacy enables actors to navigate intricate relationships and dependencies within the ecosystem, leading to more sustainable and impactful innovation outcomes.

2/ Funding without bias - different degrees and modalities of innovation funding

Innovation funding can be strategically diversified to support various aspects of ecosystem development across different regions, reflecting the unique needs and priorities of each area. One effective modality is the use of innovation vouchers, which could be funded through mechanisms like the European Regional Development Fund (ERDF) and Cohesion Fund. These vouchers would enable regions to prepare for or enhance their smart specialisation strategies (S3) and support the development of key ecosystem components such as entrepreneurship and innovation centres, university-based incubators and technology transfer offices. Such vouchers can also facilitate corporate-startup collaboration, aligning with regional innovation priorities and helping to bridge the lab-to-market gap. This targeted funding approach allows regions to direct financial resources towards specific activities that drive their innovation agendas, ensuring that funding aligns with local needs and capabilities.

Furthermore, to capitalise on the success of EU-funded projects, it is proposed to allocate unearmarked funding that ecosystem leaders can use to further develop and commercialise outstanding results. This flexible funding model would enable leaders to extend the lifecycle of successful projects beyond the initial funding period, promoting sustainability and long-term impact.

Additionally, adopting the EIC Business Acceleration Services (BAC) style of support for startups can provide local companies with access to business acceleration services. By focusing on helping startups comply with complex EU regulations such as GDPR, ESG standards, and the AI Act, this funding modality not only helps companies reduce administrative burdens towards adoption but also enhances their attractiveness and competitiveness within the EU market. This approach could be complemented by encouraging public procurement from innovative local startups and SMEs, thereby creating direct

demand for their innovations and supporting their growth within the local and wider European economic space.

3/ No ''holy cows'' – conscious and effective synergy-making

EBN and the EU|BIC community emphasise the critical need for synergies among regional innovation actors to enhance Europe's innovation capacity. The New European Innovation Agenda should drive impactful actions to bridge the innovation divides within Europe and globally, focusing on societal, social, and energy issues. Key to this effort is the establishment of regional innovation valleys, which, in collaboration with ESO/ISOs, will act as catalysts for societal and industrial change. ESO/ISOs, particularly EU|BICs, are pivotal in fostering a strong culture of startups and business innovation, ensuring the training of professionals, and transferring technological innovations to local economies.

The role of ESO/ISOs extends beyond education, research, and entrepreneurship stimulation; they are integral in nurturing an entrepreneurial mindset and facilitating real-life innovation practices. The Innovation Agenda advocates for increased synergies between EU funding programmes like Horizon Europe and regional initiatives to strengthen cooperation between SMEs, universities, technology centres, and research organisations. Support agencies such as the European Institute of Innovation and Technology (EIT) and its Knowledge and Innovation Communities (KICs), Enterprise Europe Network, and other Horizon Europe-funded initiatives are crucial in this ecosystem. To enhance effectiveness, EU-related bodies and actions should be concentrated regionally in one physical location, integrating as much as possible the EEN, EIT, European Digital Innovation Hubs (EDIHs), and others. This consolidation will make existing initiatives more transparent and incentivise collaboration, avoiding the overlap of multiple Research and Innovation Actions (RIA) targeting the same groups. By enhancing innovation literacy and capabilities within regional ecosystems, ESO/ISOs can support the transition to sustainable and inclusive growth. These institutions should actively participate in the co-creation of regional innovation policies, leveraging their knowledge and resources to drive systemic transformation and address societal challenges.

4/ Partnerships for Regional Innovation: Advancing S3 with Systems- and Challenge-Based Approaches for Today's (Quintuple) Innovation Landscape

To foster regional innovation and address critical societal challenges, a shift towards systems- and challenge-based approaches is essential. These approaches emphasise the need for regional actors to take mission-driven initiatives, focusing on sustainability and grand societal challenges such as climate change, health resilience, and digital transformation. The development of Challenge-Oriented Regional Innovation Systems (CORIS) encourages reconfiguring traditional innovation systems to better align with societal and environmental goals. By leveraging place-specific assets and fostering new, sustainable practices, regions can address their unique challenges effectively. This requires the reorientation of existing structures and the creation of new ones to support the integration of diverse actors, from public and private sectors to civil society and academia, thereby driving comprehensive and inclusive innovation efforts.

5/ Unite public and private innovation ecosystem stakeholders under emerging adaptive governance mechanisms

The evolving S3 landscape towards sustainability necessitates the introduction of new governance mechanisms such as PRI. These mechanisms are designed to include a broader range of actors and address more diverse issues beyond traditional research and development, such as the diffusion of renewable technologies and the phasing out of carbon-intensive practices. The new governance structure aims to integrate the Entrepreneurial Discovery Process (EDP), policy design, implementation, and monitoring and evaluation (M&E) more cohesively, overcoming the fragmentation of the existing policy cycle. This approach also involves rectifying misalignments and enhancing stakeholder interactions to better coordinate regional strategies and solutions, operating under transparent rules of conduct and diverse accountability criteria to foster mutual understanding and cooperation among varied regional actors.

ESO/ISOs play a crucial role within this framework by acting as coordinators that bridge various stakeholders, including public bodies, businesses, and other regional actors. ESOs enhance the entrepreneurial ecosystem by connecting startups with resources such as capital, mentorship, and technology, and promoting coopetition—a blend of cooperation and competition—among businesses to spur innovation. Furthermore, ESOs engage in policy advocacy to ensure that the needs of the entrepreneurial community are considered in regional planning. They also lead efforts in knowledge sharing, crisis management, and fostering a culture of innovation and risk-taking. Through these activities, ESOs not only bolster the resilience and adaptability of regional innovation ecosystems but also ensure their sustained growth and competitiveness.

Conclusion

We consider regional innovation capacity as a means to an end. Namely, boosting Europe's competitiveness and thereby positively impacting the well-being of the European society). European business and innovation centre actors distinctly acknowledge that regional innovation capacity-building methods such as those applied within S3, I3, PRI, Regional Innovation Valleys (RIV), and the EIC's European Innovation Ecosystems actions have a lot of potential for Europe's innovation agenda, which is to a large extent still waiting to be released.

The ESO/ISO community is willing to build out regional innovation capacity actions which are fit for the EU's MS, regional interests and values as well as for industry, society, and overall competitiveness. As such, we believe that the above-mentioned principles will be key to driving the adoption of further regional innovation capacity actions within the regional and pan-European interconnected innovation ecosystems community.

Box 1: European Business and Innovation Centres (EU|BICs) are on a mission to drive sustainable economic development and well-being in their regions. There are now more than 118 certified EU|BICs and 55+ Associate members shaping our pan-European/global community. Becoming an EU|BIC means responding to our mission to use entrepreneurial innovation as a force for regional development with the best possible actions to create thriving startups and SMEs. In other words, EU|BICs take real steps to ensure that their services are as best as possible to their client companies and for their regions.

10 years EU|BIC impact snapshot: Since 2004, the community has **created over 400,000 jobs** and **supported over half a million companies**. The EU|BICs have **organised over 64,000 events** building trusted ecosystem relationships and driving entrepreneurial cultures in Europe, which averages to 4,000+ events annually. Over **15 billion euros of capital have been raised** in support of their client startups' growth, with 1.2 billion euros annually.

EU|BICs are well-positioned in the regional ecosystem, with a typical EU|BIC having trusted ties with investors, local, regional and national governments, national innovation agencies, technology transfer offices, universities and research and technology organisations (RTDs), other business and innovation support organisations, programmes and clusters, European and international networks, industry federations, investment and development agencies, and civil society.

Box 2: Innovation and entrepreneurial ecosystems integrate the same system and seek the common goals of their actors. While the innovation ecosystem concept is based on enterprises' innovation activities with a focus on business and economic results, recognising the importance of technological developments in the knowledge or academic environment and commercial economy, entrepreneurial ecosystems aim to explain and understand the entrepreneurship culture and processes that based on the entrepreneur at the centre. The gap in both approaches is because the institutional context emphasises just formal institutions and the ecosystem dynamic goes beyond. Especially, considering the role of government in entrepreneurial innovation ecosystems requires a more marginal role as a promoter of incentives, which contradicts innovation ecosystems which have a more balanced emphasis on the role of government in formal institutions (laws and regulations) and informal ones (social and cultural standards) – taking the lead that involves high risks and deep technological changes (Neto et al., 2024).

This distinction highlights the need for EU policy interventions to adapt their roles accordingly: supporting general entrepreneurship and innovation capacity building for regional economic growth, versus fostering innovation networks for high-risk technologies such as the facilitation of Key Enabling Technologies (KET), High-Performance Computing (HPC), deep tech infrastructure, and the development of European hydrogen valleys.

Box 3: Key trends that shape global innovation.

1. Globalisation – The centres of the global economy have been refined and spread beyond areas such as the USA, Northern Europe, Japan, and Russia. This makes the competition over positioning global innovation systems, access to emerging markets, and financial and human resources grow significantly. Policymakers must try and identify markets that are about to form while activating plans for ecosystem development to position themselves as central factors, requiring a variety of action paths. Local innovation ecosystems must be connected to global environments to locate resources, knowledge and international contacts that would promote those local ecosystems.

2. Multitude of Sources and Multi-Disciplinarity – The modern innovation process has evolved significantly, characterised by a shift from traditional single-discipline, isolated innovations to highly integrative and interdisciplinary approaches. In contemporary systems, scientists, entrepreneurs, and developers collaboratively merge their diverse resources, tackling complex systemic challenges across various sectors such as health, agriculture, energy, environment, and transportation. This shift has been propelled by the information revolution, leading to the dissolution of traditional industrial boundaries and the emergence of new players beyond the conventional academy-industry-government triangle. These changes necessitate the development of new interfaces, shared languages, and trust-building among the myriad of contributors, reflecting a more complex and globally interconnected innovation landscape.

3. Shifting from ‘’closed’’ to ‘’open’’ innovation - The shift from closed to open innovation reflects a significant change in management perspective due to the interdisciplinary nature and varied sources of modern innovation processes. This transition has led to the development of organizational infrastructures designed to support these processes by encouraging the flow of ideas both into and out of organizations, which is known as "open innovation." This model involves not just the acquisition of external knowledge but also the dissemination of internal developments beyond the organization's boundaries, now a standard practice across both business and public sectors.

   Open innovation addresses emerging complexities by promoting a reciprocal exchange of ideas that cross organizational and sectoral boundaries, enhancing the ability to cope with the rapid mobility of talent, capital, shorter product life cycles, and supply demands. It necessitates the development of new capabilities within large organizations to absorb innovation effectively and also the establishment of mediating organizations. These mediating entities play a crucial role in facilitating knowledge transfer among various stakeholders, understanding market dynamics, and remaining neutral and impartial to ensure effective collaboration between solution providers and challenge owners. An example of such a mediating organization is the EU|BIC, typically not-for-profit organisations, that operate regionally without vested interests, maintaining neutrality in its facilitation roles.

Case Study 1 – EU|BIC Instituto Pedro Nunes: The Coimbra Region's Success in Creating Unicorn Companies

The Coimbra region in Portugal, home to EU|BIC Instituto Pedro Nunes (IPN) – UBI's Top 10 Best Incubators in the World, home to ESA-BIC Portugal and ATTRACT European Digital Innovation Hub for Artificial Intelligence and High-Performance Computing, has become a notable success story in creating unicorn companies due to several key factors:

1. Strong Academic-Industry Linkages

- University of Coimbra: One of Europe's oldest and most prestigious universities, providing a rich talent pool and a strong research base. Its close collaboration with IPN fosters a robust environment for innovation and technology transfer.

- Knowledge Transfer: IPN acts as a bridge between academic research and industry, facilitating the commercialization of research outcomes and the development of new technologies.

2. Comprehensive Support Infrastructure and Staff

- Incubation and Acceleration: IPN offers extensive programmes supporting startups from ideation to growth stages, including mentoring, funding, and access to networks.

- Facilities and Resources: State-of-the-art laboratories, office spaces, and other resources are available to startups, helping them to develop and scale their innovations effectively. IPN offers a unique Space Solutions Centre of Incubation with dedicated facilities for startups in the new space economy

-Technical co-development: IPN hosts 6 applied R&D labs (own staff and researchers) with the main focus on conducting RTD activities jointly with companies. Covering TRL stages 5 to 8, in diversified technological areas: Automation, Materials, Informatics, Phytopathology, Electroanalysis and Geotechnics.

3. Strong Entrepreneurial Innovation Ecosystem

- Networking Opportunities: Regular events, workshops, and conferences organised by IPN and other local entities provide valuable networking opportunities for entrepreneurs, investors, and industry leaders.

- Collaborative Culture: A culture that encourages knowledge sharing and partnerships among startups, established companies, and research institutions.

4. Strategic Location and Connectivity

- Geographic Advantage: Coimbra's central location in Portugal makes it an accessible hub for business and innovation, linking major cities like Lisbon and Porto.

- Global Connections: IPN's international collaborations, soft-landing programs and partnerships provide startups with access to global markets and investors.

5. Effective Funding Mechanisms

- Access to Capital: Availability of venture capital, angel investors, and public funding through programmes such as Portugal 2030, EIC or Horizon Europe.

- Incentives and Grants: Availability of tax incentives, grants, and other financial support mechanisms for startups and R&D activities.

- Financial Support: IPN helps startups navigate and secure various funding opportunities, crucial for scaling operations and reaching unicorn status.

6. Clusters

- Existing cluster in IT and Healthcare: stakeholders are supportive of cooperation and testing with startups

- IPN provides MVP/PoC programs and regulatory pathways for Medical Devices, in vitro Diagnostics and Software as Medical Devices. Specialists for different global regulatory frameworks such as FDA, CE Marking, ANVISA and UKCA.

7. Success Stories and Role Models

- Existing Unicorns: Successful unicorns serve as inspiration and provide a roadmap for new startups. Success stories attract talent and investment to the region.

- Role Models: Successful entrepreneurs, mentors and business leaders often give back to the community by mentoring new startups and investing in local businesses.

Summary

The Coimbra region's success in creating unicorn companies can be attributed to its strong academic-industry linkages, bottom-up approach, comprehensive support infrastructure, trusted entrepreneurial innovation ecosystem, strategic location, effective funding mechanisms, government and policy support, and existing success stories. Due to its continuous orchestration, these independent factors collectively create an environment conducive to innovation, growth, and the scaling of startups into unicorns.

IMPACT:

Notable Success Stories Supported by IPN

1. **Feedzai**: A global leader in AI-powered risk management and fraud detection solutions for the banking and financial sectors. at IPN, and still maintaining its HQ in Coimbra, Feedzai has grown into a major fintech player, securing substantial funding and expanding internationally.
2. **Critical Software**: A highly successful company specialising in reliable and high-integrity software solutions for various critical industries, including aerospace, defence, and finance. Initially supported by IPN, Critical Software has grown significantly to over 1.300 and now operates globally across 10 industries.

3. **Sword Health**: A physical therapy startup, that provides virtual and digital physical therapy AI-powered. Founded by Virgílio Bento and technically supported by IPN during its early development stages, Sword has attracted significant investment and expanded globally.

Other Emerging Companies

IPN has supported numerous other startups that are on their way to achieving significant market impact. These companies benefit from IPN's comprehensive incubation and acceleration programmes, which provide critical resources, mentorship, and access to essential networks for growth. Since 1996 the incubator has supported the creation of over 450 companies, that have generated over 7.000 qualified jobs and generated in 2022 a combined revenue of €520 Million.

IPN's role in fostering these companies highlights the importance of robust support structures and a conducive entrepreneurial innovation ecosystem in nurturing startups, enabling them to scale successfully, and honouring their European founding roots. The combination of strong academic ties, access to funding, and a collaborative environment has proven to be a fertile ground for high-growth companies in the Coimbra region.

Contact Jorge Pimenta (Innovation Director) via jpimenta@ipn.pt for further information and to replicate the programme in your region.

Case study 2 – EU|BIC JIC: The Brno Region in Czechia – From Industrial Area to Innovation Hotspot

The CZ Brno region, supported by the EU|BIC JIC Innovation Agency– the local Enterprise Europe Network node (EEN), home to ESA-BIC Czechia and the European Digital Innovation Hub (EDIH) DIGIMAT for digital innovation for manufacturing SMEs, has successfully transitioned from an industrial area to a thriving innovation hub and startup factory. This transformation is due to several key factors:

1. Strategic Vision and Leadership

- Long-Term Vision: Early on, leaders and stakeholders in Brno adopted a strategic vision focused on innovation and high-tech industries, supported by consistent policies and investments.

- Leadership and Governance: Strong leadership from local government and JIC has been crucial in driving this transformation. The collaborative governance model ensures that various stakeholders, including government, academia, and industry, work towards common goals.

2. Strong Academic and Research Institutions

- Masaryk University and Brno University of Technology: These institutions provide a robust talent pool and research capabilities. They collaborate closely with JIC to commercialise research and support the startup ecosystem.

- Technology Transfer: Effective technology transfer offices and partnerships with industry facilitate the commercialisation of research and development activities.

3. Comprehensive Support Infrastructure

- Incubation and Acceleration Programmes: JIC offers extensive programs that support startups from ideation through scaling, including mentorship, access to funding, and business development services.

- Facilities and Resources: JIC provides state-of-the-art facilities, including co-working spaces, laboratories, and offices, which are essential for startups to develop and grow.

4. Favourable Business Environment

- Access to Funding: The region has developed a favourable environment for venture capital and other funding sources. JIC helps startups navigate and secure funding from both public and private sources.

- Regulatory Support: Local policies and regulations are designed to support innovation and entrepreneurship, reducing bureaucratic hurdles, and providing incentives for startups and investors.

5. Collaborative Entrepreneurial Innovation Ecosystem

- Networking and Collaboration: JIC fosters a collaborative ecosystem where startups, established companies, investors, and academia can interact and collaborate. Regular events, workshops, and networking opportunities enhance this collaborative spirit.

- Public-Private Partnerships: Strong partnerships between public institutions and private companies help drive innovation and economic growth.

6. Strategic Location and Connectivity

- Geographic Advantage: Brno's strategic location, with proximity to major cities like Prague, Vienna, and Bratislava, provides excellent connectivity and access to broader markets.

- Infrastructure: High-quality infrastructure, including transport and digital connectivity, supports business operations and growth.

7. Culture of Innovation and Entrepreneurship

- Entrepreneurial Culture: There is a growing culture of entrepreneurship in Brno, supported by educational initiatives and community engagement. This culture encourages risk-taking and innovation.

- Success Stories and Role Models: Successful startups and entrepreneurs from Brno serve as role models and inspire new generations of innovators.

8. Focus on High-Tech and Knowledge-Intensive Industries

- Sector Focus: JIC and regional policies focus on high-tech and knowledge-intensive industries such as IT, biotechnology, and advanced manufacturing. This specialisation attracts high-quality talent and investment.

- Innovation Clusters: The development of innovation clusters around specific sectors creates synergies and enhances the competitiveness of the region.

Sectors of Excellence in the Brno Region

- **Information Technology (IT) and Software Development** Brno is known for its strong IT sector, with numerous companies specializing in software development, cybersecurity, and enterprise solutions. The presence of major IT companies and research institutions fosters innovation in software and digital technologies.
- **Biotechnology and Life Sciences**
- **Advanced Manufacturing and Precision Engineering**: Brno's historical industrial base has evolved into a hub for advanced manufacturing and precision engineering.
- **Automotive and Aerospace**: The region supports significant activities in the automotive and aerospace sectors, including the development of high-tech components and systems.
- **Nanotechnology - Cutting-edge Research**: Brno is home to several research institutions and companies specialising in nanotechnology, contributing to advancements in materials science, electronics, and healthcare.
- **Renewable Energy**: The region is involved in developing renewable energy solutions, including solar and wind technologies.
- **Environmental Solutions**: Companies and research initiatives focus on sustainable technologies and environmental protection, addressing global challenges like climate change.

- **Photonics and Optical Technologies**: Brno has a growing sector dedicated to photonics, involving the study and application of light, which is crucial for innovations in telecommunications, medical devices, and manufacturing.
- **Mechanical Engineering**: The region's strong mechanical engineering sector supports a wide range of industries, from automotive to industrial machinery, leveraging advanced manufacturing techniques and technologies.
- **Medical Devices and Healthcare Equipment**: Brno excels in the development and production of medical devices, supported by a robust ecosystem of healthcare research and technology companies.

Notable Company Success Stories Supported by JIC

1. **Vrgineers** raised a $6 million investment and investors put $5 million into **ThreatMark** and were also selected for the EIC Scaling Club.
2. **IDEA StatiCa** has opened an office in Singapore.
3. **Smartlook** was bought for over a billion crowns by US Cisco, and **Runecast** was bought for almost a billion crowns by US Dynatrace.

Conclusion

The Brno region, The South Moravian Region (SMR) (Czech Republic, European Union) has emerged as one of the leading European innovation hubs, with its Regional Innovation Index (RII) jumping from 87.3 to 101 between 2016 and 2023, marking a 22.3% improvement over the EU. A global leader in electron microscopy, with one-third of the world's electron microscopes coming from Brno, Brno region excels also in the semiconductor, space, cybersecurity, and game development sectors. Leading the Czech Republic in knowledge intensity and high-tech employment, Brno region matches Europe's top regions. Brno's high quality of life and ranking as a leading student city highlight its role as a centre of innovation and growth. It stems from the data report on research, innovation, and business in South Moravia, published by the innovation agency EU|BIC JIC.

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