



## Strengthening Innovation Performance in Slovenia: From Knowledge to Impact

Slovenia has a strong research and development base, a range of **niche industrial competences**, and a set of strategic documents that recognise the importance of innovation for long-term competitiveness and sustainable development. Nevertheless, a persistent **gap remains between the knowledge generated and its tangible impact** on the economy and society. Innovation potential too often stops at the level of projects, pilots or prototypes, without a systematic transition to wider adoption, market deployment or a measurable increase in productivity.

One of the core challenges of the Slovenian innovation system therefore remains the **translation of innovation into practice**. Research results, technological development and strategic priorities frequently do not reach the stage at which they result in concrete improvements to processes, products or services in companies and other application environments. In practice, this is reflected in long time lags, **fragmented support mechanisms** and a lack of stable and accessible environments in which new solutions can be tested, adapted and implemented under real-world conditions. Addressing this bottleneck also requires greater speed and more streamlined, **fast-track research and funding procedures**, reducing the time from idea submission and project evaluation to research execution and market deployment. Experience from more successful countries shows that **focused investments** in demonstration infrastructure, test environments and supporting mechanisms significantly reduce risks for companies and accelerate the transition from development to actual use. In this context, the establishment of the National Demonstration Centre for Smart Factories (NDC PT) represents an important **instrument for supporting industrial transformation**, as it will enable the testing, validation and deployment of advanced technologies in real production environments. It will primarily support SMEs that lack their own demonstration capacities and will contribute to higher technological maturity, skills development and productivity growth.

Another important dimension of innovation effectiveness is the **alignment of policies and instruments** across the fields of science, innovation and economic development. Although objectives at the strategic level are often well aligned, gaps persist at the implementation stage between research programmes and measures aimed at economic growth and competitiveness. Companies face fragmented calls, inconsistent timelines and a lack of integrated support along the entire path from idea to market. Stronger and more **systematic cross-ministerial coordination** between the ministry responsible for science and innovation and the ministry responsible for economic development would enable more continuous support for innovation projects, reduce administrative barriers and

- *Knowledge - impact gap*
- *Market deployment*
- *Limited innovation scale-up*
  
- *Bridging the innovation-to-practice gap*
- *Fragmented support system*
- *NDC PT as a deployment catalyst*
  
- *Cross-ministerial coordination*
- *Policy and instrument alignment*
- *End-to-end innovation support*

increase the likelihood that public investment translates into tangible economic and societal outcomes.

The establishment of an RRI Hub could function as a **system-steering mechanism** to enhance coherence and strategic alignment within Slovenia's innovation governance framework. By **integrating key enabling technologies** (KETs) and strengthening coordination across sectoral strategies, it would institutionalise a **bidirectional feedback loop** between competence concentrations, business dynamics and the allocation of public R&D and innovation funding. Its overarching objective is to reinforce value creation and productivity through **innovation-driven structural transformation**, while ensuring balanced stakeholder representation within the innovation ecosystem.

- *Integration of KETs*
- *Strategic policy alignment*
- *Competence–funding feedback loop*

Beyond institutional and infrastructural issues, a shift in **mindset towards innovation** also plays a crucial role. Innovation is still too often perceived as an occasional, project-based activity rather than a **continuous strategic function** of organisations. This applies both to parts of the research community and to companies. As a result, there is an increasing need for **stronger emphasis on collaboration, co-creation and systematic knowledge transfer** among different stakeholders. Strategic Research and Innovation Partnerships (SRIPs) already act as an important connecting mechanism in this regard, **building trust** among actors, fostering joint development agendas and contributing to a gradual cultural shift towards greater openness, applicability and cooperation.

- *Innovation mindset shift*
- *Collaboration and co-creation*
- *Systematic knowledge transfer*

More successful innovation environments are built on clearly articulated **industrial demand** and the strong **integration of innovation activities** within value chains. A key enabling factor is targeted public **support for collaborative research and development projects** at intermediate technology readiness levels (TRL 3–6), where cooperation between research organisations and companies is essential to move technologies towards application. Calls that promote consortium-based projects reduce development risks and accelerate knowledge transfer. The long-term impact of innovation is realised at the scaling stage, when solutions expand to broader markets, integrate into global value chains and become a driver of company growth and productivity. Without coherent **support along this development pathway**, many promising initiatives remain confined to isolated examples, while coordinated support for collaborative development, skills and financing enables a transition towards innovation-driven and sustainable economic growth.

- *Demand-driven innovation*
- *Collaborative R&D (TRL 3-6)*
- *Innovation scaling and value chains*

The common denominator of these challenges and opportunities is the need for a more **operationally oriented innovation system**—one that goes beyond planning and funding and consistently focuses on real-world impacts. A stronger **emphasis on deployment, adoption and scaling of innovations** is a key step towards ensuring that existing knowledge, capabilities and public investments are more fully reflected in the competitiveness of the Slovenian economy, productivity growth and long-term quality of life.

- *Impact oriented innovation system*
- *Innovation deployment and market uptake*
- *Sustained competitiveness*