

D2.1 Innovation Procurement state of the art knowledge asset

Resources of interest for policy and funding purposes

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Abstract

Desktop research to identify resources of interest for policy and funding purposes. This document aims at fostering regional implementation of InnPr across the EU, in the framework of the PREPARE project. It provides an extensive overview of the state-of-the-art of InnPr and demand-driven innovation frameworks, as well as key policy programmes, funding sources and competitive call opportunities detailing its significance, and regional analysis of Bucharest (Romania), Oulu (Finland), Murcia (Spain) and Skåne (Sweden). As a result, will be easy to incorporate within the Joint Programme and the knowledge assets.

- The document provides an in-depth look at the EU's Legal Framework governing procurement, covering strategies, directives, guidance, and case law. Understanding these legalities is crucial for navigating and complying with the procurement landscape. Additionally, various funding sources and competitive calls at the European, national, and regional levels are identified, thus facilitating the integration of key policy programs into the PREPARE Joint Programme.
- Case studies, demonstrate successful InnPr practices. These examples underscore how regional efforts can drive innovation and economic growth.
- The document also offers a detailed regional analysis that reveals challenges and successes in implementing InnPr across different contexts.

The document concludes by emphasising the crucial role of regional InnPr in fostering economic development and competitiveness. It calls on stakeholders to actively engage in and support these initiatives, highlighting the need for regional collaboration and streamlined processes for adopting innovation. By adopting these strategies, the document envisions a future where InnPr is integral to regional development, driving economic growth and societal benefits. This initiative-taking approach aims to position the public sector as a catalyst for innovation, ultimately benefiting European companies and communities

¹ (*) PU = Public; PP = Restricted to other programme participants (including the Commission Services); RE = Restricted to a group specified by the consortium (including the Commission Services); CO = Confidential, only for members of the consortium (including the Commission Services)

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The opinions expressed and arguments employed in this document do not necessarily reflect the official view from the European Union and other PREPARE consortium partners. Responsibility with the views and data expressed therein lies entirely with the authors.

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Executive summary

This document aims at fostering regional implementation of innovation procurement (InnPr) across the EU, in the framework of the PREPARE project. It provides an extensive overview of the current of innovation procurement and demand-driven innovation, detailing its significance, frameworks, and regional analysis of Bucharest (Romania), Oulu (Finland), Murcia (Spain) and Skåne (Sweden).

Chapter 1 provides an Overview of Public Procurement of Innovation. InnPr is highlighted throughout the document as a strategic approach for both public and private sectors to procure novel solutions addressing specific needs, turning from traditional methods that focus on established products. Key principles include:

- Defining outcome-based specifications,
- Engaging in early market dialogue,
- Promoting competition, and
- Fostering long-term partnerships.

This strategy positions organisations as leaders in innovation and sustainable development.

Following, **chapter 2 focuses on the EU Legal Framework and Funding.** This section provides an in-depth look at the EU's Legal Framework governing procurement, covering strategies, directives, guidance, and case law. Understanding these legalities is crucial for navigating and complying with the procurement landscape. Additionally, various funding sources and competitive calls at the European, national, and regional levels are identified, thus facilitating the integration of key policy programs into the PREPARE Joint Programme.

16 case studies are included to demonstrate successful InnPr practices. These examples underscore how regional efforts can drive innovation and economic growth.

Chapter 3 elaborates on a detailed regional analysis, presenting methodologies and specific findings from each region. This analysis reveals challenges and successes in implementing InnPr across different contexts.

Finally, the document provides with **chapter 4: conclusions and recommendations.** The document concludes by emphasising the crucial role of regional InnPr in fostering economic development and competitiveness. It calls on stakeholders to actively engage in and support these initiatives, highlighting the need for regional collaboration and streamlined processes for adopting innovation. Three main areas of action are identified:

- Economic challenges. Include inadequate resources and benefit calculations.
- Process inefficiencies. Focus on clarifying responsibilities and enhancing knowledge sharing.
- Cultural barriers. Need to shift from a fear of failure to an exploratory mindset, supported by strong leadership.

To address these areas, several solutions are proposed:

- Establishing clear connections between vision, strategy, and implementation.
- Developing structured processes to support the entire innovation journey.
- Creating a comprehensive framework for innovation ecosystems to facilitate collaboration across organisations.
- Capacity building initiatives

By adopting these strategies, the document envisions a future where InnPr is integral to regional development, driving economic growth and societal benefits. This proactive approach aims to position the public sector as a catalyst for innovation, ultimately benefiting European companies and communities.



1 Overview innovation procurement.

1.1 Innovation procurement

Innovation constitutes one of the essential factors for one country's economic growth, which is why it occupies a notable place in European and national policies. Furthermore, it is one of the keys to job creation, medium-term growth, productivity and, ultimately, improving competitiveness.

In order to promote innovation in both companies and public entities, the Innovation Procurement (InnPr) aims to promote innovation in the public and private sectors through public procurement, so that solutions are incorporated. innovators in Public Administrations and innovation in companies is encouraged.

InnPr is a strategic approach used by public and private organisations to acquire innovative solutions that address specific needs or challenges. Unlike traditional procurement, which focuses on purchasing established products or services, InnPr actively seeks out new, creative, and advanced solutions that can provide significant improvement or novel capabilities. A) InnPr improves Public Services by incorporating goods or service; b) Promotes Business Innovation and, therefore, economic growth and c) Promotes the internationalization of innovation using the local public market as a launch for reference client.

InnPr is an instrument that can be used by any entity or body from the Public Sector that has the status of contracting authority and provides a public service in whose scope it detects a need or deficiency that cannot be addressed through the acquisition of goods or services. offered by the market.

Frequently, innovative solutions that are already available or nearly available in the market in small quantities can address challenges without the need for new Research & Development (R&D). This is where Public Procurement of Innovative solutions (PPI) can be effectively utilized.

However, in situations where there are no solutions close to the market and new R&D is required, Pre-Commercial Procurement (PCP) can be employed. PCP allows for the comparison of the advantages and disadvantages of various competing solution approaches. This process, in turn, facilitates the de-risking of the most promising innovations in a step-by-step manner, from solution design and prototyping to development and initial product testing.

By formulating a proactive InnPr strategy that synergistically employs PCP and PPI, public purchasers can stimulate innovation from the demand side. This empowers the public sector to expedite the modernization of public services while simultaneously opening up opportunities for European companies to achieve global leadership in new markets. Establishing optimal conditions for the broad commercialization of innovative solutions is also a crucial step towards creating jobs and fostering economic growth.

InnPr brings substantial benefits to procurers:

- **Enhances better value for money.** Leveraging collective buying power exceeds the purchasing capabilities of individual procurers, enabling economic operators to offer better value for money. This advantage arises from economies of scale, as the larger potential market and higher value contracts encourage most cost-effective production. This approach is particularly beneficial when the identified needs are common among multiple procurers at local, regional, national, or European levels, especially in fragmented markets that require a unified demand signal.
- **Reduced costs.** The costs associated with preparing and executing procurement process (including administrative expenses and non-administrative costs such as testing and acquisition) can be significantly lowered and distributed among participating procurers. Joint procurement is particularly useful for addressing needs that individual procurers cannot afford to meet on their own due to limited financial resources.
- **Combines skills and expertise.** Participating procurers can pool their knowledge, expertise, and skills. For example, one procurer may contribute substantial economic expertise, while another may offer extensive

legal knowledge or experience in InnPr. This collaboration allows procurers to learn from each other and improve their capabilities in innovative procurement practices.

- **Promotes standardisation.** It can drive the development of both de fact and de jure standards. This enhances interoperability among the system of participating public procurers. Such standardisation is particularly advantageous when coherence, interoperability, interchangeability, or interconnectivity is needed.

1.2 Demand driven innovation: key concepts.

InnPr, is one of the instruments available within the **Demand-Driven Innovation** approach. A customer-centric strategy that prioritizes understanding and responding to market needs to guide the development of new products, services, or processes. This approach involves deep market research, data-driven insights, and customer co-creation to identify and address unmet needs. Utilizing agile and lean methodologies, companies iteratively develop and test minimum viable products (MVPs) to refine their offerings based on continuous customer feedback and co-creation. This method fosters cross-functional collaboration, ensuring innovations are sustainable and scalable. By focusing on real customer demands, demand-driven innovation enhances the likelihood of market success, increases customer loyalty, and provides a competitive edge. However, it requires flexibility and effective integration of insights to address rapidly changing market dynamics.

The principles of early market dialogue, outcome-based specifications, encouraging competition, iterative development, flexibility, transparent evaluation, long-term partnerships, and sustainability integration are key to successfully implementing InnPr. This strategic approach not only enhances the effectiveness and efficiency of solutions but also positions organizations as leaders in innovation and sustainable development.

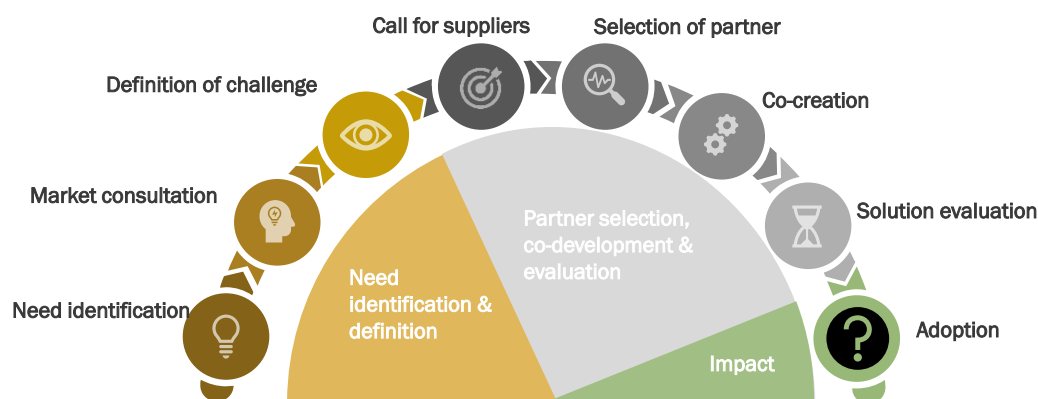


Figure 1: Demand driven approach innovation cycle.

Needs Identification and Assessment

Needs identification and assessment are foundational to the procurement process, particularly in ensuring that solutions are relevant, effective, and efficient in meeting the actual needs of end-users. It helps in strategic planning, avoiding urgent problems, engaging the market effectively and achieving economies of scale.

The process begins with a thorough assessment of the region's needs. This involves identifying areas where innovation can significantly improve public services, efficiency, or quality of life for residents. Stakeholders, including public sector entities, businesses, and citizens, are often involved in this stage to ensure a comprehensive understanding of the needs.

- **Understanding real needs.** Identifying and understanding the real needs of end-users ensures that solutions are designed to address the actual requirements of the users. This involves engaging with a broad spectrum of stakeholders to capture diverse needs and formulate them in functional terms.

- **Avoiding unmet needs.** Early and proper needs identification help to avoid the risk of unmet needs turning into urgent problems. It allows for time enough to understand these needs comprehensively and ensure that legislative, policy requirements and internal KPIs/objectives are met on time.

Market analysis

An initial market analysis can be used to determine whether the market is ready and technically able to deliver the requirements, whether any technological advancements or good/service developments are expected, and how many suppliers can provide any solutions to sustainability issues.



Figure 2: Market consultation activities.

Before formal procurement, the procurers engage in market consultation to explore potential solutions available in the market. This step helps in understanding the current technological landscape, gauging supplier interest, and identifying innovative capabilities that can address the identified needs. It also helps in shaping the procurement requirements and specifications.

State-of-the art analysis is only one research activity. Further activities could include market engagement (including engagement via eTenders, direct contact with suppliers or events such as a Meet the Buyer) and engagement with end-users, subject-matter or industry experts, and relevant policy leads in the area being considered. Contracting organisations can undertake market analysis in the following ways:

- **State-of-the-art Analysis:** Validation of unmet needs. It involved reviewing all publicly available information, including existing products, ongoing developments, and published ideas, regardless of their InnPr protection status. If solutions already exist in the market that meet the needs or are expected to become available soon, InnPr might not be necessary, allowing resources to be allocated more effectively.
- **Intellectual Property Rights (IPR) Search:** An IPR search helps verify the novelty of the Research & Development (R&D) or innovative solutions being considered. This ensures that the efforts can be protected by IPRs, indicating that the project has innovative value. It can also reveal if there are existing entities that own key IPRs needed for the project. It helps assess if these IPRs introduce significant risks or costs that could undermine the business case for the project.
- **Analysis of the regulatory, certification, standardization environment:** This analysis helps ensure that the developed solutions meet legal, safety and performance requirements, fostering trust and enabling market adoption. By thoroughly analysing these aspects, public procurers can mitigate risks, ensure **compliance**, and enhance the market readiness and adoption of innovative solutions. It is critical for the success of InnPr projects.
- **Drafting the Business Cases for the Procurer to Start an InnPr:** It provides economic justification and strategic guidance for public procurers. This process involves a comprehensive analysis of costs versus benefits for unmet needs and helps in prioritising these needs based on their potential impact.
- **Open Market Consultation (OMC)** Open Market Consultation plays a pivotal role in InnPr. By incorporating these practices, OMC helps ensure that the procurement process is transparent, competitive, and aligned with market capabilities, leading to more successful and innovative procurement outcomes. It offers significant benefits:



Definition of the challenge

Challenge definition helps in defining the subject-matter and technical specifications for launching tenders and ensuring that the procurement process aligns with the mid- and long-term objectives of the public procurer.

The challenges will be defined based in the need identified and after a well-conducted needs assessment and an effective open market consultation. It ensures that the identified needs are well-documented and communicated, which is key for engaging potential suppliers and fostering innovation.

Ensuring that the identified needs are shared by multiple potential buyers or end-users enables the development of scalable, interoperable, and more cost-effective solutions.

Call for suppliers

Based on the needs assessment and market consultation, a **tailored procurement strategy is developed**. This strategy outlines the procurement objectives, methods, and criteria for evaluation. It often emphasizes innovation, sustainability, and cost-effectiveness. The strategy may include different procurement approaches such as pre-commercial procurement (PCP) or public procurement of innovative solutions (PPI).

Following, procurers issue a call for tenders, inviting suppliers to submit proposals. The tender documents clearly specify the requirements, evaluation criteria, and expected outcomes. This stage encourages suppliers to propose innovative solutions that can meet the region's needs effectively.

Overall, drafting a comprehensive and precise tender documentation is vital for the success of InnPr, ensuring a fair, transparent, and legally compliant process.

By implementing robust IPR and confidentiality strategies, public procurers can attract high-quality suppliers, protect valuable IPR, ensure legal compliance, and foster a collaborative environment conducive to innovation. These strategies are essential for maximising the benefits of InnPr and achieving successful project outcomes.

A well-conducted procurement procedure secures transparency, equal treatment, and non-discrimination for all parties involved. These builds trust and ensures that the procurement process is open, fair, and competitive.

Selection of providers

The procedure involves a structured approach to selecting providers and awarding contracts. This includes evaluating bids against exclusion and selection criteria and technical and financial criteria, ensuring a thorough and fair selection process.

The submitted proposals are evaluated based on predefined criteria, which typically include innovation potential, feasibility, cost-effectiveness, and alignment with regional goals. The evaluation process is rigorous and transparent, ensuring that the selected solutions are the best fit for the region's needs.

Once the evaluation is complete, contracts are awarded to the selected suppliers. The implementation phase follows, where the innovative solutions are developed, assessed, and deployed. Region Skåne closely monitors the implementation to ensure that the solutions meet the expected standards and deliver the anticipated benefits.

Cocreation

The co-creation process as a form of open innovation that creates great opportunities for businesses to meet and exceed their customers' expectations and gain a competitive advantage. The key elements to make cocreation successful are a) vested interest in the mutual success to ensure full involvement; b) quality of the relationship; c) model of engagement offering a clear shared space to collaborate and d) commercial and legal considerations.



Define from the beginning commercials that are mutually beneficial for both parties, including contracts dealing with IP issues and confidentiality. Also, providing appropriate feedback to providers and holding regular progress monitoring meetings helps keep project goals on track.

Solution evaluation

After implementation, there is a follow-up phase where the performance and impact of the innovative solutions are assessed. This includes evaluating the benefits, identifying areas for improvement, and ensuring that the solutions are sustainable in the long term. The feedback from this phase is crucial for future InnPr processes.

Monitoring the performance of the economic operator during the execution of the contracts helps ensure that objectives are being met and allows for timely corrections if necessary. The capacity to collect and evaluate performance data is key. This involves formal reporting, informal communications, and possibly onsite inspections or field audits to gather direct information about service quality and compliance.

Training public procurers in contract monitoring and defining clear policies and procedures are essential for maintaining a consistent and high-quality monitoring process.

Adoption

Following up on the commercialization of solutions is important to ensure that the innovations developed are successfully brought to market. This includes monitoring the market positions of suppliers and the fulfilment of contractual obligations that extend beyond the contract period. If suppliers fail to commercialise the solutions, the procurer may need to intervene by requesting licenses be given to other vendors under fair conditions.

Properly preparing for subsequent procurements is critical. This involves analysing the evolution of IPRs outside the initial procurement's scope and ensuring a competitive supply chain is maintained to avoid monopolies or oligopolies. Actions may include requiring licenses from suppliers to other vendors on fair terms to preserve market competitiveness.

1.3 Importance and benefits of innovation procurement at the regional level.

At the regional level, InnPr is a powerful tool for driving economic growth, enhancing public services, and fostering sustainable development. By prioritising innovation, regions cannot only address local challenges more effectively but also build a competitive, inclusive, and sustainable future. Its strategic implementation can lead to significant economic, social, and environmental benefits, making it a relevant component of regional development strategies.

It will facilitate the connection of the most promising innovation projects to the appropriate European.

Innovation procurement at the regional level refers to the strategic approach where regional governments and organisations focus on acquiring innovative solutions to meet local needs and drive regional development. This approach is crucial for fostering economic growth, improving public services, and enhancing the overall quality of life in the region.

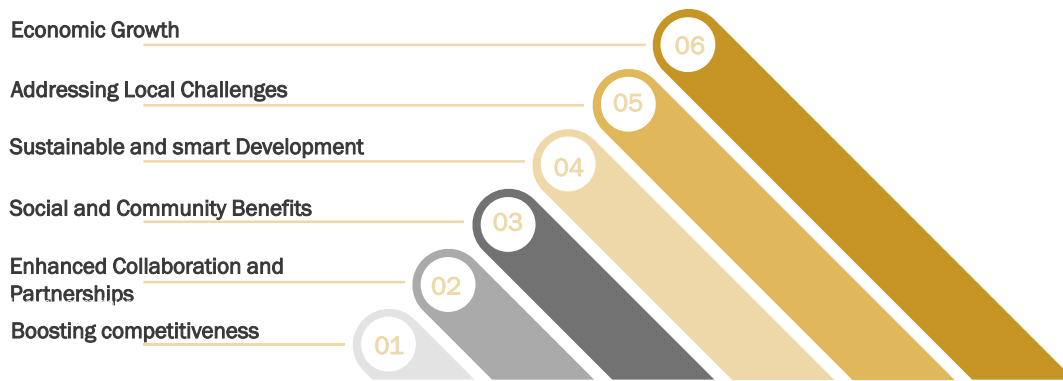


Figure 3: Benefits of InnPr at regional level.

There are key importance and benefits of InnPr at regional level:

- Economic Growth.
 - Stimulating local companies and supporting support access to markets. By procuring innovative solutions from local business and startups, regional authorities can stimulate economic activity and create jobs. Also, local business and startups can grow and scale through contracts and opportunities provided by regional procurement initiatives.
 - Boost smart investment. Regions that actively support and invest in innovation can attract further investments from both public and private sectors.
 - Job creation. Innovation procurement can lead to the creation of new jobs, particularly in high-tech and emerging industries.
- Addressing Local Challenges.
 - Tailored solutions. Innovation procurement allows regions to address specific local challenges (e.g. decarbonisation, healthcare, infrastructure) with customised solutions.
 - Improved public services. Implementing innovative technologies and services can streamline public services, making them more efficient and cost-effective, directly benefiting residents.
 - Enhanced quality. Better healthcare, education, and infrastructure services can be achieved through innovation, improving citizens' quality of life.
- Sustainable and smart Development.
 - Environmental impact. Procuring green and sustainable solutions helps regions meet environmental goals and reduce their carbon footprint. Procurement of eco-friendly technologies supports regional sustainability goals.
 - Smart cities. Developing smart city solutions (e.g. smart grids, and intelligent transportation systems) can improve urban living conditions and resource management.
 - Resource efficiency. Innovative approaches can optimise the use of regional resources, leading to costs saving and improved sustainability.
- Social and Community Benefits.
 - Increased engagement. Innovation projects often involve community engagement, leading to increased civic participation and stronger community bonds.
 - Inclusive growth. Ensuring that innovation benefits all parts of the region can help reduce inequalities and promote inclusive growth.
- Enhanced Collaboration and Partnerships.
 - Public-Private Partnerships. Innovation procurement encourages collaboration between public authorities, private companies, and research institutions.

- Knowledge sharing. Regions can benefit from shared knowledge and best practices, leading to better outcomes and reduced risks.
- Boosting competitiveness.
 - Enhancing regional competitiveness. Regions that prioritise innovation are better positioned to compete in the global economy.
 - Supporting local innovation ecosystems. Encouraging innovation within the region fosters an ecosystem of research, development, and entrepreneurial activity.
 - Futureproofing. Investing in innovative solutions helps regions prepare for future challenges and opportunities, ensuring long-term resilience and adaptability.
 - Leadership and reputation. Regions known for their innovative approaches can gain a reputation as leaders in certain sectors, attracting talent and further investment.



2 Innovation procurement framework in the EU

2.1 State of the art of public procurement in Europe

The European Union legal framework for public procurement is a sophisticated and comprehensive system designed to ensure transparency, competition, and equal treatment across member states. At its core are the EU Public Procurement Directives ([2014/24/EU](#), [2014/25/EU](#), and [2014/23/EU](#)), which harmonize procurement procedures for public sector entities, utilities, and concession contracts, respectively. These directives mandate clear criteria for the award of contracts, emphasizing value for money, innovation, and sustainability.

The EC is reinforcing the policy framework in Europe for procurers to use Pre-Commercial-Procurement (PCP) and Public Procurement of Innovative Solutions (PPI). The EU's research and innovation funding program for 2021-2027, Horizon Europe provides EU co-financing for PCP and PPI procurements undertaken jointly by public procurers from different Member States and/or associated countries.

Additionally, the framework promotes cross-border participation by simplifying rules and reducing administrative burdens. The adoption of e-procurement platforms is encouraged to increase efficiency and accessibility. Recent developments focus on integrating strategic policy goals, such as green and social procurement, reflecting the EU's commitment to sustainable development and social responsibility. This state-of-the-art legal landscape ensures a fair, open, and competitive market, fostering economic growth and innovation within the single market.

[Benchmarking of innovation procurement investments and policy frameworks across Europe](#) enables to benchmark national policy frameworks for InnPr and national investments in public procurement of innovative solutions across 30 countries (EU 27, UK, Norway, and Switzerland)

2.1.1 Strategies

The European Commission strategies on InnPr focus on several key initiatives designed to foster innovation and improve industrial competitiveness. The [New European Innovation Agenda](#) (2022) emphasizes the need for national strategies to promote InnPr, and leverage the role of the public sector as a lead customer to modernize public services and strengthen Europe's industrial competitiveness globally recognizing it as a tool to enhance public services and stimulate the market for innovative solutions. [The White Paper on Dual-Use Technologies](#) highlights the importance of InnPr in supporting research and development, particularly in technologies that have both civilian and military applications.

The [Digital Decade Strategy](#) (2023) advocates for comprehensive action plans that encourage investments in digital InnPr, aiming to accelerate the digital transformation of public services across Europe. Horizon Europe, the EU primary funding program for research and innovation, provides co-financing for InnPr projects, supporting the development and commercialization of new technologies and solutions.

The [Innovation Procurement Observatory](#) appointed by [DG CNECT](#) started [benchmarking innovation procurement for the second time](#). It benchmarks and monitors national InnPr frameworks, providing insights and recommendations to enhance policy effectiveness and implementation.

The [EU Action Plan on Intellectual Property Rights \(IPR\)](#) focuses on improving IPR management in public procurement, encouraging the adoption of innovative solutions by ensuring that intellectual property considerations are effectively integrated into procurement processes.

The [EC communication on advanced materials](#) for industrial leadership calls for more InnPr to foster the uptake of advanced materials.



The New European Innovation Agenda

The New European Innovation Agenda (NEIA) “Framework conditions including regulations can drive or thwart the development and uptake of innovative new products and processes Challenge.”

The NEIA recognises that framework conditions, including regulations, can drive or thwart the development and uptake of innovative new products and processes. By improving these conditions, the agenda aims to facilitate the growth of deep-tech start-ups and the development of new technologies to address societal challenges. It aims to position Europe at the forefront of the new wave of deep-tech innovations and start-ups. The Agenda focuses on five flagships:

- Funding scale-ups. This aims to mobilise institutional and other private investors in Europe to invest in, and benefit from the scaling of European deep-tech start-ups.
- Enabling innovations through experimentation spaces and public procurement. This will facilitate innovation through improved framework conditions including experimental approaches to regulation (e.g. regulatory sandboxes, test beds, living labs, and InnPr).
- Accelerating and strengthening innovation in European Innovation Ecosystems across the EU and addressing the innovation divide. This will support the creation of Regional Innovation Valleys and help Member States and regions direct at least €10 billion to concrete interregional innovation projects, including deep-tech innovation for key EU priorities.
- Fostering, attracting, and retaining talents. This will ensure the development and flow of essential deep-tech talents in and to the EU through a series of initiatives such as the Innovation Intern Scheme, EU Talent Pool, Women Entrepreneurship and Leadership Scheme, and Pioneering Work on Startup Employees’ Stock Options.
- Improving policy-making tools. This will be the key to development and use of robust, comparable data sets and shared definitions that can inform policies at all levels across the EU.

These flagships are designed to create an environment where the best talent can work hand-in-hand with the best companies, and where deep-tech innovation thrives. The goal is to create breakthrough innovative solutions across the continent that are deployed widely by innovation-friendly customers.

2.1.2 Directives

The European Union has established a comprehensive legal framework for InnPr, which plays a critical role in fostering innovation within the public sector. This framework is primarily guided by several key directives and regulations that have been updated and refined over recent years.

The Public Procurement Directives 2014/24/EU and 2014/25/EU are central to this framework, having replaced earlier directives from 2004. These directives encourage public authorities to adopt more innovation-friendly procurement practices while maintaining fundamental principles of competition, transparency, and equal treatment. The new directives introduced the competitive procedure with negotiation and simplified the competitive dialogue for complex projects, providing contracting authorities with greater flexibility and more effective instruments for obtaining the best possible procurement outcomes.

The main novelty introduced by these directives is the InnPr, a new procurement procedure designed for situations where no market solutions exist. This procedure allows public authorities to partner with suppliers to co-create and implement innovative solutions, addressing specific needs through a phased approach that includes research, development, and commercialization within a single process.

2.1.3 Guidance

The EU provides a range of guidance resources to promote InnPr. These resources include practical information, webinars, and podcasts aimed at improving the professionalization of procurement on strategic issues.

The document titled [Public Procurement as a Driver of Innovation in SMEs and Public Services](#); is a guidebook developed by the European Commission to promote the strategic use of public procurement to drive innovation, particularly benefiting small and medium-sized enterprises (SMEs) and enhancing public services. It aims to provide policymakers at regional and national levels with practical guidance on supporting public procurement of innovative solutions (PPI).

[European Assistance for Innovation Procurement](#) (EAFIP) initiative provides practical support to public authorities in implementing InnPr. EAFIP offers funding opportunities, technical assistance, and capacity-building to help public buyers navigate the complexities of InnPr.

[Guidance on Innovation Procurement](#) (2021) is a non-legally binding document that provides practical guidance on innovation public procurement, explaining the concept, importance, policy framework, and practical steps for implementing InnPr.

Further Initiative are further designed to provide guidance and enhance public procurement role in fostering innovation are [Innobroker](#) and [Big Buyers](#) Initiative.

- Innobroker is designed as an intermediary platform bridging the gap between innovative suppliers, especially small and medium-sized enterprises (SMEs), and public procurers. The primary aim of Innobroker is to facilitate the procurement of innovative solutions by providing a structured Marketplace where public authorities can identify and engage with innovative products and services that meet their needs.

This initiative helps to overcome common barriers such as the lack of market knowledge and the perceived risks associated with adopting new technologies. By acting as a broker, Innobroker not only supports SMEs in gaining access to public contracts but also assists public buyers in navigating the complexities of InnPr, ensuring that innovative solutions are effectively integrated into public services.

- The Big Buyers Initiative, on the other hand, focuses on creating networks of large public buyers across Europe to promote the joint procurement of innovative goods and services. This initiative aims to harness the collective purchasing power of major public sector organizations to drive market demand for innovative solutions. By bringing together big buyers, the initiative facilitates knowledge sharing, collaboration, and the pooling of resources to address common challenges. This collaborative approach enables participants to achieve economies of scale, reduce procurement risks, and increase the market impact of their procurement activities.

The Big Buyers Initiative seeks to create a more dynamic and responsive market for innovation, benefiting both public authorities and suppliers by accelerating the adoption of cutting-edge technologies and solutions.

2.1.4 EU case law

Innovation procurement, being a dynamic and evolving field, has seen several key developments in European case law that shape its application and interpretation. Here are some notable cases and legal principles that have emerged recently.

Innovation Partnerships – Case T-745/17, Spain v. Commission (2020)

This case dealt with the application of innovation partnerships as introduced under Directive 2014/24/EU. The General Court upheld the principles of the innovation partnership procedure, emphasizing its role in promoting innovation through public procurement. The court clarified that such partnerships are valid when they aim to develop innovative products or services not yet available on the market, followed by their subsequent purchase.

<p>Competitive Dialogue and Negotiation – Case C-546/16, Montte SL v. Musikene (2018)</p>	<p>This case explored the boundaries of competitive dialogue and the use of negotiated procedures without prior publication.</p> <p>The European Court of Justice (ECJ) ruled that competitive dialogue and negotiated procedures can be used for particularly complex contracts where the contracting authority is not objectively able to define the technical means capable of satisfying its needs or objectives. This decision reinforces the flexibility available to public authorities in procuring innovative solutions.</p>
<p>Life-Cycle Costing – Case C-413/17, Roche Lietuva UAB v. AB Lietuvos Radijo ir Televizijos Centras (2018)</p>	<p>The case focused on the application of life cycle costing in the evaluation of tenders.</p> <p>The ECJ confirmed that contracting authorities can include life-cycle costs as a criterion in their procurement decisions. This approach supports InnPr by allowing authorities to consider long-term benefits and sustainability, rather than just initial costs.</p>
<p>Pre-Commercial Procurement – Case C-466/11, European Commission v. Kingdom of Spain (2013)</p>	<p>While this case predates 2021, it laid important groundwork for understanding pre-commercial procurement (PCP).</p> <p>The ECJ ruled that PCP is distinct from traditional procurement and is exempt from standard EU procurement rules under certain conditions. This distinction has allowed for more targeted and flexible procurement processes focused on R&D services.</p> <p>These developments highlight the evolving nature of InnPr within the EU legal framework, emphasizing the importance of flexibility, sustainability, and transparency in fostering innovation through public procurement.</p>

2.1.5 Key EU policy initiatives

The Partnership for Regional Innovation (PRI) pilot action

The [Partnership for Regional Innovation \(PRI\)](#)² pilot action will be closely followed to analyse the ongoing works, including the reference to ‘regulatory sandboxes’ and the strategic use of regulatory standards for innovation (Page 57 of the PRI Playbook).

On the demand side, PRI underlines the importance of regulation as a tool for innovation. A concerted use of other demand-side policies such as the creation of lead markets, the creation of innovation spaces during large physical investments, support for innovation for affordability is a key feature of the PRI approach.

On the supply side, tools that mobilise multiple sources of funding for the same goal are absolutely crucial, especially in the current juncture, where a multiplicity of often disconnected funding sources at EU level need to be brought together under a single umbrella. In addition to demand- and supply-side policy instruments, it would be important to consider tools that destabilise existing unsustainable systems.

Regional Innovation Strategies (RIS)

The RIS3s for the opportunity to refocus S3 efforts on societal outcomes with enhanced coordination across policy areas, supported by InnPr.

These focus on identifying niche areas of competitive strength, solving major societal challenges, bringing in a demand-driven dimension, fostering innovation partnerships, and aligning resources and strategies between private and public actors from different governance levels.

² <https://s3platform.jrc.ec.europa.eu/pri>



Enhanced coordination across policy areas is crucial for the successful implementation of RIS3s. It ensures policy coherence and effectively addressed the multi-dimensional policy challenges that characterize the societal outcomes targeted by the strategies.

European Partnerships³

European Partnerships serve as a collaborative platform where the European Commission unites with private and/or public partners. Their collective aim is to tackle some of the most urgent issues Europe faces through coordinated research and innovation efforts. They play a crucial role in the execution of Horizon Europe and make a significant contribution towards realising the EU's political objectives.

By fostering collaboration between private and public entities, European Partnerships play a pivotal role in preventing redundant investments and help in streamlining the research and innovation ecosystem within the EU. This approach ensures a more efficient and effective use of resources in addressing Europe's challenges.

2.2 Funding sources and competitive calls

2.2.1 European

Horizon Europe reinforces the [co-financing for public procurers](#) around Europe that address common challenges by undertaking Procurement of innovation actions jointly. The [Digital Europe Programme](#) also supports the procurement of cutting-edge digital solutions. Synergies with the Structural Funds (ESIF) can also be used to co-finance InnPr.

Horizon Europe (HE)

Since 2009, the Commission's research and innovation programs have co-financed the creation of networks of public procurers to lay the groundwork for initiating PCPs and to collaboratively execute PCPs on topics of shared interest. Given that public procurement for research and development is still underutilized in Europe compared to other regions of the world, the EU has enhanced its support for Pre-Commercial Procurements through [Horizon Europe](#).

Structural Funds (ERDF and ESIF)

The [European Regional Development Fund \(ERDF\)](#) is one of the main financial instruments of European cohesion policy. It was created in 1975 with the aim of helping to reduce the differences between the levels of development of European regions and to improve the standard of living in the least favoured regions.

In the period 2021-2027, cohesion policy has five objectives for the ERDF:

- A smarter Europe: innovative economic transformation.
- A greener, low carbon Europe.
- A more connected Europe, with strategic transport and digital networks.
- A more social Europe, making the [European Pillar of Social Rights](#) a reality.
- A Europe that is closer to its citizens, which supports local management growth strategies and contributes to sustainable urban development.

³ https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/european-partnerships-horizon-europe_en



Next Generation EU (NGEU)

Next Generation EU (NGEU) is an emergency financial instrument approved by the EU Member States with the aim of relaunching the economy after the severe effects of the COVID-19 pandemic⁹. This instrument has a twofold objective:

- To relaunch economic activity in the short term to overcome the current crisis.
- To improve growth potential with structural reforms and measures to increase productivity in the medium and long term.

European Innovation Council (EIC)

The European Innovation Council (EIC) stimulates strong collaboration between EIC top-notch innovators and public or private buyers, investors, technology giants and industrial leaders to spur new partnerships, and to modernize their services for the benefit of the EU economy.

With this aim, the EIC is embarking on its new and reinforced InnPr support programme: **Strategic Use of Innovation Procurement**.

The main goal of this unique programme is to facilitate access to procurement markets in Europe and at global level, ensuring increased market opportunities for these innovative SMEs and start-ups and contributing, at the same time, to their scaling up. The activities of this programme are open to all EIC beneficiaries from EIC Pathfinder, EIC Transition, EIC Accelerator, Seal of Excellence and Women Tech EU:

Targeting at the strengthening of the demand with the supply side, this EIC programme contains a variety of services tailored to the needs of each respective stakeholder:

- SPIN4EIC Strategic Innovation Procurement Programme
- InnoBuyer
- Tests or Proof of Concepts piloted on the services of public and/or private buyers.

2.2.2 National

Finland

[Business Finland](#)'s expert and funding services are targeted at:

- Procurement units in the public sector that aim to renew their services and operations.
- Organizations – such as municipalities, parishes, and foundations – that want to promote the transition to a low-carbon energy system.
- Public sector operators that want to cooperate with companies and research organizations
- Award grants up to 50% of the total costs of the project.

In Finland, the public sector spends approximately EUR 47 billion on procurements annually. Meeting the changing requirements of the coming decades requires unprejudiced development of solutions and operating models. By taking advantage of innovations, the public sector can provide better services to citizens at a lower cost. Thus, suppliers of services and products must also be required to innovate more. At its best, the public sector can contribute to the creation of new markets by supporting innovations by providing a development environment and acting as the first buyer of the solution.

Through innovative public procurement, your goal may be to add value, for example with:

- Lower life-cycle costs
- Better quality

- Renewed and more efficient production processes.
- Environmental friendliness
- Other development work with resources freed due to implementation of digital solutions.

What is required of your organization?

- Your organization is a public procurement entity in accordance with the Public Procurement Act and Public Procurement Act for Special fields.
- Your innovative market opening procurement is of such size that it will affect the development of the industry at least nationally.
- Your organization is ready to commit to the development of innovative procurement.

Another important national guiding program for public procurements is the **joint Procurement Finland action plan (2024-27)** led by the Ministry of Finance and co-operated by the Association of Finnish Local and Regional Authorities, Confederation of Finnish Industries and Suomen Yrittäjät (Association for the Finnish Enterprises). The joint Procurement Finland action plan aims to promote sustainability of public economy and societal effectiveness of the public procurements. The action plan publishes a lot of guides and recommendations. The content of the action plan has been updated by the newest governmental program and is about to start to implementation.

Romania

The [National Research, Development and Innovation Plan](#) (PNCDI) funds research and innovation projects across various fields promoting collaboration between research institutions and the private sector in order to transfer research results to the market, stimulating institutional performance and international collaborations.

It is a plan of 60 billion lei for the period 2022-2027, with the closure of the programs until the horizon of 2030. It is the first national plan that integrates all the financing instruments for Romanian research and is secured from amounts from the state budget, with inclusion in the limits approved by the annual laws of the state budget for the period 2022 – 2030, from external non-reimbursable funds and contributions of partners in projects, in compliance with all legal regulations in force.

PNCDI supports fundamental and exploratory research, research-development and innovation entrepreneurship and technological transfer.

The Plan is structured on 10 research-development-innovation programs and several sub-programs one of which is dedicated exclusively to the "[Innovation Partnerships](#)" aiming to carry out joint research - innovation projects based on partnership between business and public/private RDI, to support the access of economic actors to RDI services, as well as to support the development of innovation ecosystems. Each sub-program is managed by the [Executive Unit for Financing Higher Education, Research, Development](#) (UEFISCDI) offering different financial instruments as voucher, grants, seed capital, trainings, business missions, incubator or accelerator services, in order to promote and incentivize the scaling up of innovation and public-private partnerships on innovation included through co-creation.

The Health Program ([Programul Sănătate – PS](#)) is a multi-fund program (ESF+ and ERDF funding), with a total allocation of €5.88 billion, which follows up the efforts of the state and local budgets in implementing the National Health Strategy 2022-2030 by financing investments in both pre-hospital and hospital care and in health system resilience, with a focus on: cancer diagnosis and treatment, transplants, communicable disease control (including healthcare associated infections), national transfusion system, etc.

The program will also support the development of healthcare research and innovation solutions and the development and use of digital technologies to facilitate access to information and education. Since 2023 its implementation in Bucharest-Ilfov region has been delegated to the Regional Development Agency with reference to certain specific priorities.

Competitive calls

Name call: [Experimental Demonstrative Project](#)

Purpose: To realize and assess demonstration models (functional, experimental) for new or significantly improved products, technologies, methods, systems, or services in areas of national smart specialization or that address challenges in the Strategic Research Agenda.

The project can be proposed by a research organization (public or private law) together with a company conducting R&D activities. Projects start from a TRL 2/3 technological maturity level (formulated technology concept/experimental laboratory demonstrator) and materialize with a TRL3/4 technological maturity level (experimental laboratory demonstrator/laboratory validated technology), with an implementation period of 12 to 24 months.

Name call: [Transfer project to the economic operator](#)

Purpose: To increase the competitiveness of the economic environment by assimilating the RDI results of research organizations and transferring these results to the market.

The project is coordinated by an enterprise in partnership with at least one research organization (public or private). The intervention supports projects that start from a technology validated under laboratory/relevant operating conditions (TRL 4/5 technology maturity level) and lead to a technology demonstrated in terms of functionality in the industrial environment (TRL 6 technology maturity level).

The duration of a project is between 12 and 24 months. For projects reaching a higher level of maturity, i.e. TRL 7/8 (prototype demonstrated in the operational environment/ pre-commercial demonstration) the amount of support may be increased, and the duration of the project may be extended by up to 6 months.

Spain

CDTI

[CDTI](#) (Centre for Technological and Industrial Development) is a Public Business Entity under the Ministry of Science, Innovation and Universities that promotes innovation and technological development of Spanish companies. Its objective is to channel requests for aid and support for R&D&I projects from Spanish companies at the national and international levels. CDTI offers companies agility and flexibility in its support services for the development of R&D business projects, the international exploitation of technologies developed by the company and the realization of offers for technological-industrial supplies to scientific and technological organizations.

From 2018 the CDTI drives the ICC in the form of Pre-Commercial Public purchase (CPP). Under this instrument, the CDTI acquires services of R&D to develop prototypes of first products or services, in the form of test series technologically innovative, and that would meet public needs. The prototype developed within the framework of these PCP caving in to Spanish Public Entity that is interested in the same and to provide the necessary environment for real validate the technology developed. The prototype will be used only as a technology demonstrator, in order to validate technology, not for commercial purposes. These initiatives are co-financed mainly from European funds.

ERDF 2021-2027

In the period 2021-2027, Spain will receive 23,397 million euros⁴ which will be distributed in 19 Regional Programs (1 per Autonomous Community and Autonomous City) and a Pluri-regional Program, which will serve as the main instrument for planning the actions of the General State Administration.

D2.1 Innovation Procurement state of the art knowledge asset

In Spain, 3 categories of regions are established at NUTS2⁵ level: less developed, transition and more developed regions. The Region de Murcia⁶ is among the regions in transition, so it has a co-financing percentage of 60%, compared to 85% for the less developed regions or 40% for the more developed regions.

[Line for the promotion of Innovation from Demand \(FID\)](#) is a program of the Ministry of Science, Innovation and Universities aimed at promoting Public Procurement of Innovation (PPI) actions among public sector organizations and entities. The FID Line offers co-financing from the European Regional Development Fund (ERDF) 2021-2027 Multiregional Program, co-financed by the European Union and the General State Administration.

The objective of the FID Line is to improve innovation and business competitiveness, attracting funds for business R&D&I through contracting. It also seeks to strengthen the commercialization of innovation by using the public client as a launching or reference client. In addition, it stimulates entrepreneurship and innovation, particularly in SMEs²⁹.

For the period between 2021 and 2027, a total amount of 252 million euros³⁰ of ERDF funds will be available for the co-financing of operations in this line of public procurement of innovation.

MINISTRY OF SCIENCE

The “[Map of the InnPr in Spain](#)” constitutes an unprecedented study in Spain aimed at achieving a global perspective of the actions regarding Public Procurement of Innovation carried out by different public agents during the last six years (2017-2022). These data can be useful both for public administrations and for the rest of the participants in CPI processes. In the case of the Ministry of Science, Innovation and Universities, having this first approximation to the real state of the InnPr in our country will facilitate strategic decision-making within the framework of the policy to promote this tool at the state level. Access to the Map by visiting [Plan de Ciencia](#).

ANCES

[ANCES](#) (National Association of European Business and Innovation Centres) is an entity that promotes innovation and technological development of Spanish companies. ANCES works to promote the development of Spanish BICs, to provide its members with systems, services and activities that serve to achieve their objectives, and to collaborate in the innovation and diversification of productive activity, technological progress, and economic development.

[ANCES Open Innovation](#) is the Open Innovation program of ANCES. Since 2017, large, consolidated companies, leaders in their fields, launch their technological challenges, authentic challenges in innovation to which startups and young innovative technology-based companies respond. Throughout the editions of ANCES Open Innovation, it has established itself as an initiative to establish stable collaboration agreements between the driving companies and those other companies that have managed to respond to their technological demands and challenges.

As for companies from the Region of Murcia that have been involved in ANCES Open Innovation, there are several examples. In the 2021 edition, the companies from Murcia [Proasistech](#), [Onmi Engineering](#) y [Neoradix](#) reached the final of the contest²⁵. In the 2023 edition, the Murcian companies [Bleecker Technologies](#) y [Biyectiva](#) also reached the final²⁶. In addition, the Murcian company [Soltec](#) has been involved in ANCES Open Innovation as a Challenger company²⁷.

Sweden

In Sweden, there are several opportunities for funding and competitive calls for innovation projects. Vinnova, Sweden's innovation agency, is a key player, offering various calls for proposals to support research and innovation that benefit society. They provide funding for projects that demonstrate high potential and feasibility, and they regularly update their calls to match current innovation needs.



Another important source is [Formas](#), which funds strategic innovation programs in areas like sustainable development and environmental research. Additionally, the European Union's Horizon Europe program offers opportunities for collaborative projects with European partners.

2.2.3 Regional

Bucharest-Ilfov Region

The [Programul Operational Regional \(POR\) Bucharest-Ilfov 2021-2027](#) is designed to enhance regional development by improving economic competitiveness, promoting sustainable development, and improving the quality of life for residents. The program is managed by the Bucharest-Ilfov Regional Development Agency (ADRB). The scope of POR Bucharest-Ilfov includes various sectors such as infrastructure, business environment, and social services. The program aims to leverage EU funds to address regional disparities and support the region's growth through strategic investments.

City of Oulu

In Oulu Region significant part of public procurement is conducted within ERDF and ESF project. Rules, practices, and conventions many times does not promote innovative and demand-driven procurement unless organisation which implements project, deploys more effort for innovative procurement. Most of the procurements of the municipalities are covered by own public funds (gathered by taxation).

Region of Murcia

Instituto de Fomento de la Región de Murcia

[Instituto de Fomento de la Región de Murcia \(INFO\)](#) is the economic development agency of the Autonomous Community of the Region of Murcia. This entity is attached to the Regional Ministry of Universities, Business and Research and its objective is to promote and boost regional economic growth and development.

INFO is responsible for stimulating competitiveness, innovation, employment and its quality, and the productivity of the business fabric of the Region of Murcia, with special attention to small and medium-sized enterprises and social economy enterprises.

Among its functions are the development of innovation projects in digital transformation, development and incorporation of emerging technologies, transformation towards a low-carbon economy or incorporation of the circular economy in the business model of SMEs. In addition, INFO offers various grants and subsidies to support companies in their innovation and development projects.

The Instituto de Fomento currently has the following financing calls:

Financing for Innovation	<ul style="list-style-type: none"> ▪ Business R&D&I ▪ ICT Innovation Check ▪ CAETRA (Dual-Use Technologies Ecosystem) Services ▪ EiBTs/Escalables Grants
Innovation Services	<ul style="list-style-type: none"> ▪ FINNANCIA ▪ Servicio Peral ▪ EENSEIMED
Investment Financing	<ul style="list-style-type: none"> ▪ Regional Incentives Program ▪ Productive Investment Assistance Program ▪ Entry of investments in innovative companies with high growth potential ▪ Investment Check ▪ Business Park Endowment and Refurbishment

Internationalization	<ul style="list-style-type: none"> ▪ Participation in trade fairs and trade missions ▪ Internationalisation of MAKE companies. ▪ Internationalisation Check
Sustainability and EU Projects	<ul style="list-style-type: none"> ▪ Energy Efficiency and Industrial Processes ▪ Sustainability Check ▪ Europe Check

Table 1: Funding calls from INFO

CROEM (Regional Confederation of Business Organizations of Murcia)

[CROEM](#) is an organization that represents and defends the interests of businesspeople in the Region of Murcia. Its objective is to promote the economic and social development of the Region of Murcia through the representation, management, defense, and promotion of business interests.

[Incoova Program](#) is an initiative developed by CROEM and financed by the Instituto de Fomento de la Región de Murcia (INFO). This program is based on open innovation and its objective is to identify and develop entrepreneurial talent to create successful companies together. Through this program, all Incoova's resources are made available free of charge so that participants can launch their business idea.

Fundación Isaac Peral Open Innovation

The [Fundación Isaac Peral](#) is a private non-profit organization created in 2017 and sponsored by the Instituto de Fomento. Its objective is to promote technological cooperation between large companies and SMEs in the Region of Murcia. The Foundation contributes to the development and strengthening of the industrial and technological ecosystem of the Region of Murcia, promoting, among other aspects, the work of technology suppliers.

Isaac Peral Open Innovation ([IPOI](#)) is an initiative that seeks to connect entrepreneurs and large companies that launch technological challenges to capture innovative ideas from around the world that help solve specific problems and strengthen and develop the industrial and technological ecosystem and innovative potential in the region. Innovative companies can offer solutions to the challenges proposed by IPOI companies.

Region Skåne

Region Skåne offers various funding sources and competitive calls to support innovation. The region collaborates with public and private actors to enhance research, innovation, and business growth. Key initiatives include investment promotion, support for local businesses to increase competitiveness, and strengthening the job market.

Key funding sources include Region Skåne itself, state funds, and EU funds. Specific programs like ALF (Medical Training and Research Agreement), the Swedish Research Council, and foundations such as the Swedish Cancer Society and the Swedish Heart-Lung Foundation are significant contributors.

The Research and Innovation Council of Skåne (FIRS) focuses on six specialization areas with growth potential (Advanced Materials and Manufacturing, ESS, MAX IV, and the Science Village Innovation System, Food, Life Science and Health, Smart Sustainable Cities and Tech), aiming to boost international competitiveness and address societal challenges.

Additionally, Region Skåne offers various grants and stipends for businesses and organizations, which can be applied for through their official channels.



2.3 Successful case studies

Public procurement offers an enormous potential market for innovative products and services. Used strategically, it can help governments boost innovation at both the national and local level and ultimately improve productivity and inclusiveness. Based on good al local level PREPARE has identified 16 case studies that could be taken as a reference: Full information is included in Annex I

Case studies	Where	Sector
OuluBOT	City of Oulu, Finland	Tourist local services
OuluINFRA	City of Oulu, Finland	Infrastructure
Sanction – Bonus Instrument in Piece Work/Procurement: Maintenance of District Bike Roads	City of Oulu, Finland	Infrastructure maintenance service
Zero emissions vehicle – Hydrogen Vacuum Cleaner and Electric Garbage Trucks	City of Rotterdam, the Netherlands.	Waste collection services
iBuy project	Bucharest-Ilfov, Romania	Capacity building
Innovator of the Public Administration Pilot Programme	Bucharest-Ilfov Region and National	Capacity building
The Public Procurement Guide	Romania, National.	Support services
Leveraging the SEAP Digital Platform for InnPr	Bucharest-Ilfov Region, Romania	Support services
Energy efficient refurbishment of tertiary building by Barcelona Municipality	Cataluña, Spain	Net zero energy buildings (NZEB)
Incircle: Pilot Demonstrator in Palma.	Palma, Balearic Islands, Spain.	Waste management and reduction of waste generation
Plugging the next-generation IoT into a data-driven city in Spain	Cartagena, Region of Murcia, Spain	Urban security, surveillance
Smart City Platform in Logroño	La Rioja, Spain	Hub for the collection and use of information and data
Biobased disposable aprons	Region of Skåne, Sweden	Healthcare
Fall prevention in hospital care	Region of Skåne, Sweden	Healthcare
Remote care of heart failure patients	Region Skåne, Sweden	Healthcare
Human centric light in neonatal award	Region Skåne, Sweden	Healthcare

Table 2: Best practises identified.



3 Regional analysis

3.1 Methodology

The gathering of information regarding awareness, degree of experience, challenges and barriers associated with innovation adoption including InnPr was carried out by leading an open dialogue with key innovation players (challengers, solvers, supporters), and stakeholders (policy makers, funders, instrument managers), within the whole innovation chain in the regional innovation ecosystem in each region of Finland, Rumania, Spain and Sweden. The aim was to collect critical insights and capacitation needs and will serve as a base for Work Package 3 – Joint programme and action plans, both on a regional and European level.

The regional stakeholders were split in two groups according to their role within the InnPr process.

Type 1: Stakeholders. Public Authorities with the mandate to promote innovation, procurement, or both within their region. Their roles include Policy Makers, Instrument Managers and Funders which may be located in different departments in the same organization or different public bodies. Representatives from regional administration, most important municipalities, public universities, defense bodies, and sectorial public agencies are part of this group. They have these roles:

- *Policy Maker.* Defines innovation policies, e.g. within RIS3 or PRI, and its related implementation instruments.
- *Instrument Manager:* Rolls out policy instruments, e.g. launches calls, awards beneficiaries, supervises execution and transfers payments.
- *Funder:* Assigns funds (e.g. ERDF) to invest on innovation policies and instruments.

Type 2: Innovation players. This umbrella term captures the quadruple helix members of the ecosystem that participate in a concrete InnPr project. Their roles are:

- *Challengers:* Organizations with an unmet need (*challenge*) that requires innovation to be solved. They can be *Public Procurers* (e.g. Healthcare organizations or Municipalities) or *Big Buyers*, referring to large organizations market traction power due to their size and relevance.
- *Supporters:* clusters, associations or consultancies that can help to matchmake and deliver business value to the previous types and the whole ecosystem.
- *Solvers:* entities with the capacity to solve challenges. Examples include Small and Medium Enterprises (SMEs), deep-tech startups, universities, and technological centres.
- *Knowledge,* referring to the research and innovation organizations in the regions able to provide knowledge.

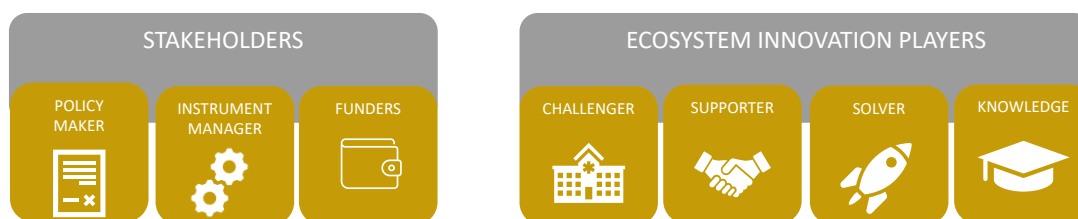


Figure 4: Typology of regional stakeholders and actions.

The public sector, academia, and industry are constantly evolving to better understand frameworks and opportunities to solve societal challenges through innovation jointly. Policymakers, instrument managers, and funders, on their part, need ongoing insight into how they can best equip and support stakeholders, researchers, and the business community.

By analysing, practising, and evaluating collaborations between the different actors, the ability to innovation work and the implementation of innovation can gradually improve. It is therefore of utmost importance that all innovation actors are involved and given the opportunity to conduct joint dialogues to increase understanding of conditions and opportunities and jointly create a better arena.

First step was to create the regional stakeholders mapping where the most relevant key innovation players and stakeholders were identified for each region and invited to either one or two of the four following activities.

- **Semi-structured interview** including questions focused on implementation of innovation, internal culture, barriers, and challenges as well as experiences of InnPr.
- **Survey** distributed by Microsoft Forms, translated into regional language, was sent out to innovation players in the region and focused on questions around topics as organisations, collaboration, drivers and barriers for innovation implementation and procurement.
- **Focus groups** with stakeholders and policy representatives were conducted to gather the different perspectives and insights that can enhance the development and implementation of new measures for Innovation adoption. It fostered a sense of ownership and accountability among participants, encouraging broader support and adherence to innovation.
- **Workshops** based on material and findings from interviews and surveys to discuss problems, needs and possible solutions on how to better implement innovation.

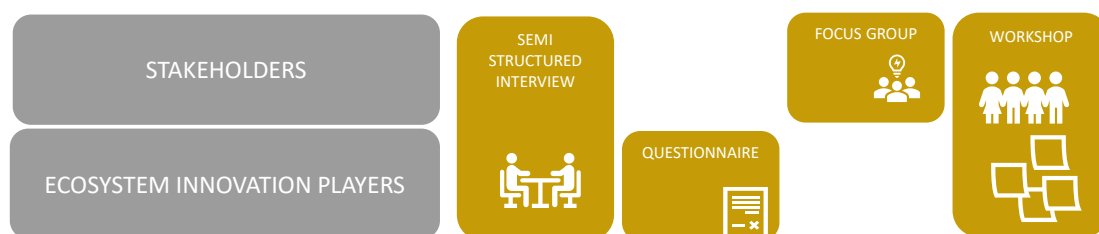


Figure 5: Actions implemented to gather information.

To motivate innovation player and stakeholder participation the project partners used storytelling, what is in it for them and how they can contribute to the system change that is needed for extended implementation of innovation and attached power point presentations about “PREPARE in a nutshell.” Per project principles and potential societal challenges, every region ensured a diverse representation in terms om gender and urban/rural dimensions.

The participant contribution was anonymized when results were categorized and summarized.

	Interviews	Questionnaires	Focus groups (number/participants)	Working groups (number/participants)
Bucharest-Ilfov (RO)	10	22	3/18	3/23
Murcia (ES)	34	16	1/24	1/23
Oulu (FI)	9	9	1/11	2/44
Skåne (SE)	9	37	-	1/47
Total	62	75	5/52	7/147

Table 3: Overview of the regional participation



3.2 Regional Findings

3.2.1 Bucharest Ilfov

Regional framework for public procurement

The Bucharest-Ilfov regional priorities for public procurement are guided by the policies and strategies of the Bucharest-Ilfov Regional Development Agency (ADRBI), which aligns with national and European Union directives.

The local needs and innovation priorities in the Bucharest-Ilfov region focus on enhancing competitiveness, promoting sustainable development, and improving the quality of life. [The Regional Development Plan 2021-2027](#) emphasizes areas such as digitalization, green projects, and intelligent and sustainable economic growth. Key sectors include ICT, health, energy, and urban mobility.

Legislation

Romanian public procurement laws are primarily governed by Law No. 98/2016 on Public Procurement, Law No. 99/2016 on Sectorial Procurement, Law No. 100/2016 on Works and Services Concessions, and Law No. 101/2016 on Remedies and Appeals concerning the award of public procurement contracts. These laws implement EU Directives 2014/23/EU, 2014/24/EU, and 2014/25/EU, establishing procedures like open and limited public tenders, competitive dialogue, and innovation partnerships.

Innovation procurement therefore has been introduced by Law No. 98/2016 which states that the contracting authority may, by way of exception to the classical procedures open or restricted tender procedure, award public contracts/ framework agreements by applying the competitive dialogue or innovation partnership procedures in reasonable and duly justified specifying the maximum amounts of the procurement.

Key policy programmes

Romanian government initiatives collectively aim to create a supportive environment for innovation, encouraging the development of new technologies and the growth of innovative businesses in Romania. Here are some key governmental initiatives:

The **National Strategy for Research, Innovation, and Smart Specialization 2022-2027** ([Strategia Națională de Cercetare, Inovare și Specializare Inteligentă 2022-2027](#)), developed by the Ministry of Research, Innovation, and Digitalization in Romania, outlines the vision for the Romanian research-innovation system by 2030. It focuses on recognizing and supporting excellence, stimulating public-private collaboration, and fostering sustainable development. Key objectives include developing the research system, supporting innovation ecosystems, mobilizing towards innovation, and enhancing European and international collaboration.

Romania's national policy objectives for research, innovation, and smart specialisation focus on strengthening research and development capacity by improving infrastructure and enhancing human resources. The strategy emphasizes enhancing innovation through public-private partnerships, developing innovation ecosystems, providing financial support, and creating a supportive regulatory framework. The Smart Specialisation Strategy (S3) identifies priority sectors with competitive advantages, supports regional development, and improves technology transfer mechanisms. Additionally, the strategy promotes international collaboration with European and global partners and aims to address societal challenges in health, sustainability, and digital transformation.

Innovation is central to Romania's strategy, aiming to transform the economy by fostering a culture of creativity, entrepreneurship, and technological advancement. Key elements include:

- Innovation Culture: Promoting an innovation-driven mindset across all sectors of society, including education, business, and government.

- Startup Ecosystem: Supporting the growth of startups through incubators, accelerators, and access to funding and markets.
- Disruptive Technologies: Emphasizing the development and adoption of disruptive technologies such as artificial intelligence, blockchain, and the Internet of Things (IoT).

At regional level, the strategy for smart specialisation focuses on leveraging the region's strengths in key sectors like ICT, creative industries, health, and energy to drive innovation and economic growth. The strategy aims to develop a robust innovation ecosystem by fostering collaboration between universities, research institutions, and the private sector. Enhancing human capital through education and training, supporting startups and SMEs with access to funding and business services, and improving infrastructure are central objectives. The region also prioritizes sustainability by promoting renewable energy and green technologies. International collaboration is encouraged to enhance global competitiveness. Additionally, the strategy addresses societal challenges by advancing healthcare systems, digital transformation, and overall quality of life, all while fostering a culture of innovation and technological adoption. Innovation is at the heart of the Bucharest-Ilfov regional strategy. The region aims to foster a culture of innovation by encouraging creativity, supporting entrepreneurial initiatives, and promoting the adoption of cutting-edge technologies. The goal is to create a dynamic and resilient economy driven by innovation and knowledge.

The **National Research, Development, and Innovation Plan (PNCDI)** is a comprehensive program that funds research and innovation projects across various fields. It aims to enhance the research infrastructure, support scientific research, and encourage collaboration between research institutions and the private sector.

Example: to stimulate creativity and research-development-innovation, UEFISCDI, the Executive Unit for the Financing of Higher Education, Research, Development and Innovation, a public institution subordinate to the Ministry of National Education, annually launches project competitions, such as those of the PED type (Projects Experimental Demonstrations), whose role is to financially support the creation and testing of demonstrative models (functional, experimental) for new or significantly improved products, technologies, methods, systems or services in areas of national intelligent specialization or that address challenges from the Strategic Agenda Research.

The **Romanian National Strategy for Public Procurement 2023-2027** aims to modernize and streamline public procurement processes to enhance efficiency, transparency, and competitiveness. It focuses on aligning national procurement practices with European Union standards, improving the legal and regulatory framework, and increasing the professionalism and capacity of public procurement authorities. The strategy promotes the use of electronic procurement systems to reduce bureaucracy and enhance accessibility. It also emphasizes sustainability by incorporating green procurement practices and ensuring social responsibility in procurement decisions. For InnPr, specific measures include encouraging the adoption of innovative solutions and technologies through procurement processes, fostering public-private partnerships to drive innovation, and supporting the development of innovative products and services by providing platforms and opportunities for startups and SMEs to participate in public tenders. These measures aim to stimulate the market for innovative goods and services, contributing to economic growth and addressing societal needs.

Other initiatives

Initiative	Description
Start-Up Nation Program	This program provides financial support to new businesses, particularly those focusing on innovative products and services. It offers grants to startups to cover initial costs, thereby encouraging entrepreneurship and innovation.
Innovation Clusters	The government supports the creation and development of innovation clusters, which are geographical concentrations of interconnected companies and institutions in specific fields. These clusters facilitate collaboration, knowledge sharing, and innovation.
Technological Transfer Offices (TTOs)	TTOs are established to bridge the gap between research institutions and industry. They help in transferring research outcomes to the market, promoting the commercialization of innovations.

Digital Innovation Hubs	These hubs provide support to companies in their digital transformation processes. They offer access to digital technologies, expertise, and funding opportunities to enhance innovation in various industries.
Fiscal Incentives for R&D	The government provides various tax incentives to encourage private investment in research and development. These include tax deductions for R&D expenses and tax credits for innovation activities.

Table 4: Additional policy programmes in Bucharest-Ilfov

Key stakeholders

37 stakeholders have participated in the process, predominantly from public administration and general sectors, indicating a strong representation from governmental and broad-spectrum entities involved in innovation policy making. Other significant sectors include education, research, and venture capital, which are crucial for fostering innovation and supporting InnPr through funding and research initiatives.

Types of Stakeholders and Innovation actors	<ul style="list-style-type: none"> ▪ Public Administration Organizations (PA): 16 stakeholders ▪ Others: 8 stakeholders ▪ Venture Capital: 7 stakeholders ▪ Research Funding Organisation (RFO): 6 stakeholders
Sectors represented	<ul style="list-style-type: none"> ▪ General (GRAL): 14 stakeholders ▪ Education R&D (EDU / RDI): 3 stakeholders ▪ Horizontal: 3 stakeholders ▪ Construction: 1 stakeholder ▪ Physics: 1 stakeholder ▪ Information and Communications Technology (ITC): 1 stakeholder

Table 5: Stakeholders & innovation actors participating in the Phase I of PREPARE in Bucharest Ilfov

Drivers and Motivations

	Positive Aspects
Identifying Needs	Clear identification of innovation needs helps in directing resources and focusing efforts. Open collaborations between the public and private sectors can generate relevant innovative ideas.
Evaluation and Selection	Structured evaluation processes allow for the selection of the most promising innovations.
Implementation	Flexible and adaptable policies facilitate the rapid implementation of innovations.
Innovation Management	Informed and engaged leadership can promote a pro-innovation culture and ensure necessary resources.

Table 6. Factors driving regional InnPr in Bucharest-Ilfov

Based on gathered information and inferred insights from the interviews, some of the key motivations for innovation adoption across economic, social, and environmental dimensions are as follows:

Economic Motivation

- **Cost reduction and efficiency improvement:** organizations adopt innovation to reduce costs and improve operational efficiency. Innovations in processes and technology can streamline operations, reduce waste, and lower expenses.

- **Competitive advantage:** innovation is crucial for maintaining and enhancing competitive advantage. By adopting new technologies and processes, organizations can differentiate themselves in the market.
- **Revenue growth:** innovations can open up new revenue streams and markets. By developing new products and services, organizations can attract new customers and increase their market share.
- **Job creation and skill development:** innovation can lead to job creation and the development of new skills. As organizations adopt new technologies, there is a need for skilled professionals to implement and manage these innovations.

Social Motivation

- **Improved quality of life:** innovations, particularly in healthcare and public services, aim to improve the quality of life for individuals and communities.
- **Social equity and inclusion:** innovation can promote social equity by making advanced technologies and services accessible to a broader population. Also relevant that innovation projects address the needs of diverse and underserved populations, promoting social inclusion and reducing inequalities.
- **Improving Public Services:** Innovative procurement can lead to better public services in healthcare, education, transportation, and public safety, directly improving the quality of life for residents. Customized solutions to improve / introduce new public services are often explored under European-funded projects or co-created with collaborators. The larger the administration, the higher the probability for innovative solutions. No attempt to apply InnPr. Public procurement procedures of design competitions are mainly applied for art, urban planning, and architectural-related solutions.
- **Community Engagement:** Engaging citizens in the co-creation of innovative solutions fosters a sense of ownership and enhances community well-being.

Environmental Motivation

- **Sustainability and environmental protection:** organizations adopt green innovations to reduce their environmental footprint and promote sustainability. Innovations in energy efficiency, waste reduction, and sustainable practices are key drivers. Integrating sustainability criteria in procurement processes can promote the use of environmentally friendly technologies and practices. Innovation procurement can drive the adoption of green technologies that reduce carbon footprints and help mitigate climate change.
- **Regulatory compliance:** environmental regulations often motivate organizations to adopt innovative solutions to ensure compliance with laws and standards.
- **Corporate Social Responsibility (CSR):** many organizations pursue innovation as part of their CSR initiatives, aiming to contribute positively to society and the environment.
- **Resource Efficiency:** Promoting solutions that enhance the efficient use of resources, such as energy-efficient buildings and waste reduction technologies.

Challenges and barriers

Common challenges faced in regional InnPr.

Problem/Obstacle	Description and context
Lack of Regional Strategy/policies	<p>Policy-driven initiatives address broad societal challenges, integrating various sectors and promoting inclusive growth.</p> <p>Policymakers needs to provide clear strategic direction and frameworks for innovation, ensuring that initiatives align with regional or national priorities.</p> <p>The lack of clear direction and well-defined objectives in innovation policy can lead to disorganized and inefficient efforts, making it difficult to measure success and adjust strategies.</p> <p>Government policies may be insufficient or poorly adapted to support innovation effectively. This includes the lack of adequate incentives for organizations to innovate and for suppliers to develop new solutions as VAT exemptions.</p>



<p>Complexity of Procurement Process</p>	<p>Public procurement processes for innovative products and services are often complex and hard to navigate. This can discourage both innovation providers and government departments from actively participating in these initiatives. The bureaucratic processes slow down the pace of innovation.</p> <p>The stages of the innovation process for effective collaboration between the actors involved are perceived as not structured clearly while the public procurement process (SEAP) is perceived as complex and cumbersome.</p> <p>The lack of clear, universally accepted definitions for innovation-related terms can lead to confusion and inefficiency, in legislation and practice, making it difficult for organizations to align their innovation strategies and practices.</p> <p>This clarity is crucial for effective communication and implementation across different sectors. Innovation procurement was the one subject either never heard or too superficial. While standardization (e.g., through ISO standards) provides a structured approach to innovation management, there is also a need for flexibility to adapt to specific contexts and emerging challenges.</p>
<p>Open innovation: Public-private collaboration difficulties</p>	<p>Establishing effective partnerships between the public and private sectors for the development and implementation of innovations can be difficult.</p> <p>Successful innovation often requires collaboration between public institutions, private companies, and research organizations. Such partnerships can pool resources and expertise, driving more effective and sustainable innovation. The local research-innovation ecosystem is often unstructured, rather opportunistic, including the innovation clusters. Although difficult to initiate such collaborations, their general dynamic is a positive one in recent years.</p> <p>Cross-sector collaboration between policymakers, generalists, and specialists can enhance the innovation process by combining strategic oversight with technical expertise.</p>
<p>Requirements definition</p>	<p>Effective coordination and synchronization between the requirements of buyers and the offerings of innovation suppliers can be difficult, leading to procurements that do not meet the organization's innovation objectives.</p>

Table 7: Common challenges identified in InnPr in Bucharest-Ilfov

Regulatory barriers and legal constraints.

Problem/Obstacle	Description and context
<p>Limited knowledge</p>	<p>There is insufficient knowledge and unclear guidelines regarding relevant legislation.</p>
<p>Strict regulations Rigidity and restrictive interpretation</p>	<p>Supportive regulations play a significant role in facilitating innovation. Properly designed policies can either stimulate or inhibit the adoption of innovative solutions.</p> <p>Existing regulations and standardised procedures can hinder private innovation initiatives due to rigidity and restrictive interpretations which can limit the ability to innovate. The need to comply with regulations can delay or complicate the adoption of innovative solutions, in the context of Romanian legislation and standard 16555.</p> <p>International standards can impose requirements that are difficult to implement locally. but also, the difficulties in consistently maintaining these standards in various situations represents barriers.</p>
<p>Evaluation</p>	<p>The need for clarity and transparency in public procurement processes in order to avoid conflicts of interest.</p> <p>Eligibility and selection criteria for innovation funding can emphasize other characteristics of the proposal as well as the innovation.</p>

Table 8. Regulatory barriers and legal constraints in Bucharest-Ilfov

Financial and resource limitations.

Problem/Obstacle	Description and context
Funding and incentives	Insufficient budget allocations and financial incentives can hinder both the development and adoption of innovations. This can include inadequate grants, tax credits, and other forms of financial support.
Inefficient resource allocation	The lack of proper resource allocation and management can lead to inefficient use of funds and human resources, impacting the success of innovation projects. There is need for a well-defined system to support innovation through adequate financial and human resources. The correct allocation of public funds and resources can support innovation projects and procurement plans, facilitating a more organized and impactful innovation process. Innovation efforts well-coordinated across different levels of government and sectors, ensuring that resources are used effectively.
Innovation costs	Innovations are often expensive, requiring significant financial resources. High costs associated with innovation, particularly in sectors like healthcare, pose significant challenges. Financial limitations restrict the ability to invest in new technologies and innovative solutions, slowing down the adoption process.

Table 9. Financial and resources limitations in Bucharest-IIfov**Cultural and organizational challenges.**

Problem/Obstacle	Description and context
Innovation management and culture	An organizational culture that does not support innovation can stifle new ideas and initiatives. This often involves a preference for traditional methods and a fear of change. Resistance from within the organization, due to a lack of understanding of the benefits of innovation or fear of failure, can prevent the successful implementation of innovative solutions. Also, there is an organizational culture and resistance to change from employees and management. Innovation initiatives often face pushback, making it challenging to implement new processes or technologies effectively. Difficulties to balance formal and informal processes for managing innovation. Some aspects of innovation are managed more ad-hoc depending on the situation, which can lead to inconsistencies.
Engagement and cooperation	There is often a lack of effective collaboration between departments and with external partners. Difficulties in ensuring effective cooperation between researchers and industry but also the challenges of maintaining constant and efficient innovation within organizations. Without strong internal and external partnerships, organizations struggle to leverage collective expertise and resources, limiting innovation potential. <ul style="list-style-type: none"> Knowledge transfer organisations bring research results and scientific knowledge into the innovation ecosystem, fostering evidence-based policy making and innovation strategies. Although limited research results and scientific knowledge is confronted with the market needs and often the patents remain without industrial use, these stakeholders represent the largest reservoir of innovative solutions to public and industrial challenges, as well as sectorial experts, if industry and public administration approached them more. Universities and research organisations: innovation is often applied for internal needs. Open innovation is applied if needed, collaboration is mainly sought with the industry. Venture capital and research funding organizations provide the necessary funding for startups and innovative projects, complementing public funds with private investment. They also take on higher-risk projects, which are essential for achieving breakthrough innovations that might be too risky for public funding alone. Facilitators need to organise dialogue between actors in the innovation ecosystem

Capacity building needed

The lack of adequate human resources and organizational culture can hinder innovation. Organizations may lack the necessary support systems and infrastructure to pursue and sustain innovative projects.

There is a need to increase the involvement of stakeholders from specialized fields to provide deeper expertise and focus on niche technologies. Research and innovation organisations count on a talent pipeline: these institutions help develop a skilled workforce, ensuring that there are knowledgeable professionals to implement and sustain innovative initiatives. This is true for few universities which research facilities are equipped with state-of-the-art apparatus, allowing for graduates to get familiar with them and receive the most leveraging support for their initiatives. There is a consensus on the importance of continuous education and training to keep stakeholders updated on the latest innovation knowledge and best practices. Employees and stakeholders may not be equipped with the latest knowledge and skills needed to support and implement innovative solutions. Education / training on InnPr was considered as a prerequisite both for public administration and innovation actors.

Table 10. Cultural and organisational challenges in Bucharest-Ilfov

Regional expertise

In the Bucharest-Ilfov Region there is still a lack of mature cases of innovative projects in the field of public procurement, which is why the focus is still on raising awareness of the new legal framework of the InnPr as a tool for co-creation initiatives between public and private entities aimed at boosting regional innovation. Here are some virtuous cases where stakeholders participated in training activities or were provided with conceptual tools to explore new methodologies for public procurement through an innovative approach.

- The pilot program called "[Innovators of the Public Administration](#)" aimed to enhance introductory knowledge of innovation in the public sector. Key stakeholders included the *National Institute for Administration* and the *Innovation Lab of the Government General Secretariat*. The program involved training public administration staff on innovation as a prerequisite for InnPr initiatives. The outcomes were an increased innovation capacity in public administration, gained competences in innovation by public officers, and insights on innovation labs methodologies. During the pilot have been addressed challenges as convincing public administration authorities to explore innovation, linking innovation theory to practical challenges, and overcoming barriers to InnPr.
- The "[Public Procurement Guide](#)," an interactive online tool administered by the *National Public Procurement Agency (ANAP)*. The guide provides comprehensive support to participants in the public procurement process across Romanian regions. It includes modules on sustainable public procurement, green procurement, social procurement, and InnPr. The guide's flexible, modular design allows for regular updates and adaptations to regulatory changes. Challenges faced include developing an interactive, updatable operational guide and ensuring it leads to significant improvements in the public procurement system.

Summary of key points (SWOT analysis).

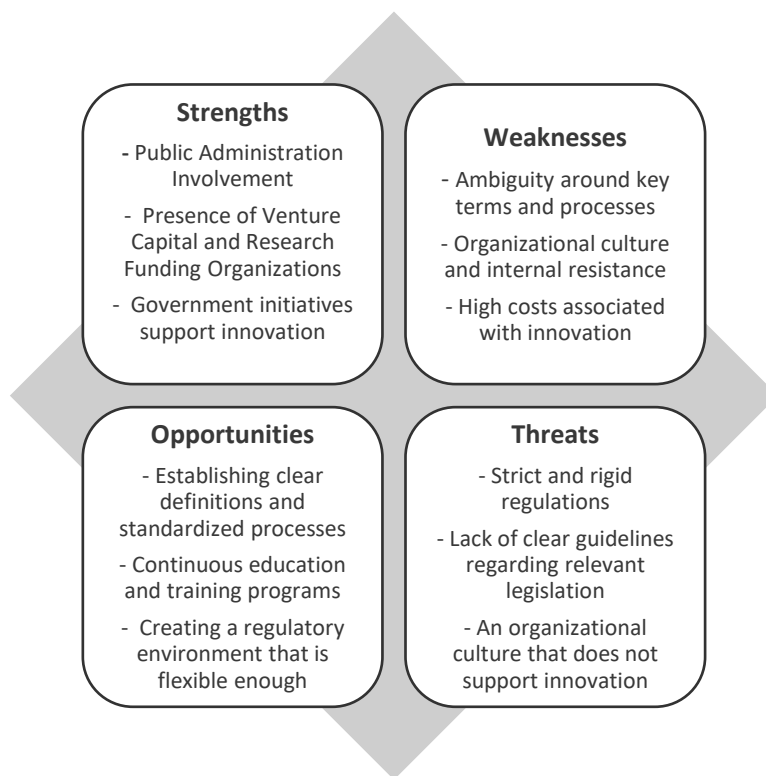


Figure 6: SWOT Analysis from Bucharest-Ilfov

Guidelines for Action Plan

The results emerging from the interaction with the stakeholders and innovation players clearly reflect the current level of knowledge and practice of InnPr in the habitual procurement activity from those public and private bodies in the Bucharest-Ilfov region. Those findings lead to the identification of the following priority areas to overcome the challenges and take advantage of the opportunities identified.



Figure 7: Action Plan areas in Bucharest-Ilfov

- Strategic Measures:
 - Reforming and modernizing legislation is essential.
 - Clear and simplified guidelines and standards should be introduced.
 - Financial incentives for innovation investments should be provided.
 - Promoting a culture of innovation and risk acceptance within organizations is crucial.



- Collaboration and Partnerships:
 - Facilitating public-private collaborations through platforms and partnerships is necessary.
 - Bureaucratic barriers in forming partnerships within national competitions should be reduced.
- Process Simplification:
 - Simplifying the public procurement process (SEAP) is recommended.
 - Organizations need better information and presentations of available solutions.
- Capacity building
 - Continuous education and training to keep stakeholders updated on the latest innovation knowledge and best practices.

3.2.2 Murcia

According to the [Regional Innovation Scoreboard \(RIS\)](#) of the European Commission, the Region of Murcia is a 'moderate innovator' region with an innovation performance that has been increasing over time. This Scoreboard collects Regional Innovation Indicators (RII) of the 220 regions that make up the 22 countries of the EU.

The following diagram shows the strengths of the Region of Murcia compared to Spain (orange) and the EU (blue). Trademark applications can be highlighted as a strength, while non-R&D innovation expenditure can be considered as a weakness.

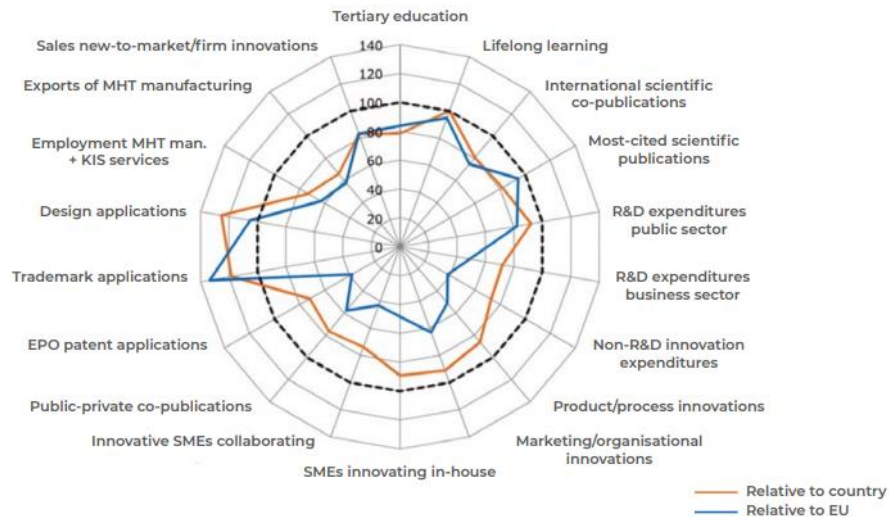


Figure 8: Comparison of Regional Innovation Index (RII) between the Region of Murcia, Spain, and E

Region of Murcia takes advantage of all the knowledge and experience gained so far and, avoiding fragmentation of policies, ensures that the transformation through R&D&I is effectively filtered into all regional strategies, maximising its impact.

To achieve all these challenges, it is so important to consider the relevance on the Region of Murcia of the three different universities: [Universidad de Murcia \(UM\)](#), [Universidad Politécnica de Cartagena \(UPCT\)](#) and [Universidad Católica San Antonio de Murcia \(UCAM\)](#).

- Universidad de Murcia.
 - **Fields of Expertise:** Broad range of disciplines including humanities, social sciences, natural sciences, health sciences and law.
 - **Special Programs:** Known for its strong programs in Biology, Medicine, and Environmental Sciences. It also offers various research opportunities and international collaborations.
- Universidad Politécnica de Cartagena.
 - **Fields of expertise:** Engineering, technology, and applied sciences.
 - **Special Programs:** Specialises in civil, industrial, naval, and telecommunications engineering. UPCT is recognised for its focus on innovation, research in engineering fields, and partnerships with industry.



Figure 9: Universities in the Region of Murcia

- Universidad Católica San Antonio de Murcia.
 - **Fields of Expertise:** Emphasises health sciences, sports sciences, and business studies.
 - **Special Programs:** UCAM is renowned for its sports-related programs, physical therapy, and international business. It also offers numerous programs in English and maintains close connections with professional sectors.

In addition to Universities, Technology Centres are key for Regional R&D. They arose as a **response to the difficulties posed by the transfer of knowledge from the scientific to the productive environment** in an industrial structure made up mostly of small and medium-sized enterprises (SMEs). Their mission is to provide services to member companies in terms of advice and technical assistance, technological dissemination, standardisation, certification, laboratory services and industrial quality, training, international cooperation, and R&D&I projects. There are **nine Technology Centres in the Region of Murcia**, which have around 2,000 client companies and provide more than 25,000 services per year³. Although there is a certain agglomeration in the Metropolitan Area of Murcia, the Technology Centres are spread throughout the region, specialising in productive sectors of great importance in the industrial network:

- Footwears and Plastics ([CETEC](#)),
- Information and Communication Technologies ([CENTIC](#)).
- Marble and Stone ([CTMarmol](#)),
- Metal ([CTMetal](#)),
- Construction ([CTCON](#)),
- Energy and Environment ([CETENMA](#)),
- Furniture and Wood ([CETEM](#)),
- Naval and Marine ([CTN](#))
- Canning ([CTC](#)),



Figure 10: Technology Centres in the Region of Murcia

Within the framework of these organizations that work in different activities that stimulate the business and industrial network of the Region, we should add:

- [Confederación Empresarial de la Región de Murcia](#) (Business Confederation of the Region of Murcia, CROEM). This is the most representative business organisation in the Autonomous Community, with a presence in all the productive sectors of the Region.
- [Federación Regional de Empresarios del Metal](#) (Regional Federation of Metal Entrepreneurs, FREMM). Its main purpose is the management and defence of the economic, social, and professional interests of its members, as well as promoting the greatest economic and social development of the Metal Sector.
- [Fundación Isaac Peral](#). A commitment to improving public-private cooperation in the field of technology and industry in the Region of Murcia.
- [Parque Científico de Murcia](#). Murcia Scientific Park offers an environment where companies can develop in innovation spaces and collaborative areas.
- [Parque Tecnológico de Fuente Álamo](#). Fuente Álamo Technology Park is a space to work on the union between science-technology-business.
- [Centro Europeo de Empresas e Innovación de Murcia](#). European Business and Innovation Centre of Murcia's mission is to promote the entrepreneurial spirit of Murcian society and to encourage the consolidation and modernisation of companies through innovation.
- [Centro Europeo de Empresas e Innovación de Cartagena](#). European Business and Innovation Centre of Cartagena has as corporate purpose is the search, reaction, development, and consolidation of business initiatives.
- [Instituto Murciano de Investigación y Desarrollo Agrario \(IMIDA\)](#). Murcia Institute for Agricultural Research and Development's objective is to seek solutions in the agri-food and environmental fields that allow regional companies to adopt efficient and sustainable production technologies that improve their competitiveness and profitability.

Regional framework for public procurement

Legislation

Public procurement refers to the process by which public authorities, such as government departments, local authorities or state-owned enterprises, purchase goods or services from the private sector.

Public procurement rules ensure that public money is effectively use when public authorities make purchases from the private sector. The **standard** way of awarding contracts for goods to businesses is competitive tendering, which allows the greatest number of firms to bid. Within competitive tendering, there are diverse types of public procurement procedures.

National regulations in the EU member states are transposition of EU directives and each member state drives its own national/regional/local specificities according to the national administrative situation.

As far as the Region of Murcia is concerned:

National Regulations & Platforms	<ul style="list-style-type: none"> ▪ Law 9/2017, of 8 November, on Public Sector Contracts, transposing into Spanish law the Directives of the European Parliament and of the Council 2014/23/EU and 2014/24/EU of 26 February 2014. ▪ National Platform for Public Procurement
Region of Murcia Regulations & Platforms	<ul style="list-style-type: none"> ▪ Decree 175/2003, of 28 November, which regulates the Regional Administrative Contracting Board of the Region of Murcia and lays down rules on the classification of companies. ▪ Decree 121/2002, of 4 October, which regulates the Public Register of Contracts and the Register of Tenderers of the Autonomous Community of the Region of Murcia. Regional profile of public bodies. ▪ Regional Profile of Public Bodies ▪ Regional Management Body for Public Procurement ▪ Access to Public Procurement Announcements from the Region of Murcia

Table 11: Region of Murcia legal framework with regards to Public procurement

Key policy programs

The Region of Murcia has wide experience in the field of strategic planning, with political autonomy (depending on matters, legislative and executive powers) and financial autonomy; at the same time, there is a full collaboration and coordination with the Central State Administration, in the area of R&D&I, in particular through the Network of Public Policies R&D&I (Red IDI).

In the framework of the strategic planning process, the Region of Murcia particular attention is given to the involvement of the main actors concerned in order to identify the objectives and measures to achieve them, with an agreed common vision. The [new Regional Strategic Plan 2021-2027](#) is currently being finalised and includes the vision and objectives of economic, social and territorial development of the Region of Murcia for the coming years, as well as an ambitious and realistic action plan to implement them. All this, aligned with the European challenge of a recovery that responds to the twin green and digital transition.

The Strategic Plan will function as an umbrella for the new programming period of the European Structural and Investment Funds for 2021-2027, and for the different sectoral regional strategies that are currently in the process of design and adoption, and which are outlined below.

The Strategic Plan aims to improve the quality of life of the citizens of the Region, as well as to ensure economic growth through the strengthening of the regional production model and the business sector, the promotion of employment and training/skilling and lifelong learning, the commitment to talent, innovation and knowledge, the enhancement of R&D&I, connectivity and environmental sustainability. In particular, it aims to make spatial

planning and environmental sustainability a cross-cutting element and a key tool for the implementation of the different sectoral policies. In line with the EU new growth strategy, the European Green Deal, it identifies the environment as an opportunity for sustainable, territorial, social and business development and pays particular attention to improving resource efficiency, in line with the circular economy model, in particular as regards water management or waste management, and the commitment to renewable energy. Furthermore, as the 8 Cohesion Report points out, innovation is the key determinant of regional economic growth in the long term, hence significant efforts and resources are invested in tackling the regional innovation gap, on the one hand, through investment in R&D&I, but also committed to boosting, improving and strengthening the regional innovation ecosystem.

The [RIS4 Region of Murcia 2021-2027](#) is a key element of the Regional Strategic Plan, as a strategic framework for the transformation through R&D&I of the business fabric, including the digital and sustainable dimensions, leading to greater economic growth, skilled job creation and social development. At present, a draft of this strategy has been submitted for public consultation and will soon be submitted to the Governing Council (highest collegiate executive body of the Autonomous Community) for final approval.

In the 2014-2020 period, the first Smart Specialisation Strategy for Research and Innovation of the Region of Murcia, RIS3Mur, was launched. RIS3Mur allowed to concentrate resources on areas key to the Region because of its comparative and competitive advantages. Prioritisation in these areas (agrofood, health, tourism, habitat, logistics and transport, water and environment and ICT) has resulted in multiple advantages and benefits, and today allows us to design and implement more efficient and sustainable territorial development policies to ensure economic growth through R&D&I. This first experience in the Region of Murcia has served as a reference to address with greater guarantees a new reflection process on the model of regional smart specialisation for 2021-2027. Likewise, the experience and results of the mechanisms that have involved all the actors concerned within the framework of the RIS4 have inspired other processes of co-creating public policies, enriching, and legitimising their actions and objectives.

Regional government initiatives

Regional policies are designed to support and encourage innovation. Government initiatives, such as INFO funding programmes, play a crucial role in providing resources and technical support for innovation projects. These programmes aim not only to fund innovation but also to facilitate collaboration between different actors in the regional innovation ecosystem.

To achieve so, INFO Murcia has created in Spring 2024 a new Innovation Procurement service at INFO, aimed at promoting innovative public procurement in the regional innovation ecosystem composed by both regional public administration and business environment. Some three working priorities have been selected to be implemented in the second semester of 2024.

		DEMAND SIDE (Public bodies)	OFFER SIDE (Companies)
RAISING AWARENESS ON InnPr	JOINT KICK-OFF EVENT	Target: public bodies & companies Objective: presentation of this new line of action in October 2024	
	PREPARATION OF AN InnPr GUIDE	Objective: Kick-off the activity. Generate trust, you do not start from nothing. October-November 2024 INFO assisted by a specialized consulting firm	Objective: Understand InnPr, identify, and resolve main difficulties, etc. October-November 2024 INFO assisted by a specialized consulting firm
	INITIATION TO NEWCOMER ON InnPr	Objective: Make key concepts known - Include InnPr in your budget planning Real or virtual workshops September 2024	



<p>TRAINING ON InnPr</p>	<p>ADVANCED TRAINING WORKSHOPS ON InnPr</p>	<p>Objective: Key concepts of InnPr, planning an InnPr process, Training to conduct an InnPr process. Early 2025 Via the Regional desk for the training of public regional employees.</p>	<p>Objective: Approach to InnPr tenders. Conducting training workshops. INFO assisted by a specialized consulting firm</p>
<p>PREPARATION AND PROCUREMENT OF InnPr TENDERS</p>	<p>PILOT EXPERIENCE IN THE MURCIA REGION</p>	<p>Target bodies: those participating in PREPARE 2.1. DIAGNOSYS Method: Bilateral meetings with INFO Objective: selection of the first InnPr pilot in the Murcia region Conditions for a successful InnPr tender:</p> <ul style="list-style-type: none"> ▪ Decision to initiate an InnPr (planned or initiated a process of identifying needs to be resolved by InnPr) ▪ Budget for the project (budget planning) and commitment from management bodies ▪ Invest time. <p>Accompaniment & assessment from INFO (preparatory phase)</p> <ul style="list-style-type: none"> ▪ Generation of a multidisciplinary team to detect the needs to be resolved by IPI – Early demand map. ▪ Connection with actors providing innovative solutions (companies, universities, research organizations, technology centres, etc.) ▪ Preliminary market consultations ▪ Tendering process ▪ Development of innovative solutions (perfection of the contract) ▪ Communication of results and Good practices <p>Early 2025</p>	

Table 12. Activities to be implemented by innovation procurement service of INFO.

In this context, INFO is cooperating with both regional and national boards for Public Procurement. Eventual synergies for the benefit of the InnPr operators in the Murcia region (public stakeholders and private companies) are to be explored.

Key stakeholders

This work has been the core of PREPARE task 2.1. and was carried out with the following actors, committed to these strategies, aimed at the economic transformation of the Region of Murcia, with a broad perspective, which involves different Directorates-General, main municipalities, public universities, sectorial governing bodies and other public entities - as these tables show - which ensures to a greater extent the achievement of the measures agreed to meet the major territorial, economic and social challenges.

Types of Stakeholders	<ul style="list-style-type: none"> ▪ Regional and local Public Administration Organizations (PA): 24 stakeholders ▪ Business and social organisations: 4 stakeholders ▪ Research and innovation: 5 stakeholders. ▪ Others: 9 stakeholders
Sectors represented	<ul style="list-style-type: none"> ▪ General (GRAL): 19 stakeholders ▪ Environmental services: 6 stakeholders ▪ Education / Research, Development, and Innovation: 4 stakeholders ▪ Tourism and culture: 3 stakeholders ▪ Health and social. 3 stakeholders ▪ Emergency services: 3 stakeholders ▪ Infrastructures: 2 stakeholders ▪ Defence: 2 stakeholders

Table 13: Stakeholders participating in the Phase I of PREPARE in Region of Murcia

42 public bodies based in the Murcia region were identified as those habitually publishing their public procurement tenders in the tenders portals from the [Murcia region public administration](#) of the [national public procurement webpage](#). Some 18 out of 42 entities positively responded to INFO Murcia over March. Also, 55 Innovation platers were identified and 15 of them participated actively in the gathering information activity: interviews, questionnaire, and workshops.

The first contact was issued to those public bodies by email dated February 2024. Subsequently, phone contacts were issued in March 2024 to all of them with a view to:

- Check their real engagement with public procurement in the target bodies.
- Identify the relevant contact person.
- Check about their knowledge of Innovation procurement or eventual interest in this contractual tool.
- Provide the questionnaire on InnPr and request for a deep interview.

Drivers and Motivations

Within the Region of Murcia, several key drivers for the adoption of public procurement of innovation have been identified on the policy side. These include the need to improve the competitiveness of regional businesses, job creation, and improved public services for citizens. The need to adapt to trends such as digitalisation, sustainability or new business models drives the search for innovative solutions, both on the part of companies and the public administration.

Companies are looking to implement innovations that will allow them to differentiate themselves and improve their production processes. As mentioned before, most companies in the Region of Murcia are SMEs, even micro-SMEs. Many companies in the Region consider that innovation funding should be a tailwind for initiatives that the company has already decided to undertake and that are truly strategic. Unfortunately, there are many situations in which companies do not tackle these initiatives without prior funding, which generates immobility and dependence. In a certain sense, the funding framework is being distorted and instead of being a tailwind, it is becoming the sole driving force behind many initiatives.

Companies participate in innovation projects for the following reasons:

- These companies are usually involved in innovation projects, particularly EU-funded, to extract knowledge and bring it to the market by developing a product/service that reaches the market. They trust that R&D and knowledge will make them continue to grow as a company.
- Access to Financial support
- Achieve prestige that allows them to collaborate with large entities.
- Even if the innovation they are working on has not had a direct impact on delivering a service out of a project, they do generate learning, and allow them to evaluate the medium/long term of the topic on which the project revolves.

- Companies' objective is to leverage the results and try to transfer it to more local projects looking for business opportunity around that theme.

Initiatives such as INFO's [inDemand RCT](#) or the [Isaac Peral Foundation's Open Innovation Programme](#) promote the contracting of innovative solutions by launching challenges from companies to be solved through co-creation. These factors show the relevance of collaboration, public support, and the existence of an innovation ecosystem to boost public procurement of innovative solutions in the Region of Murcia.

Economic motivations

- **Improvement of competitiveness, increasing efficiency and reducing operating costs**, through the **access to new technologies and knowledge and development of new products and services**. Companies in the Region of Murcia are eminently export-oriented, which is why they face a great deal of competition. Improving competitiveness is key to remaining relevant in the international market.
- **Financing innovation**. Innovation funding is essential for the development of innovative projects that require significant risks and resources.
- **Increased investment in R&D and innovation**. Increase R&D expenditure to 21% of GDP to be closer to European standards. During the period 2014-2016, a change in trend has been observed, with a significant increase in regional investment in this area of GDP, while in Spain as a whole, investment has decreased every year. Moreover, in the same period, regional business investment in R&D&I has maintained an upward trend, clearly led by the industrial sector. InnPr can play a role in **boosting European Funds**, acting as a catalyst for PPI projects, providing the necessary financial support for their development. The valuable experience gained through participation in European projects and the CDTI, brings relevant knowledge and practices to the InnPr.

Social motivations

- **Motivation of Social Needs**: InnPr can be a key instrument to respond to social challenges, promoting projects that meet the needs of the community. The **Market Consultation** allows for identifying and adapting the most appropriate solutions to public needs, ensuring a better alignment between supply and demand.
- Improvement of the **quality of life** of its inhabitants through **job creation** and the development of **more effective public services**. Especially in sectors such as Health or Environment, innovations can have a direct impact on the quality of life of the citizens of the Region of Murcia.
- **Development of key skills and competences**. Education and training in innovation allow the development of key skills and competences among citizens, especially in a changing paradigm with the advent of Artificial Intelligence.
- **Open Innovation**: It fosters a collaborative environment between the public and private sectors, generating an open innovation ecosystem. Especially relevant, the **public-private collaboration**. Improving collaboration between companies, universities and technology centres can have an important impact on the development of innovations that meet customer needs. In this framework, co-creation is emphasized as an effective method to develop innovative solutions, collaborating with companies and universities.

Environmental motivations.

- **Sustainability and energy efficiency**. implementing sustainable practices that reduce environmental impact, especially in sectors such as agriculture and the food industry. Innovative solutions can also be key to improving sustainability in sectors such as water management, construction, and manufacturing.
- **Development of sustainable technologies**. This is a key aspect about to the importance of water management and energy efficiency in the Region of Murcia
- **Improving waste and waste management**. Innovative solutions can improve the management of waste and residues, such as the recycling of post-industrial multilayer films.

Challenges and barriers

Common challenges faced in regional InnPr.

It has been highlighted the importance of a regional strategic plan that guides the implementation of the InnPr, ensuring a sharp vision and objectives aligned with regional needs. When identifying challenges and requirements, choosing **less ambitious but more flexible projects** can allow for a more adaptive and customised approach to meet the Challenger's needs.

The **interaction Challenge-Solver** plays a crucial role in the successful deployment of the innovation results. In the form of 1) Preliminary consultation to market to filter possible solutions and, 2) Stable co-creation with business and universities, as an effective method to develop innovative solutions. At the time the challenges are defined, it is relevant to have the **prior involvement in the Solver selection process**. Involvement in the Solver selection process is essential. It would help to avoid unforeseen challenges and ensure that the Solver is the right one to tackle the Challenger problem.

There is a need for **alignment of project challenges with business strategy**. The alignment of the project challenges with the business strategy is vital to ensure the adoption of the developed solutions. Participating companies would be happy to share their business strategy by including it in the application as a Challenger. This would ensure that the developed solutions are relevant and easily integrated into the daily operation of the company.

When it comes to the **award and Solvency Criteria**, there is a need to establish clear and fair criteria for the award of contracts and the demonstration of technical and financial solvency is underlined. For example, including innovation criteria in contracts would help to ensure that innovative projects are prioritised and adequately supported.

About to the problems derived from the development of solutions, it is important to highlight the **different rhythms** set by the public administration and the technological development companies. In most cases, it has been detected that the company advances with its technological developments at a faster pace than the public administration is able to detect and present its needs. Mention should also be made of the **lack of operability and effectiveness**, on many occasions, of the contracting specifications. A 'standard' project, with a duration of 6-8 months, usually has an additional 2 months for the development of the specifications. Therefore, there is a **misalignment of Times** between technological innovation and procurement processes that results on delays and seize innovation opportunities. From the point of view of technology, **once the tender is issued, the specifications are already obsolete**.

It is essential to **manage the expectations and ambition of the project** from the outset can help maintain a clear and realistic approach, without losing sight of the fact that the objective must be to achieve a **minimum viable product** that can then be customised through **co-creation** and adapted according to the needs and pace established by the public administration. Regular review and updating of procurement specifications can ensure their operability and effectiveness. It is vital to identify partners who can develop appropriate solutions to specific challenges within the allocated budget. Another critical point is to set procedures to ensure **understanding between the parties**: moderation/coaching between the Solver and the Challenger needs to be offered by the instrument in order to have a fruitful relationship. A distinction must be made between outsourcing and co-creation. It is vitally important to be clear about this definition before engaging in a co-creation process, as there are certain rules of the game, which are not the same as in a client-supplier relationship.

There is need for **more comprehensive support and intermediate milestones (Adoption Touchpoints)** Such as offering coaching or mentoring during development and post-development monitoring. This would ensure that the companies involved would have a mentor, who could also function as a mediator between the two entities to avoid conflicts and misunderstandings. They would receive the necessary support to implement and commercialise their innovative solutions.



Regulatory barriers and legal constraints.

The regional strategic plan should be complemented by strengthening legislative competence to create a regulatory framework that effectively supports the InnPr. A clear allocation of responsibilities in the legislative development of InnPr can encourage greater staff involvement.

Regulatory and legal barriers are a significant obstacle. Complex and often confusing regulations make it difficult to implement innovation projects, especially for micro-SMEs that do not have the resources to navigate these legal frameworks. A **Regional Law on Science, Technology, and Innovation** is needed, with an operational Plan and adequate budget. This will be beneficial to strengthen the business network and increase the capacity to create disruptive technologies.

Some legal constraints to face are:

- **Complexity in the contracting process.** There is an increase in the complexity of contracting processes, especially since the entry of Next Generation EU funds.
- **Difficulties in the Procurement of Solutions.** There are difficulties in the mass procurement of solutions in the prototype phase, as long budget times reduce the possibilities of acquiring innovative solutions. It is key to foresee annual budget allocations to improve the adoption rates.
- **Intellectual Property Management.** For example, who takes care of software licences in case they are needed, who maintains servers, etc.
- **Need to simplify the justification process.** To simplify the justification processes to make them easier to complete would help reduce the administrative burden on both companies and the Administration. In turn, making these processes more stringent to avoid deviations and misuses.

Financial and resource limitations.

The scarcity of human and financial resources is recognised as a significant obstacle, underlining the need to invest in human capital and seek additional funding.

Funding constraints are another critical challenge since the availability of funds is limited and competitive, which restricts the scope and scale of projects that can be undertaken. Many companies rely on public funding to conduct innovation projects, and they do not undertake innovative initiatives without prior financing, which can lead to immobility and dependence.

Despite of this, according to the information gathered, the general feeling is that fewer projects should be funded, but with a larger budget. This could generate more interest and a more significant impact on the selected projects. Larger budgets relate to the following point.

The **business sector in Murcia is very imbalanced**: of the approximately 14,000 companies in the Region of Murcia, only 50 or 60 can be considered large companies, while the rest are micro and SMEs. This factor impacts on the tractor effect that larger companies have on their sectors, which can develop or implement innovations that are then adapted by the bulk of the sector. Also, these small companies have certain difficulties in allocating resources to innovation or technical areas such as R&D, marketing, Quality, etc. This makes it difficult for them to conduct innovative projects. Despite this fact, Murcia is the seventh region of Spain in the number of technological companies (144) which has generated 1.900 jobs and a wealth of 227 million euros.

It has been recognized the crucial role of INFO as an intermediary is recognised, facilitating the connection between the public sector and innovation private providers.

Cultural and organizational challenges.

The competences of the Public Administration were confused between the different lines of subsidies and the InnPr dossiers, which indicates a **need for greater training** of the competent personnel to **clarify competences** and avoid confusion. On the other hand, a **lack of responsibility** was identified in the competence of the

legislative development of InnPr, which leads to a lack of involvement on the part of the staff, generating greater ignorance.

Culturally, there is an **aversion to risk** in many companies, which discourages the adoption of new technologies and processes. Organisationally, the lack of systematised structures and processes for managing innovation hinders the integration of new ideas and technologies into day-to-day operations. Nevertheless: Innovation is risky and not all co-creations will be successful. But if they are so, they should be implemented.

The **innovation ecosystem is very diluted**, and the capacities are not well known, although there are some particularly good ones. However, it is difficult to compete with what exists in other regions. In the Region of Murcia, different centres act independently, replicating in a way the guilds that existed 50 years ago, which was a model that worked very well then, but it does not seem to do now. **There is a need for greater transversality in these services to support and promote innovation.** Therefore, according to some of the companies interviewed, **there is a need for a centre that channels, groups, and centralises regional knowledge.** From this centralising entity, challenges could emerge. However, currently, Open Innovation processes are launched from [Fundación Isaac Peral](#), [CEEIM](#), then they are launched from [INFO](#). **Capacities must be centralised to maximise them, not disaggregated.**

Best practices identification

To improve the uptake of innovation, it is crucial to identify and apply best practices that have proven to be effective. For example, the use of **co-creation** programmes where companies work closely with the public sector to develop innovative solutions has been **remarkably effective**. These programmes not only facilitate the **adoption** of new technologies but also improve the **relationship between the public and private** sector, creating a more collaborative and efficient environment. Once there is a proper environment, it would be key to also **involve the end-users** to improve the usability and ensure adoption. In the Region of Murcia, some initiatives have stood out for their success, especially in three sectors: Health, Education and Defense.

- [inDemand](#). inDemand was the **first InnPr experience of the Murcia Health System**. It supposed a **new model** in which healthcare organisations and companies created digital health solutions, with financial support from regional public funds. 24 companies co-created solutions that solved needs that were previously detected by healthcare professionals (Murcia Health System). inDemand's great commitment was to promote innovation by combining two factors: that it is the **demand** that identifies what it needs (in this case, the healthcare professionals of the Murcia Health Service) and that the development of the solution is a process of **co-creation** (healthcare professionals together with technology companies). The result was a higher success rate in digital solutions, as they have been developed together with the client, with a continuous process of feedback and a global vision of the needs. In addition, in the Region of Murcia, the companies had the opportunity to conduct a pilot experience in SMS medical centres. Within inDemand, the Murcia Health System **adopted 5 out of the 8 pilots performed**, whose means more than 60% of the adoption rate.
- [InnovaMurcia Salud](#). It is a General Innovation Plan which main objective is to **improve the quality of care** of the public service provided, as well as the efficiency and cost savings it entails, by incorporating innovative technologies. In order to strengthen the Murcian Health Service's capacity to efficiently and qualitatively meet the present and future needs of the public, we seek to develop innovative solutions through the incorporation of cutting-edge technologies.
- Other successful experiences have been [CHERRIES](#) or the current [HealthChain](#).
- [Hercules](#) (Semantics of University Research Data) offers a global vision of the research data of the Spanish University System, with to **improve management, analysis and possible synergies between universities** and the general public. Its objective was to create a Research Management System based on semantic open data that offers a global vision of the research data of the Spanish University System, in order to improve management, analysis and possible synergies between universities and the general public.

On the defence sector different initiatives are in place of the [Cartagena Navy](#) through the [Quartermaster's Office](#) in the [Spanish Public Sector Procurement Platform](#). In the Platform, we can check both the [Tender](#) and [Minor Contracts](#) published by the Cartagena Navy and their timeliness and frequency, which shows great activity. During 2024, we can find up to 3 tenders exceeding one million euros in value, concerning the maintenance of

the ships, their engines, and the installation of photovoltaic panels to ensure the transition towards greater energy efficiency.

Besides these sectors, we can find the previously mentioned initiatives such as:

- [inDemand RCT](#). Following up on inDemand model entails the performance of a Random Control Trial (RCT) to check the efficacy of an innovation support model for SMEs (inDemand model, innovation driven by demand). The technological challenges identified by large/tractor companies are from economic sectors included in the S3 of the Murcia region. This call consists of some 14 technological challenges related to business innovation, digitalisation, and response to Covid19 identified by large/tractor companies located in the Murcia region, sector agnostic.
- [HOOP](#). It supports 8 European cities and regions in the development of large-scale urban circular bioeconomy initiatives that will focus on the manufacture of bio-based products from urban biowaste and wastewater.
- [Fundación Isaac Peral Open Innovation](#). Since 2018, every year large participating tractor companies define technological challenges and publish them. Entrepreneurs select those challenges in which they are interested and propose innovative solutions. Then, the tractor companies reward the winners for providing innovative solutions about their needs.
- [INCOOVA from CROEM](#). Since 2017, it provides yearly challenges from regional companies enabling entrepreneurs to create companies around specific and needed business models. INCOOVA offers mentoring to these entrepreneurs to be successful within their business models in order to be sustainable companies.

In the framework of the Smart Specialisation Strategy ([RIS4 Region of Murcia](#)) and led by INFO Murcia, the [Caetra Programme](#) aims to promote R&D, innovation, technology entrepreneurship and International Cooperation and Technology Transfer in dual-use technologies for Defense, as well as in Security and Post-disaster rebuilding, benefiting from EU ERDF and ESF co-funding.

Summary of key points (SWOT analysis).

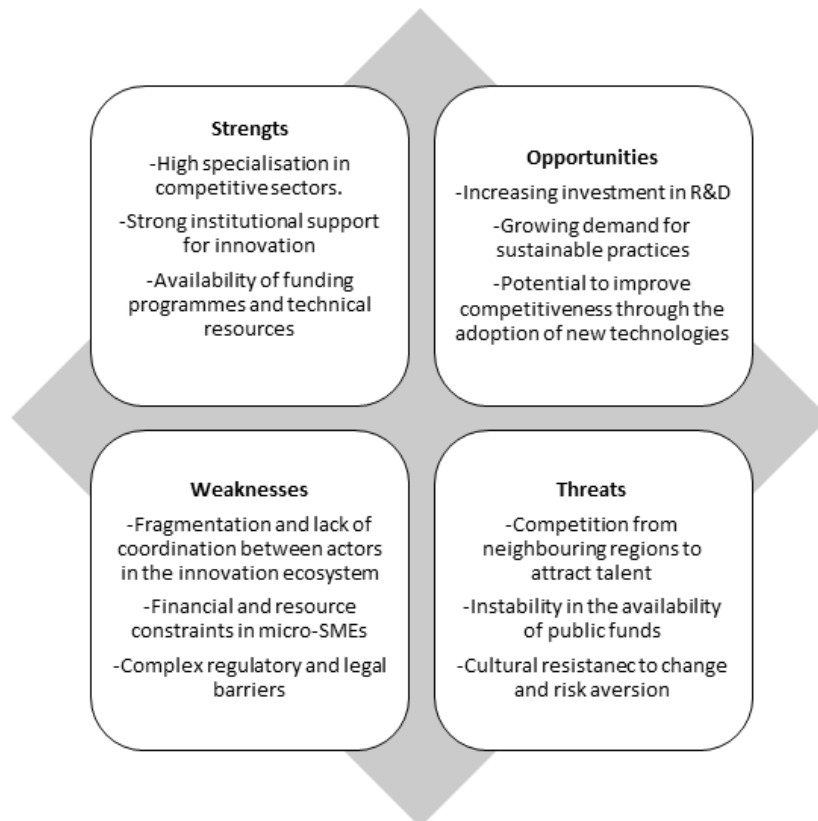


Figure 11: SWOT Analysis from the Region of Murcia

Guidelines for Action Plan

The results emerging from the interaction with the stakeholders and innovation players clearly reflect the current level of knowledge and practice of InnPr in the habitual procurement activity from those public and private bodies in the Murcia region. Those findings lead to the identification of the following priority areas to overcome the challenges and take advantage of the opportunities identified.

Region of Murcia has also identified the key sectorial areas fully aligned with RIS3 priorities:

- **Health:** InnPr is seen as an opportunity to drive innovation in the health sector, improving the quality and efficiency of health services.
- **Defense:** In the field of defence, InnPr can contribute to the development of advanced technologies and innovative solutions for security.
- **Education:** InnPr in education seeks to promote teaching and learning methods that are more effective and adapted to current needs.
- **Environment:** InnPr is used to promote projects that contribute to environmental sustainability and the efficient use of resources.
- **Industry:** In the industrial sector, InnPr can accelerate the adoption of emerging technologies and foster competitiveness.



Figure 12: Action Plan areas in Region of Murcia

1.- INTRARREGIONAL OPEN INNOVATION

- **Strengthen coordination and collaboration among innovation ecosystem actors.** This can be achieved through the creation of platforms and networks that facilitate information exchange and cooperation. There is a need to develop stronger links for the effective the collaboration and interrelation among University-Company-Technology Research Centre.
- The **creation of a Science, Technology and Innovation Advisory Council** could be decisive. This would help to involve universities, research centres and other relevant entities, working in a coordinated and unified manner.

2. CAPACITY BUILDING

There is an urgent need for training in InnPr, beyond the different TRLs. Some activities to overcome the actual need for training schemes (format, chronogram, lecturers) will be put in place for managers and technical staff of procurement and innovation public service, plus raising awareness actions for politicians. INFO will scale up its influence and collaboration with the ministry, Murcia region or Murcia Training School, to expand the scope and effectiveness of InnPr training.



- **Direct training** with different training programs according to the distinct roles within the organization:
 - For Directors and Deputy Directors General: training actions designed for strategic decision makers and InnPr project managers.
 - For Operational Personnel and Legal, Recruitment and Innovation Departments: Practical training on PIC processes and applicable legislation.
- **Levels of Depth:** Offer levels of training that vary in depth, from a basic course on the opportunities offered by legislation to a more advanced level that addresses best solutions and practices.
- **Professional Trainers and Successful Practices:** Include training professionals with experience in InnPr and share successful identified practices, such as the techniques of the UMU, the Valencia course, or the proposals of Javier Vázquez Matilla by the UPCT.
- An **‘Starter Kit’** to prepare small tenders with market consultation will be prepared, including good and bad practices, as well as concrete experiences that can be extrapolated and shared to improve the implementation of the InnPr, including leveraging ERDF funds to this purpose. This is a way to get inspiration from other neighbouring region which have already adopted more developed patterns aimed to enable InnPr through further cooperation between public bodies, solver SMEs and intermediate service providers.
- Among others, it will be addresses the **identification of Needs**, crucial to recognize the specific training needs on Public Procurement of Innovation (PIP), beyond the various Levels of Technological Maturity (TRLs).

Also, INFO and regional government have met on July 9th and agreed upon on the urgent need for raising awareness in InnPr, and the following actions were proposed.

- Preparation of an **InnPr Guide** (as other regional governments in Spain have)
- Approach to the national department in charge of business innovation CDTI, more precisely [CDTI InnPr Unit](#) as a **tool from the national government aimed to promote innovation from the public sector** through the acquisition of innovative solutions and solutions in the process of development. CDTI is managing in the form of selection, preparation, and implementation of InnPr projects plus mapping of demand driven announcements. INFO and CDTI had a first working meeting on July 10th, 2024.

3. COCREATION INSTRUMENTS

Definition of flexible **demand driven instruments** than should consider the below points.

Phase of the process	Considerations
Challenge definition	<ul style="list-style-type: none"> ▪ Encourage the generation of ideas for possible InnPr files that can be implemented effectively and sustainably. ▪ Some Challengers propose generic challenges, for not giving tips to their competitors. Instruments should allow narrowing the initially proposed ones to make them more aligned to their concrete needs during the co-creation.
Market consultation	<ul style="list-style-type: none"> ▪ The period to identify needs, interact with the market and propose challenges should be long enough so the challengers can do it properly. Therefore, the call for challengers should be open with ample time to do so. ▪ The participation of experts or intermediate organizations to help in several stages of the process. In particular the Open Market Consultation (to understand the maturity/TRL of the market), the Challenge definition (to fit the time and scope) and the Co-creation (including adoption-gearred actions).
Cocreation process	<ul style="list-style-type: none"> ▪ Challengers need to understand the difference between ‘sub-contractor’ and ‘co-creation partner’ to have a win-win collaboration. ▪ End users should be actively involved in the co-creation process. ▪ Co-creation should be guided by a Co-creation plan with milestones, KPIs, meeting calendar, etc. to avoid delays. Especially if the collaboration period is tight. ▪ Challengers should be able to receive support/coaching from externals (e.g. Technological centres, clusters, consultants).

Adoption	<ul style="list-style-type: none"> Adoption is key. If there is no adoption, it generates frustration. To improve the uptake of pilots, it is necessary to ensure technical, economic, and regulatory feasibility. From the Challengers' side, having budgetary reserves for innovation shows a commitment to society. Innovation procurement goes beyond Public Procurement rules. InnPr modalities enabled by the Public Procurement regulation do not currently enable adoption of innovation.
Legal aspects	<ul style="list-style-type: none"> Expectations regarding Intellectual Property and Exploitation should be early addressed.
Funding	<ul style="list-style-type: none"> Highlight successful experiences using own resources, emphasizing self-sufficiency and efficient budget management. Address the complexity that Next Generation funds have introduced into procurement, and how these challenges are being overcome to optimise the use of Next Generation funds. Highlight the reinforcement in the interest of the InnPr with the help of the ERDF funds, presenting the advantages of the instrument for projects of manageable scale that do not exceed capacities.

4. POLICY MEASURES

To overcome the challenges and take advantage of the opportunities identified, it is essential to initiate some actions at a policy level.

- Highlight the **dichotomy** between the concepts of **InnPr and Demand-Driven Innovation**. Especially in the region of Murcia where there are already experiences such as [inDemand \(RCT\)](#) for innovation from the demand side; and on the other hand the contracting services know the terminology and concept of InnPr. It is important not to create confusion and sometimes it is not so easy when there is not too much knowledge. **INFO's commitment** to Demand-Driven Innovation and InnPr. INFO is considering developing a Funding Instrument in 2025. Furthermore, INFO is promoting a Working Group within the ADR Forum (Net of Regional Development Agencies in Spain). Indeed, INFO has recently created the new InnPr Unit at INFO Murcia, as described before.
- Region of Murcia Procurement Plan**. The Region of Murcia government is currently preparing a regional plan where innovation plus green plus social procurement will be included over the next 3 years. Its focus is considering public procurement is an instrument/vehicle for the implementation of public policies. More precisely related to InnPr, the regional government considers essential to have the collaboration of INFO, to facilitate the access of SMEs to public procurement and promote innovative public procurement. The main focus now is the implementation of the regional public procurement platform. Likewise, they plan to complete the "diagnosis of the situation of regional procurers" by September 2024. Willing to create a work group structure, the first working group would be the innovative public procurement group and INFO will be part of such an exercise.

Other concrete actions include:

- Simplifying and clarifying regulations and legal frameworks**. This will help companies, especially micro-SMEs, to navigate and comply with the legal requirements needed to implement innovation projects.
- Increasing the availability of funding and resources for innovation**. This includes not only increasing the public funds available, but also encouraging private investment in innovation projects.
- Promoting a culture of innovation and risk reduction**. Through training and awareness programmes, a more positive attitude towards the adoption of new technologies and processes can be encouraged.
- Propose the **adaptation of existing regulations** to make them more favourable to the InnPr, removing barriers and promoting innovation.
- Develop a **holistic approach** to sustainability. Integrate sustainable practices into all aspects of innovation to ensure that projects are not only economically viable, but also beneficial to society and the environment.



3.2.3 Oulu

Regional framework for public procurement

City of Oulu is a public authority, which obeys all the legislations, and there are only legally described procedures, how to make incentives and statements to the issues, which the city is responsible for and concern the city. Also, recommendations belong to that basket. We do not give any recommendations within the projects to the EU or even in national level (except if we have invited officially to do that). The statement and recommendation of the city of Oulu is always formulated and accepted by our legal leaders (City Council), and not by single worker. This has been ordered by The Municipality Law and the regulations of the City of Oulu. E.g. City of Oulu participates in the national working group, which has been nominated by the Finnish Government and whose task is to renew some points of The Procurement Law (e.g. position of municipally owned establishments and companies in their role and responsibilities as procurement units).

Legislation

Procurement is based on EU and Finnish legislation. EU legislation has been notified and coordinated in the introduction and argumentations of the Finnish Procurement Law. The Procurement Law is generally acknowledged and identified as permissive framework for innovative procurement.

Oulu City Strategy and Procurement Program obey:

- [The Municipality Law](#),
- [The Procurement Law \(=Public Procurement Act and Public Procurement Act for Special Fields\)](#) and
- [The Administration Law](#).

Key policy programmes

Key Policy Programmes in Oulu Region are Regional Development Plan and Smart Specialisation Strategy which are interconnected to each other. Both documents include main processes and objectives for next for year in regional development. ERDF and ESF are tools to fund the processes and objectives usually in projects.

The top factor, which guides and defines the development of the city of Oulu, is [the Oulu City Strategy 2030](#). It has been politically accepted by City Council and it is checked regularly. City Strategy 2030 lists as main objective: Oulu is economically, socially, and environmentally sustainable, vivid, and growing, educated and culturally rich city with wellbeing citizens and growing business, trade, and industries. For the implementation of the City Strategy there are several programs – one of them is procurement program.

[The Procurement Program \(Oulun kaupungin hankintaohjelma 2024–2028\)](#) is new: accepted in February 2024 by City Government. The Procurement Program defines, and guides focus, objectives and activities for producing the public services, buying goods, doing construction and investments. The main principle in procurement is to buy the best efficient services and solutions (best quality for the money) by transparent and equal methods and sustainable ways and keep taxpayers' money in safe.

Each sector of the city of Oulu makes its own procurement plan, which is a part of the yearly procurement planning clock and counted within the whole economy and budget of the city. All the parts are in line: City Strategy → Procurement Program → sectoral procurement plans.

Oulu Region has relatively advanced Innovation System. [Oulu Innovation Alliance](#) is foundation for innovation in which major public research organisations and educational institutions are involved by partnership agreement. Oulu Innovation Alliance is hosted by Business Oulu, an establishment owned by the City of Oulu. Each of individual organisation has own strategy but they aligned with OIA strategy. Until this year procurement has not been prioritized in OIA processes. Especially with city of Oulu's forerunner work in procurement these has been

rising strongly in regional InnPr. Also, awareness which PREPARE-project has brought to the regional work, procurement has gained more attention.

Key stakeholders

Key stakeholders were identified from relatively large group of experts. Main criterion in identification was person's capability to steer regional development in innovation. In practice this means that interviewed stakeholders were responsible of compositing the regional development plan and its top projects. All the stakeholders have experience in adaption of innovation and procurement, some even innovative procurement and have been involved in all parts of innovation chain.

From the organisational point of view most important organisations were identified in procurement and demand-driven innovation:

- [VTT](#) A national RDI-organisation which has strong international co-operation. Oulu has second biggest side in Finland.
- [Council of Oulu Region](#) is regional development organisation. Council composes all major regional development documents including regional development plan, regional land use plan and Smart Specialisation Strategy. Council is also main ERDF-funder in the region and other funders follow the guidelines made by the Council.
- [POHDE, North Ostrobothnia Welbeing Services County](#) is regional health service provider which has strong experience in procurement and demand-driven innovation.
- [BusinessOulu, an establishment of the City of Oulu.](#) is regional business developer and project implementor. BO also manages regional business environment with strong technological and industrial foresight.

Main tools of gathering knowledge were interviews, workshops and focus group meetings. Focus group will gather constantly during the rest of the PREPARE-project. Idea is to support and foster the project and also give framework for future collaboration between key stakeholders and also bring new organisations involved to the process.

Drivers and Motivations

Answers diverged widely in this question. Funders prioritized economic growth, enhancing competitiveness, and promoting sustainability. Policy makers and persons who are closer of the end of the innovation chain prioritized improving public services. Also stimulating innovation had some notices. But main driving factor seems to be the need to renew public service production, save the costs, put more effectiveness to the services taking account the digital transition and sustainable development.

Main motivation for InnPr is more effective and faster adaption of innovation production. Regional high RDI-investment does not produce enough solutions, products, and especially not enough new SMEs. Innovation system at the moment is mainly founded by large and middle size companies. Regional long-lasting objective has been promoting SME establishment which also helps creating new jobs. Innovative procurement also gives new deals for SMEs.

After covid-19 regional employment was in good stage, but last two years employment has not development as wanted. Economic and social environments have changed so drastically so new measures are needed. Innovative procurement can new regional employment organisation is starting which also needs new tools for supporting employment.

The policy objectives and government initiatives are mentioned in the City Strategy: *Oulu is a pro-active, leading, open-minded platform for new solutions, innovative pilots and supporting and inspiring business, trade, and industry sectors to invest with and in Oulu.* Especially the possibilities of small and medium sized enterprises are included in activities and open calls. Most of the brand-new innovations usually are born in SMEs and/or startups. The access to markets is rocky and Oulu can offer a relevant reference to new business operators e.g. via public

procurements. This is the ideal situation and goal. These same politics are underlined in the Finnish Governmental program and municipal strategies, which are always in line.

City of Oulu is ready starting professional, systematic innovative procurement and actively searching for the solutions for its challenges from the markets. Procurement process is defined, digitally operated and led by knowledge.

In right place and time there is *a challenge and need to renew the employment services*, because of the big national reform of the service production and management: transferring employment services from state to municipalities on the 1st of January 2025. The budget system will change, too.

Municipalities are obliged to pay for the employment costs and for the client's service costs at the same time. In the old system service costs were paid by the state. New budget system causes a challenge and need to focus to the effectiveness of the services (people go to work) instead of previous performance and task. This means that the services production, which need to buy from the market by open procurement, must start focusing to the effectiveness and new solutions instead of "doing like have always done." Innovative procurement, with tools for evaluation of effectiveness, should be the new normality in the service production of the employment services. This change means the coming change in the working culture, as well, and the change in the client guidance. It means the change in the leadership toward the leadership by knowledge.

Nowadays there are several digital client management systems in use in the employment services depending on the client group: for the unemployed private persons, who have a personal right to the services, and for the enterprises, which have need to recruit or develop expertise or have other growing needs. Then there are different digital platforms for officials, who operate with the clients. These different digital systems are nowadays connectable by solutions of Artificial Intelligence (AI). There have been done some test projects in Finland. Innovative procurement with innovation adoption could be a key to the new connecting digital platform, which could help matching challenge of the unemployed people and enterprises, which search for new expertise.

At national level there is a huge chasm between jobless people and recruiting enterprises. A "Big Bang" in the employment services offers a bright possibility to search for new solutions. New experiences and pilots are needed in the base service production in the employment services to get references from effectiveness-based services. Best results from the innovative effectiveness-based procurements can be adopted to the new service menu, to daily work and to new working culture.

A big opportunity is Oulu **Experience Arena**. The city of Oulu is planning a new indoor arena (10 000 capacity) in Oulu Central Station Area. The arena will be the main investment, along with hotels, offices, and commercial services, in a unique greenfield urban development area in the heart of the city. Oulu views the arena project as a hybrid between innovative public procurement and private sector initiative. The city is looking for investors in the arena building through procurement but leaves room for the investors' own initiatives and ideas when it comes to the surrounding areas. The process is true co-creation with both structure and creativity.

As a city known for its technology, Oulu will emphasize the role of digitalization in the arena process. The university of Oulu is a world-leader in 6G technology, and the future arena of Oulu will feature technologies and innovations that reflect the forerunner status of the city and the university in digital innovation.

Another challenge belongs to the health sector. Wellbeing Services County (Pohde). Pohde is responsible for organizing public health care, social welfare, and rescue services in North Ostrobothnia. These services are facing major challenges with aging population and, at the same time, scarce labour force. Hence there is urgent need for new intelligent solutions for Pohde. New technologies, like Artificial Intelligence, Robotic process automation (RPA) is bringing extensive possibilities for public Social and Health sector. In order to succeed in deploying new technologies new innovative procurement methods must be developed.

Challenges and barriers

Common challenges faced in regional InnPr.

Regional innovation system has been successful and acknowledged also in the national level. This kind of positive background does not encourage a new framework for promoting innovation. There is not regional consensus on prioritising innovative procurement or demand-driven innovation in funding. This does not mean that funders are against innovative procurement, but it is not a mainstream idea. They see that things have improved quite a bit during last five years. From their point of view science-based innovations have not developed as anticipated. Many times, fostering of innovation is seen as business as usual and therefore new methods have not seen necessary. Most of the interviewees noted that end user's and customer's needs should be better prioritized.

Regarding the procurement process, InnPr should begin well before formal decision. Buyer should be aware of market situation and supply to make tender which includes innovative elements. Many of interviewees mentioned that innovative procurement as concept can be bit discouraging. Innovative procurement should be explained as normal procurement with innovative elements. Often innovations are seen as technical gadget or application. Social innovations can make more development than procurement of equipment.

Regulatory barriers and legal constraints.

City of Oulu is using mainly taxation in service production and procurements. Responsibilities come mainly from the Municipality Law, The Administration Law, and The Procurement Law. Council of Oulu Region operates with the ERDF and the ESF funding, which have their own specific regulations. Centre for Economic Development, Transport and Environment operates with the ERDF and the ESF funding with the special funding for the growth of the enterprises and startups.

Different funding sources have relatively strict rules. Most of the stakeholders and innovators are coping with regulations even though they change when funding period changes. Interviewed stakeholders does not see funding regulations as major problem. The bigger challenge is that funding does not cover the whole innovation chain. Mostly mentioned are gaps in startup funding and at the end of the chain e.g. before adaptation.

Overall possible little of a surprise was that national and EU procurement law was seen quite permissible. The problem is that tenders and procurement are done by very traditional manner. Reason is that organizations are afraid of mistakes and punishments of domestic management and external authorities. Innovative procurement also needs more effort than procurement done before. This is the reason why innovative procurement is many times neglected.

Cultural and organizational challenges.

When studying the situation there is a long heavy list of barriers, mainly especially those which break the daily working/business in administration and make a threat. There are recognized barriers are:

On the administration/buyers' side:

- Doing things like always has been done, killing the enthusiasm of new-comers who might have fresh ideas and/or experiences to change the old routine and find new ways to do daily working, change resistance and braking attitudes ("yes, but...", "yes, after..."), including micromanagement and sometimes unsure knowledge of decision-making chain in management hierarchy.
- Safety and security or ICT issues as excuses not to change anything, fear of double working drain at the same time (daily work is fully occupied by the old routines). Leadership by old – easiest? – ways.

Bureaucracy – attitudes, knowledge, leadership, micromanagement, slowness.

- Old habits feel safe on the step of new procurement, fear of complaints and mistakes, quality criteria with proper descriptions causes sweating (it is easy just to put the cheapest price as the only criteria). But it is known that the cheapest price is very big risk (depending on the target of the procurement): piece works are getting over the deadlines, extra works are “normal,” contract monitoring causes a lot of manual work.

Contract policy and management are a huge risk when doing like before. Conditions and legislations change fast (just to mention restrictions done by European Commission, or inflation). Every contract starting from planning the content, reclamation system, sanctions, and monitoring need legal expertise with the freshest knowledge.

- Public money is lazy money, taxpayers’ money, our money, your money, nobody’s money. There are a huge number of attitudes from the other ideological edge to another edge, how this should be managed. Civil servants are not free from that.

On the enterprises side, when they are service producers:

- Lack of understanding the public sector as buyers, and a lot of bureaucracy when doing the tenders for open public calls. Especially SMEs feel the process too heavy. SMEs criticize public sector, too, that open calls are sometimes too large and above the capability of SMEs, and that the used criteria (with expensive certificates) are not in the hands of SMEs.
- Enterprises are worried about the chain from demo/test to production, especially when the procurements are separately. Sometimes it is easier for enterprise to develop only the demo/test without worries about markets. But is this wise policy for public buyer and use of public money? There is always a risk, that demo/test could dry in the hands.
- IPR are essential from the start and during the development and implementation.
- Challenges to move innovative development from demo/pilot to adoption and scalable business (experiences in health sector). Even the time gap can cause a risk for start-ups or SME, and in the worst case the innovation developer can be in the bankruptcy before production has ever started.

Training and Assistance Needs.

- There is a need for many kinds of training and clarification of innovative procurement. The challenge is that it is not easy to find competent trainers and coaches for more advanced procurer. This group of buyers would benefit more from exchange of best practices. For less experienced buyers all kinds of training and assistance can produce added value.

Best practices identification

The goal in the Oulu Innovation Alliance process is to get innovations started and finally adapted. Innovative procurement is in the toolbox, still it could be used more often. Social innovation which has been implemented in cross-sectoral co-operation and those which cross professional borders for example in employment issues. Also, many kinds of environmental and climate challenges were resolved in co-creation gatherings where propositions were awarded.

Good example is also MEDICUBE-process where person gets his/her’s own health data in on session. MEDICUBE combines many technical features in one physical device. Useful implementation needs a whole process of different kind of support actions and training for users and specially health care personnel.

Summary of key points (SWOT analysis).

Because of the role of the public authority whose tasks are lined in the Municipality Law, city of Oulu has defined its service production in the City Strategy. Most of the tasks are legally ordered. City Strategy covers also lines for the support and boost the regional business trade and industries. Public procurements in service production are done when it’s need and right time. Big innovations are usually rare, but it is objective to use innovative elements

(incl. incentives, sanction&bonus, sustainable development) in every possible suitable procurement in order to get reform and better services.

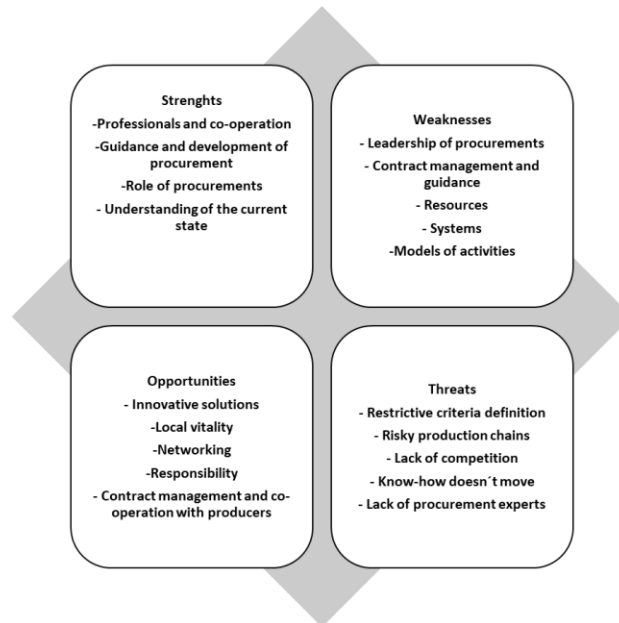


Figure 13: SWOT analysis from City of Oulu

Guidelines for Action Plan

The results emerging from the interaction with the stakeholders and innovation players clearly reflect the current level of knowledge and practice of InnPr in the habitual procurement activity from those public and private bodies in Oulu city. Those findings lead to the identification of the following priority areas to overcome the challenges and take advantage of the opportunities identified.



Figure 14: Action Plan areas in City of Oulu

1. CONNECTION BETWEEN INNOVATION PLAYERS

Close co-working with sector experts and procurement specialists is needed. All, who work with the innovative procurements, know very well the processes and meanings of the different parts of the innovative procurements. They know the existed legislation, digital service and call systems, strategies, and programs very well. All the potential methods are used actively depending on the case. Specialists know the development needs in the procurement process, as well. Sectoral experts know the sectoral needs and the markets.



2. CAPACITY BUILDING

Education needs have been recognized and implementation is a part of the planning and management.

3. NEW PROCUREMENT INSTRUMENTS

Innovative and effectiveness-orientated procurement is as a possibly to renew the way of providing better public services. It is needed to provide tools and effective methods, for identifying the potential innovative solutions in procurements, for measuring, monitoring, and reporting the effectiveness of innovative procurements, in progress.

Phase of the process	Considerations
MARKET DIALOGUE	<ul style="list-style-type: none"> Call for information and market dialogue are key elements for dialogue between players in the planning phase of innovative procurement chain. This phase needs almost the longest time in the procurement process. Key example of the best practices is OuluBOT, which was a real live success by procurement process and by results.
COCREATION	<ul style="list-style-type: none"> Successful solutions, when using customer participation methods in quality criteria in procurement processes to get better knowledge of customer behaviour and feedback, are preferred in continuous service production.

The Procurement Program (2024) of the city of Oulu defines both the leading, management, expertise and professionalism concerning procurement procedure, planning, legality, and contract policy, and developing the expertise. It defines main activities and criteria, measures, and monitoring, which shall be used reasonable in every procurement. One criterion is to create and use innovative elements in the procurement procedures in order to get better and new services, products, and solutions. New solutions from the market are welcome, and we should formulate the open call with criteria suitable for new development. One step is that how to recognize the conditions and situations, where could be the right place and time for new solutions. **Evaluation criteria for recognition the innovative possibility has now been done by PREPARE-project and it should be defined to the normal module for every procurement planning.**

Next step is to create **implementation road map of the Procurement Program** including the path for innovative solutions. Then we can start leading the processes and finally effect to the old attitudes, which are the core reason to brake development.

In the implementation road map of the Procurement Program there will be own path for innovative procurements. It consists of process modelling of best practices, recognition of the potential innovative approach or solution, active innovative procedure (according to the Procurement Law) with quality criteria, contract management, impact and effectiveness measures and monitoring, leadership, and report system. The road map will co-operate with our digital procurement system (planning, open calls and tenders, service provider management system, knowledge, and analytics). New step is also digital risk management module, which does not concern only procurement. Time schedule is the year 2024.

Some other opportunities, as mentioned above are:

- Oulu Experience Arena.
- Wellbeing Services County (Pohde).

4. STRATEGY ALIGNMENT

It is essential, that leadership and management is connected to the City Strategy and is involved with economic management. Efficient leading of the procurement management means management of the taxpayers' money, production of services in time and controlling of the quality of the service production from the market.

Understanding the big picture and procurement procedures is needed. Knowledge should be gathered to one digitally operated platform and system. Then it is possible to use for leadership as well.

The efficient leadership of management is connected to long-line planning, co-operation in innovation ecosystem and understanding the meaning of right time and place. Innovative procurement processes are long in time (planning can start even a year before the open call for tenders) and co-operation between procurement specialists and sectoral experts with client knowledge is essential. It is also remarkable, that ownerships of the procurement process and sector services are finally in the same hands. Procurement support and guidance from the head administration of the city targets to optimum procurement process and safe contract period.

3.2.4 Skåne

Regional framework for public procurement

Regional InnPr in Region Skåne is a strategic approach to acquiring innovative solutions that meet the region's specific needs while fostering regional development and enhancing public services. This process involves several key components (see section 1.2)

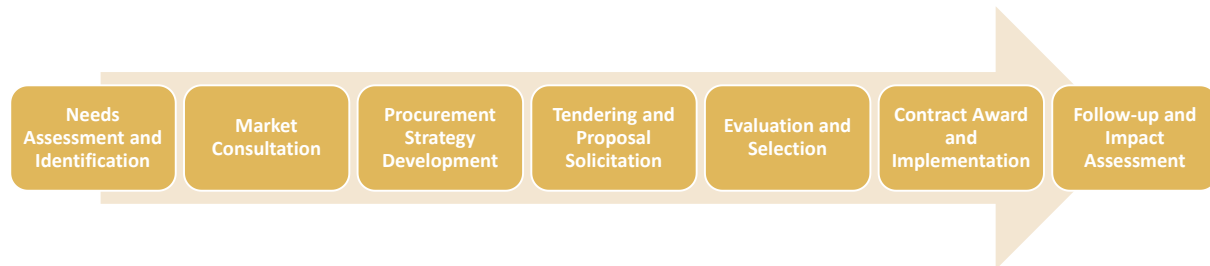


Figure 15: Practical implementation of InnPr process in Region Skåne

Public procurement in Region Skåne operates under a structured framework designed to ensure transparency, competitiveness, and optimal value for public funds. The procurement process encompasses several critical stages, each contributing to the overall efficacy and integrity of public purchasing.

- The initial phase involves the identification of needs, where Region Skåne determines the specific requirements for goods and services. This stage is pivotal as it entails a comprehensive understanding of both immediate and long-term maintenance and service needs. Suppliers must demonstrate their capacity to meet these requirements effectively.
- Following the identification of needs, the planning and preparation phase commences. During this stage, potential suppliers are expected to engage in meticulous planning to fully grasp the customer's needs and ensure compliance with relevant regulations. This phase also includes evaluating the necessity of forming partnerships or consortia to meet the contractual obligations effectively.
- The tendering process constitutes the third phase, wherein Region Skåne issues a call for tenders, inviting suppliers to submit their proposals. This phase is characterized by the submission of detailed proposals, including proof of concept strategies that illustrate the feasibility and capability of the suppliers to deliver the required services or products.
- Subsequently, the evaluation and selection phase involve a rigorous assessment of the submitted proposals based on predefined criteria. The evaluation focuses on the suppliers' ability to adhere to the set timelines and fulfil the contractual obligations without incurring penalties. This phase ensures that the most suitable and competent supplier is selected.
- Upon selection, the contracting and implementation phase begins. This phase involves formalizing the agreement through contract signing and initiating the implementation process. Detailed planning during this stage is crucial to ensure that the project adheres to all specified requirements and deadlines, thus guaranteeing a smooth execution.
- The final phase, delivery, and maintenance, requires suppliers to deliver the service or product in accordance with the contractual terms. Continuous maintenance and service provision are imperative to meet Region Skåne's long-term needs, ensuring the sustained success and functionality of the procured goods or services.

Legislation

Public procurement in Sweden involves a process where public authorities and entities purchase goods and services. This process is governed by several laws and regulations, primarily the **Swedish Public Procurement Act (LOU)**. The LOU aims to ensure that public funds are used efficiently, and that market competition is promoted.

The Swedish Public Procurement Agency and the Swedish Competition Authority are two central agencies responsible for overseeing and supporting public procurement in Sweden. The Public Procurement Agency provides guidance and support to procurers, while the Competition Authority ensures that procurements comply with the laws.

The public procurement process includes several steps, such as needs analysis, procurement announcement, bid evaluation, and contract award. The fundamental principles of public procurement are non-discrimination, equal treatment, proportionality, transparency, and mutual recognition. These principles ensure that all suppliers are treated fairly and that procurements are conducted transparently and objectively.

In PREPARE, Region Skåne has focused on public procurement within healthcare. The most common types of procurement in healthcare include service procurements, goods procurements, and construction contracts. Service procurements are the most common type and include, for example, healthcare services, consulting services, and technical services. Goods procurements can include medical equipment, pharmaceuticals, and consumables. Construction contracts often involve the construction and renovation of healthcare facilities. Public procurement in this sector is an important process that ensures high-quality care and efficient use of public funds.

In addition to the Swedish Public Procurement Act (LOU), procurements in the healthcare sector are also governed by the Act on System of Choice in the Public Sector (LOV). The Act on System of Choice in the Public Sector (LOV) is a Swedish law that regulates how municipalities and regions can expose certain services within healthcare and social services to competition. Through LOV, users and patients have the opportunity to choose which provider will perform the service, among those approved by the contracting authority. This system aims to increase choice and improve the quality of services through competition.

By working strategically with procurement, municipalities and regions can demand socially sustainable services and use the suppliers' capacity for innovation to find new solutions. It is also important to set well-thought-out quality requirements and plan for the follow-up of the agreements.

In public procurement, several different procurement procedures can be used depending on the value and type of procurement. Here are some of the most common ones:

- Open procedure: All interested suppliers can submit tenders. This is the most common procedure.
- Selective procedure: Only suppliers who meet certain criteria and have been invited can submit tenders.
- Negotiated procedure: The contracting authority negotiates with one or more suppliers after receiving tenders.
- Competitive dialogue: Used when the procurement is complex, and the contracting authority needs to discuss different solutions with suppliers before tenders are submitted.
- Innovation partnership: Used when the development of innovative products, services, or construction works that do not already exist on the market is needed.

These procedures help public organizations promote innovation and find the best solutions for their needs.

Key policy programmes

In Sweden, InnPr plays an important role in promoting innovation and development within the public sector. By collaborating with companies, public organizations can create and implement new solutions that better meet societal needs.

Swedish policy supports InnPr through various initiatives and strategies. The government has tasked several agencies with promoting innovations through public procurement. By encouraging cooperation between public actors and companies, Swedish policy helps to strengthen innovation capacity and improve public services.

The **National Agency for Public Procurement** plays a central role by offering support and guidance to promote innovations in public procurement. Vinnova, Sweden's innovation agency, finances and supports innovation projects, including InnPr. Other important agencies include the Swedish Energy Agency, Formas, and the Swedish

Environmental Protection Agency, which also offer funding and support for innovation projects. These agencies work together to promote innovation and sustainable development in Sweden.

The National Agency for Public Procurement supports and guides public organizations in their procurement processes. The agency develops and disseminates knowledge, tools, and methods to ensure that public procurements are sustainable, innovative, and efficient. They also work to promote healthy competition and the effective use of tax funds by ensuring that procurements are conducted in a transparent and fair manner. Additionally, they contribute to using public procurement as a tool to drive sustainable societal development.

The mission of the Swedish Public Procurement Agency includes running **an InnPr arena called Afori** (www.afori.se), which aims to encourage public organizations to carry out more InnPrs. By offering support and guidance, they help public actors identify needs and develop new solutions that can lead to increased societal benefits and the growth of innovative companies.

Vinnova, Sweden's innovation agency, funds need-driven research and the development of effective innovation systems. It supports InnPr by offering financing and advice to public organizations. Vinnova has introduced special grants, such as "Innovation Procurement Vouchers," to help cover costs for external expertise and product verification. Vinnova also works on creating networks and platforms for knowledge exchange and experience sharing between authorities and public organizations. Through these efforts, Vinnova contributes to promoting innovation and improving the quality of Swedish welfare.

The Swedish Agency for Economic and Regional Growth supports InnPr by providing funding and resources for projects that promote innovation. They collaborate with other agencies like Vinnova to enable the financing of innovative solutions in various sectors, including sustainability and competitiveness. Additionally, they work on developing support structures where knowledge and innovations are exchanged between public actors, research centres, and companies. This helps optimize solutions in demonstration environments and promote user-driven innovation.

Policy objectives and government initiatives.

Government strategies

The Swedish government's strategy for digitalization and artificial intelligence (AI) involves a comprehensive plan to integrate digital technology and AI into various sectors of society and the economy. The key components of the strategy are:

- **Digital Infrastructure:** Building and maintaining a robust digital infrastructure that supports high-speed and reliable internet connectivity across the country, including rural areas.
- **Skills Development and Education:** Promoting digital skills and education at all levels of society, from primary school to adult education. This includes ensuring the workforce is prepared for changes that AI and automation may bring.
- **Innovation and Research:** Supporting research and development in digitalization and AI, including investments in research projects and support for startups and tech companies working on innovative solutions.
- **User-Friendly Public Services:** Digitalizing public services to make them more accessible, efficient, and user-friendly. This includes e-government, digital health services, and smart cities.
- **Regulation and Ethics:** Developing a regulatory framework that addresses ethical, legal, and security aspects of AI and digital technology. This includes protecting individual privacy and security, as well as promoting fairness and transparency in the use of AI.
- **Sustainability:** Using digital technology and AI to support sustainable development and environmental goals, such as reducing carbon emissions and optimizing resource use.
- **International Cooperation:** Participating in international collaborations and alliances to share knowledge, standards, and best practices in digitalization and AI.

- **Economic and Social Transformation:** Promoting economic growth and social inclusion through digitalization. This includes supporting businesses in their digital transformation and ensuring no group in society is left behind in the digital development.

In summary, the strategy aims to position Sweden as a leading nation in digitalization and AI, creating a competitive and innovative society that can harness the opportunities offered by digital technology while addressing the challenges that may arise.

National guidelines for innovation

The National Public Procurement Strategy in Sweden is an initiative aimed at enhancing the effectiveness, sustainability, and strategic importance of public procurement. The strategy focuses on leveraging procurement to foster innovation, support small and medium-sized enterprises (SMEs), and drive sustainable development in line with Sweden's national environmental quality and sustainable development goals.

The strategy is implemented by the National Agency for Public Procurement, which provides comprehensive support and guidance to municipalities and regions. This includes developing methods, tools, and expertise for effective procurement processes, promoting environmental and social considerations, and encouraging the use of electronic procurement systems.

One of the key objectives is to ensure that public procurement contributes to societal benefits and stimulates market innovation. This is achieved through stringent transparency requirements and promoting competitive, equitable conditions for suppliers. The agency also plays a crucial role in managing procurement-related statistics and maintaining a national database of procurement notices to facilitate market access for suppliers.

Additionally, the agency collaborates with various stakeholders, including government agencies, industry associations, and civil society, to address major societal challenges and drive positive developments in public procurement practices. This collaborative approach ensures that procurement not only meets legal and procedural standards but also aligns with broader policy goals such as sustainability and innovation.

For more details, you can visit the National Agency for Public Procurement's page on the national procurement strategy [here](#).

Regional strategies

Within Region Skåne there are several important strategies and ongoing initiatives related to levelling the innovation work. The following five were selected as the most significant strategies related to the project:

- The "**Future Healthcare System**" involves transforming healthcare to focus on patient-centred care, digitalization, preventive measures, integrated care, sustainability, and innovation. The goal is to create a healthcare system that is individualized, technologically advanced, preventive, coordinated, and sustainable.
- **Region Skåne's strategy for "Close Care"** aims to provide more accessible, patient-centred healthcare services close to where people live and work. This involves personalized, integrated, and preventive care, enhanced by digital tools and sustainable practices, to create a more responsive and efficient healthcare system. This shift will not only demand new innovative technologies and services but will also change the work process and the health care system at a deep level.
- **Region Skåne's strategy for "The future of university healthcare"** places significant emphasis on innovation. Innovation is considered crucial for developing new treatments, improving patient care, and advancing medical research. By fostering an environment conducive to innovation, the strategy aims to integrate cutting-edge technologies and methodologies into healthcare practices. This not only enhances the quality and efficiency of care but also ensures that the healthcare system can adapt to future challenges and demands. Collaboration with academia, industry, and other healthcare providers is key to driving innovation and maintaining a competitive edge in medical advancements.
- **Region Skåne's strategy for "Research and innovation in health care"** manages how Region Skåne will contribute to improved patient benefit. To succeed in this, the region needs to become a stronger collaboration and cooperation partner regionally, nationally, in the Öresund region and the rest of the EU, with the ability to stimulate and attract further collaboration with both academia and industry for better

health. The strategy includes a few focus areas, including creating organisational conditions for the mutual development of health and medical care, research, innovation, and business.

- **Region Skåne's "Procurement policy"** highlights that procurement is a strategically important issue for Region Skåne. Procurement must be based on the needs of welfare and citizens, and the goal is to create good business. Good business weighs together the business's need for quality and service as well as total cost with environmentally and socially sustainable development when the nature of the procurement justifies this. The region will be at the forefront of innovation-promoting procurement. This includes procurement that is conducted in such a way that it does not exclude new solutions, so-called innovation-friendly procurement, and procurement of innovation, i.e. procurement of the development of new solutions that are not yet on the market. As part of the development, the region strives to describe the desired function that is to be procured instead of formulating detailed requirements.

Key stakeholders

This study was focused on InnPr within health care in Region Skåne. Key stakeholders were identified in relation to the whole innovation chain in the regional innovation ecosystem involving representatives from the healthcare sector, academy, industry and NGO and end-user organization. The degree of experience of innovation adaption including InnPr varied in between the stakeholders - everything from no experience to decades of experience within the field, sometimes even in different roles and organisations.

The gathering of information regarding awareness, challengers and barriers associated with innovation adaption including InnPr was conducted by the following the activities (see 3.1) involving stakeholders from public regional health care, public funders, start-up accelerators, SMEs, and large companies within Medtech and Life, municipalities, universities, and national authorities:

Innovation Skåne operates in the borderland between the public and private sectors and thus has a large network involving contacts within both sectors, as well as extensive experience in leading collaborations between actors within the public sector, academia, and industry.

In Region Skåne, we gathered information about the current situation related to drivers, awareness, and experience, and identified barriers and opportunities about the implementation of innovation, including InnPr, through interviews and surveys with stakeholders and innovation players.

At our workshop, we invited representatives from all innovation actors (national and regional authorities, health care sector, public funders, policymakers, instrument managers, start-up accelerators, SMEs, and large companies within Medtech and Life, municipalities, universities, and end-user organization) in the regional innovation ecosystem. After presenting the results from the interviews and surveys, we focused on group discussions and dialogue between the different innovation actors, who all need to understand each other's respective roles and conditions to contribute to the work of developing the regional plan for the implementation of innovation, including InnPr.

A summary of the insights from the workshop has been shared with all participants. As a follow-up to the workshop, all participants have been invited to join a reference group for the ongoing work with the regional plan, and the interest in this is significant. Additionally, it should be noted that a representative from the Swedish Procurement Authority participated in the workshop and found the work with the regional plan interesting and will follow the development within the project.

Drivers and Motivations

Innovation procurement in Region Skåne is driven by policy objectives prioritizing innovative solutions for healthcare and public services. Collaborations with industry, academia, and research institutions foster new ideas. Market demand for efficient solutions, favourable regulations, adequate funding, and the goal of improving service quality and efficiency further support innovative procurement practices. These factors collectively support Region Skåne's commitment to leveraging innovation in procurement processes to enhance public service delivery.



Region Skåne has several drivers for working with sustainability and innovation, including:

- **Economic Growth:** Promoting economic development by supporting innovation and entrepreneurship, which can lead to new businesses, jobs, and economic opportunities.
- **Attractiveness:** Making Region Skåne more attractive for investments, talents, and tourists by being a leading region in sustainability and innovation.
- **Political and Strategic Prioritization:** Sustainability and innovation are often high priorities in regional strategies and policy documents, driving initiatives and investments in these areas.
- **Collaboration and Networks:** Participating in national and international collaborations and networks provides access to new ideas, technologies, and resources for sustainability and innovation.
- **Social Sustainability:** Improving the quality of life for residents through sustainable solutions in health, education, and social services.
- **Health and Well-being:** Developing innovative solutions in healthcare to enhance quality, efficiency, and patient satisfaction.
- **Regulations and Legislation:** National and international requirements and legislation on sustainability and innovation motivate the region to adopt and implement sustainable and innovative solutions.
- **Environment and Climate:** Reducing environmental impact and carbon footprint by implementing sustainable and eco-friendly solutions in various sectors such as transportation, energy, and construction.

By focusing on these drivers, Region Skåne can continue to develop as a leading region in sustainability and innovation, benefiting both residents and businesses.

Together with its suppliers, the region aims to take social responsibility. The region will use its purchasing volume to influence the production of goods and services in a sustainable direction. The region's environmental objectives, environmental programmes and climate impact must be considered in procurement. Environmental requirements aimed at reducing the burden on the environment must be set in all procurements of goods and services. Particularly driving environmental requirements must be set in procurements of goods and services that have a significant environmental impact and that involve large volumes.

The region will work to ensure that the goods and services purchased are produced under sustainable and responsible conditions. A Code of Conduct for Suppliers shall apply in all procurements of goods and services. Through the Code of Conduct, Region Skåne requires that goods and services delivered to Region Skåne must be produced under conditions that are compatible with:

- The UN Universal Declaration of Human Rights,
- the ILO's eight core conventions,
- the UN Convention on the Rights of the Child, Article 32,
- The occupational safety and health and safety legislation that applies in the country of manufacture,
- The labour law, including any legislation on minimum wages, and the social security cover that applies in the country of manufacture,
- The environmental protection legislation that applies in the country of manufacture, and
- The UN Declaration against Corruption.

Challenges and barriers

Common challenges faced in regional InnPr.

In summary, we can distil the problem areas raised to these, which are also recurrent in internal and external reports addressing issues related to innovation processes and procurement for public health care:

Lack of a general innovation management structure

There is a lack of applicable strategies and structures for implementing innovation and InnPr, as well as a clear division of responsibilities. There are several general strategies and structures on a high organizational level, but they fail to manage innovation management on a lower lever such as in hospitals and individual care units.

At the individual level, there is considerable knowledge and drive regarding innovation and InnPr, but the absence of a general innovation management structure leads to ambiguity between roles and responsibilities. This has led to that identified needs and innovative ideas has failed to reach implementation many times.

When healthcare's primary missions are care production, education, and research, a limbo is created between the desire to work exploratively and innovatively versus maintaining the everyday production. Without a clear and comprehensive mission for innovation management this seem hard to change within the organisation.

Problems to even get started in the innovation process – analysing needs.

There is an ambition and desire on all levels within the health care organization to work in a patient- and user-centred manner to spark innovation, but it is challenging to shift perspectives from today's inside-out. Needs analysis (user research) is highlighted by many as a crucial part of the innovation process, yet finding the right methods, skills, and resources for this in practise is difficult, due to lack of experience and prioritization of such work.

Another problem related to needs analysis is that managers and “need owners” experience that it is problematic to find ways to collaborate over organisational borders and that there are no common grounds to discuss problems, needs, ideas and solutions even though they know that other hospitals or care units face the exact same problems. It is hard to share knowledge and experiences which can lead to that knowledge is lost and or cost inefficiency when the same needs and problems are being addressed on several units at the same time.

Collaboration

There is a widespread reciprocal desire to collaborate and engage in early dialogue between public and private actors in Skåne today, but few know what opportunities that exist. Most of the stakeholders with experience in such collaboration believe it should be used more extensively but our study showed that less than half of the respondents know where to even begin. Only 6 out of 37 respondents on the survey feel that information about frameworks and meeting spaces available for industry and academia in Skåne is accessible.

The collaboration between the public and private sectors is crucial for addressing societal challenges, as it combines public resources and mandates with the private sector's innovation and efficiency. Public institutions often have access to extensive resources and a unique ability to influence through legislation and policy, while private companies can contribute specialized knowledge, technological innovations, and flexibility.

By working together, these two sectors can create more comprehensive and sustainable solutions to problems such as climate change, education, and public health. Partnerships can also stimulate economic growth by creating new markets and business opportunities that benefit society at large. Moreover, public-private partnerships (PPPs) can help reduce the risks and costs associated with individual projects by sharing responsibility and investment. These collaborations are particularly important in times of economic uncertainty or when public budgets are limited, as they can mobilize private capital for public purposes. Finally, PPPs can be a catalyst for innovation by combining different perspectives and expertise, leading to new solutions for old problems.

Regulatory barriers and legal constraints.

The experience in Region Skåne is that attitudes (towards), and usage of InnPr methodologies, and interpretation of its frameworks, is that these differ between international and national context, and its regional/local application. We find that barriers limiting usage of InnPr methodologies are rarely actual legal constraints but attitudes towards risk and perceptions of undefined procedures.

While guidelines and principles of InnPr procedures and legal validity are carefully laid out and presented at the European and national level these are rarely adopted in the regional/local context. Barriers can be further nuanced by considering instruments available inside and outside of the definition of public procurement law, respectively. Procedures and tools defined within LOU¹ (Swedish public procurement law) such as competitive

dialogue and functional requirements, are used semi-regularly in its regional/local context. It's inclusion in LOU itself are interpreted as a label of validity from procurement officers and strategy perspective. However, examples of adoption of public InnPr procedures are rarely found, although it is clear from both EC and national perspective² these instruments are fully valid and aligned with LOU.

Furthermore, another barrier for the adoption of public InnPr, innovation partnerships, and similar instruments is attitudes towards ownership of generated results. It is clear from guidelines and instructions published on the European level that as a principle such results are to be owned by the party that generates them, as in the case of an InnPr procedure this is often then supplier-side. Before launching an InnPr tender and contracting suppliers contract frameworks need to be carefully designed and defined considering the interest and rights of both parties. Definitions of ownership of potential results can in these cases often be a delicate matter as attitudes towards right to results might differ in opinion and will not always align with the principles of public InnPr procedures.

Considering desired side-effects of InnPr procedures (scalability of developed solutions, exploitation to third-party buyers and markets), including such uncertainties of ownership of results in contracting frameworks risk limiting such side-effects, and ultimately limit the sustainability of the procured R&D service (or solution) itself. If a supplier cannot fully exploit the results of the procedure the solution(s) will not be fully sustainable.

Financial and resource limitations.

Economic challenges associated with the implementation of innovation and InnPr are multifaceted. The main missions for the health care sector and care production, education, and research, not innovation. Therefore, it is hard to get innovation financially prioritized and in the healthcare sector, there is a lack of a clear commission and dedicated economic resources and skills supply to work in a structured and sustainable way with innovation.

Secondly, the current reimbursement system acts as a disincentive for innovation. The lack of rigorous follow-up on new technologies, solutions, and innovations hampers the ability to measure their effects and value. This deficiency further complicates the prioritization of new projects by management. Moreover, the absence of an established model for benefit calculation makes it challenging to demonstrate how present expenditures can translate into future gains.

Development projects are frequently paused or terminated in favour of other priorities, leading to a persistent conflict between routine healthcare delivery and innovative initiatives. This conflict encompasses both financial and human resources. Additionally, there is a goal conflict between eliminating existing solutions and initiating new ones.

Cultural and organizational challenges.

Stakeholders report a culture within Region Skåne that is partially ambitious and forward-looking but remains constrained by a long history of innovation-inhibiting practices. Recurring challenges are described, particularly the lack of sufficient interest in innovation at the highest management levels, preventing it from being perceived as an integral part of daily operations. One individual described the situation as perpetually waiting for the best outcome without realizing the necessity of hard work to achieve it.

Several stakeholders testify to an organization fatigued by change, where a historical pattern of acquiring IT systems has resulted in a patchwork of solutions that fail to address the major issues comprehensively. This has fostered resistance to change among healthcare staff and instilled a fear among managers at various levels to pursue changes and invest money into innovation, given that historically, more initiatives have failed than succeeded.

During the past year's economic downturn, several stakeholders have reported experiencing additional cutbacks in innovation-promoting activities by management in an effort to optimize costs and monetary savings. Among those with substantial knowledge and insight into the innovation system, this has generated significant frustration. They argue that a reasonable strategy to navigate a crisis while maintaining healthcare production is to embrace new and different approaches, rather than implementing across-the-board cutbacks. This is



considered by many to be yet another example of a cultural challenge where innovation is not understood and prioritized.

Best Practices identification

“[Innovationsguiden](#)” (**innovation guide**) is driven and designed by SKR (Sweden's Municipalities and Regions) and provides support for public sector innovation through user-driven design and service design methodology. SKR offers a step-by-step guide, methods, templates, and resources for conducting a service design process. The six steps in the design process are: Define, research, Focus, Ideate, Test and Realization. It includes training, coaching, and a network for user-driven innovation. The six-step model helps organizations understand and address user needs effectively, fostering a creative and engaging process.

Game Plan for Development and Innovation within Public Healthcare [Game-Plan-Sweper-brochure-ENG-20201015.pdf \(swelife.se\)](#) serves as a guide to facilitate strategic discussions and decision-making in innovation work within the Swedish Life Science sector. It is designed to be concise for easy reference during meetings or on digital devices.

- **Collaborative Framework:** The game plan outlines a strategy for development and innovation in public healthcare through collaboration between Swedish regions and the private sector, aiming to streamline the process from identifying needs to implementation and market competition.
- **Strategic Approach:** It emphasizes the importance of leadership, structured innovation, and avoiding the "project trap" where solutions are not sustainable post-project. The plan also highlights procurement as a critical tool for innovation.
- **Innovation Paths:** Describes various strategies for project realization, including in-house development, R&D collaboration, co-development, and purchasing, each with specific considerations and recommended Technology Readiness Levels (TRLs).
- **Implementation Focus:** Importance of implementing and disseminating innovations effectively, considering organizational changes and potential for joint procurement to address similar needs across regions.

The Supplier Guide (not published) provides a comprehensive guide for companies and business developers aiming to engage in public procurement. It outlines a structured approach divided into four phases: Listen and Understand, Plan and Adapt, Test and Implement, and Execute and Deliver. Here is a summary of each phase:

Listen and understand	<ul style="list-style-type: none"> ▪ Needs Assessment: Emphasizes understanding the customer's needs and the requirements of the intended users. Companies are advised to think creatively and build trust by being honest about their capabilities. ▪ Solution Identification: Identifies key functions or departments within public organizations to understand the whole process and decision-making paths. ▪ Contract and Business: Details the importance of understanding who will be responsible for maintenance and follow-up, and the significance of appropriate conduct and cultural awareness in public dealings.
Plan and Adapt:	<ul style="list-style-type: none"> ▪ Needs Assessment: Focuses on planning development costs and responding to Requests for Information (RFI) to introduce new services and solutions to the client. ▪ Solution Development: Discusses whether the solution is ready or needs further development, ensuring it aligns with public needs, and highlights unique values compared to other solutions. ▪ Contract and Business: Advises on verifying business models, revenue streams, and ensuring the decision-makers for investments are identified.
Assess and Implement:	<ul style="list-style-type: none"> ▪ Needs Assessment: Covers the capacity to conduct tests and studies, ensuring resources and timelines are defined. ▪ Solution Validation: Encourages partnerships with strategic development partners and conducting pilot tests to ensure the solution meets customer needs. ▪ Contract and Business: Ensures transparency in development work, avoiding conflicts of interest, and detailing the services and payment models.

Execute and Deliver:

- **Needs Assessment:** Highlights the importance of understanding long-term maintenance and service requirements from the customer.
- **Solution Delivery:** Advises on the need for proof of concept to demonstrate feasibility and understanding of the delivery implications.
- **Contract and Business:** Stresses the ability to deliver solutions within six months and understanding the consequences of failing to meet contract requirements.

The guide aims to provide practical tips and strategies for businesses to navigate public procurement successfully, emphasizing the importance of thorough preparation, clear communication, and strategic planning.

Summary of key points (SWOT analysis).



Figure 16: SWOT Analysis from Region Skåne

Guidelines for Action Plan

The major problems can be categorized into three main areas:

- **Economy:** The regional government's compensation system discourages innovation and suffers from insufficient resources, including a low budget and poor staffing. Additionally, there is a lack of benefit calculations to really showcase the profit of innovation work.

- **Processes:** The system is difficult to navigate, with unclear responsibilities and roles, hindering efficiency and clarity.
- **Culture:** There is a behaviour among individuals that contributes to a culture that does not allow for failure or exploring new territories, which stifles development and improvements.

Identified needs include:

- **Leadership:** A clear mission and mandate are required, shifting from individual-based to system-anchored leadership.
- **Processes:** There is a need for demand-driven processes with clear follow-up and knowledge sharing within the organization.
- **Innovation-friendly procurement:** This needs to be prioritized even further, along with continued education to foster courage and decisiveness.

The results emerging from the interaction with the stakeholders and innovation players clearly reflect the current level of knowledge and practice of InnPr in the habitual procurement activity from those public and private bodies in Region Skåne. Those findings lead to the identification of the following priority areas to overcome the challenges and take advantage of the opportunities identified.



Figure 17: Action Plan areas in Region Skåne

- **Economy:** A clear assignment and associated budget for the health care sector to work structured and sustainable with innovation. Adopt data-driven approaches and value- and compensation models.
- **Innovation Management:** Establish a clear connection between vision, strategy, and implementation.
- **Processes:** Develop a clear internal process following iterative logic for the entire innovation journey, in collaboration with support functions.
- **Ecosystem:** Create a well-functioning and clear framework for the entire innovation ecosystem to facilitate collaboration and development over organizational borders.



4 Conclusions and recommendations

4.1 Importance of regional innovation procurement for economic development and competitiveness.

“Big buyer can kill the market, develop the market, or create new markets through public procurements. There should always be room for innovation – a moment to consider whether there is something which could be done differently.”⁴

Public procurement has a huge potential to influence as well as financial savings. Innovations open new business opportunities for enterprises. Allowing innovative solutions in public procurement it will offer new references, which can help enterprises access new, even international, markets. Small and medium-sized enterprises are often nests of innovation. Their participation in public procurement is vital.

Public procurements are tools to achieve the goals set by legislators. Innovation should be integrated into the planning process of public procurements just like any other aspect of effectiveness. Communicating the planned procurements to the market on time is a great way to be market friendly.

Public procurement with an innovative approach is an effective tool to advance social and societal objectives. High value can be achieved for public money and larger economic, societal, and environmental benefits, as well as economic growth. New ideas for innovative services and products can be promoted and exchanged by innovative public procurement.

By focusing on acquiring innovative solutions tailored to local needs, regions can significantly impact their economic and social landscape. Innovation procurement stimulates regional business, creating jobs and driving economic activity by prioritising local suppliers and startups. This approach attracts investments from both public and private sectors, fostering a robust economic environment. Furthermore, it allows regions to develop customised solutions for specific challenges, such as healthcare, infrastructure, and environmental sustainability, leading to more effective and efficient public services.

The economic benefits of regional InnPr are vast. It promotes sustainable development by encouraging the adoption of new technologies and resource-efficient practices. This optimises the use of regional resources leading to cost savings and enhanced sustainability.

Competitiveness is significantly boosted through InnPr. Regions that prioritise innovative solutions position themselves better for competition and support a thriving local innovation ecosystem. This ecosystem fosters research, development, and entrepreneurial activities, which are crucial for long-term economic vitality.

Socially, InnPr can increase community engagement by involving users in projects that directly benefit them. It also promotes inclusive growth, ensuring that innovation reaches all parts of the region, thereby reducing inequalities. Enhanced collaboration and partnerships are another critical aspect. Innovation procurement fosters public-private partnerships and knowledge sharing between public authorities, private companies, and research institutions, leading to comprehensive solutions and better outcomes.

Strategically, investing in innovative solutions helps regions prepare for future challenges and opportunities, ensuring long-term resilience and adaptability. Regions that are known for their innovative approaches gain a reputation as leaders in specific sectors, attracting talent and further investment.

⁴ Mrs. Johanna Lahdenperä (procurement manager of the City of Oulu):

In summary, regional InnPr is a powerful tool for driving economic growth, improving public services, and fostering sustainable development. Its strategic implementation can lead to significant economic, social, and environmental benefits, making it a vital component of regional development strategies.

4.2 Call to action for stakeholders to engage in and support regional innovation procurement initiatives.

Refreshing the regional innovation system

Regional innovation system is usually based on ICT-cluster and close-by industries. Procedures and practicalities are often made to support these branches. Especially after Covid-19 period new branches rose and become more dominant, especially ubiquitous digitalisation and energy production. Innovative procurement and demand-driven innovation can renew the whole system because it is necessity. New clusters employ more personnel and are becoming economic foundation of the region.

Enhance Public-Private Partnerships

Public-private partnerships are fundamental to successful InnPr. Stakeholders should facilitate collaborations through platforms and partnerships, encouraging the sharing of knowledge and resources. By working together, public, and private entities can achieve larger economic, societal, and environmental benefits.

In regional level importance of innovative procurement is often dismissed or not prioritized high enough. With action plan procurement can be brought into practice when organisations and stakeholders have joint vision and concrete actions are taken together or parallel. Collaboration is long process which is based on trust and successful cases. These cases foster new ideas in individual procurement cases and collaboration.

Simplifying the innovation adaption

European innovation clusters are criticised for slowness. Research is in good position, but new services and products does not emerge. This also applies in the regional level. Innovative procurement can help simply and fasten innovation chain or cycle. New measures in procurement helps policy makers and other stakeholder, buyers, providers and specially end-users and customers.

Invest in Capacity Building

Training and capacity building are key for InnPr. Stakeholders should invest in enhancing the innovation capacity of public administration staff and other relevant personnel. This can be achieved through training programs, workshops, and the development of conceptual tools to explore new methodologies for public procurement.

By actively participating in and supporting regional InnPr initiatives, stakeholders can contribute to a dynamic and resilient regional economy. Their involvement is crucial for driving forward innovative solutions that benefit the entire community.

4.3 Main areas of action identified at a regional level: call to action.

The document identifies three main areas of action that need to be addressed to enhance regional InnPr effectively:

- **Economic Challenges:** Resource constraints are a significant issue, with insufficient budget and staffing impeding innovation efforts. Additionally, there is a lack of clear benefit calculations to demonstrate the financial advantages of innovation work. There is a need for a thorough analysis on the benefits to concrete specific budget lines.
- **Process Inefficiencies:** The procurement system is often complex and difficult to navigate, leading to inefficiencies and a lack of accountability. Responsibilities and roles within the procurement process are unclear, contributing to these inefficiencies. A clear governance could improve the processes' inefficiencies.
- **Cultural Barriers:** A cultural resistance to change exists, which does not encourage exploration or the acceptance of failure. This resistance checks innovation and improvement. Staff training could be a good measure to start changing this cultural resistance.

Addressing these challenges requires a multifaceted approach:

- **Leadership.** A shift from individual-based to system-anchored leadership is necessary. Leaders should have a clear mission and mandate to drive innovation.
- **Procurement processes.** Implementing demand-driven processes with clear follow-up and knowledge sharing is essential. There should be an iterative internal process for the entire innovation journey, collaborating with support functions for better outcomes.
- **Appropriate funding.** Allocating a clear budget and a structured approach for sectors like healthcare to work sustainably with innovation is crucial. Adopting data-driven approaches and value-based compensation models can further support economic solutions.
- **Capacity and awareness raising.** Prioritising innovation-friendly procurement practices and continuous education is necessary to foster courage and decisiveness within organisations.
- **Ecosystem Development.** Creating a well-functioning framework for the entire innovation ecosystem will facilitate collaboration across organizational boundaries. This includes establishing a clear connection between vision, strategy, and implementation to ensure coherence and effectiveness.

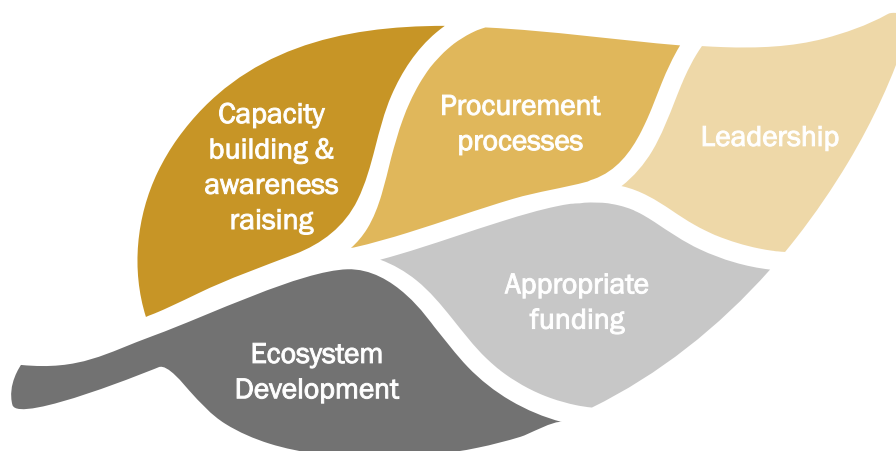


Figure 18: Multifaceted approach followed by PREPARE for the definition of the Joint Programme and Regional Action Plans

By addressing these areas, the document envisions a more efficient and effective regional InnPr process, driving both economic growth and societal benefits.



5 Annex 1: Case Studies

Practice Title	OuluBOT
Region	City of Oulu, Finland
Objective	Development of the robot assistant to help citizens and tourists to get information, make applications and get public services on the webpages of the city of Oulu. Development of new customer-friendly digital service methods.
Stakeholders involved	BusinessFinland
Procurement Process	<p>Competitive procedure with negotiation including co-creation in the demo phase.</p> <ul style="list-style-type: none"> 6-8 months planning time with public pre-announcement and call for information, market dialogues with 24 participants. Requirements and award criteria: 20% price, 80% quality IPR belongs to the enterprise. Oulu has a Licence including development possibility (mentioned in the contract with the city of Oulu).
Innovation Outcomes	<p>Process was efficient: development and demo phase and implementation phase were in time and within the contract. Service is in function and enabled in POHDE Ostrobothnia Wellbeing Service County with the name of Digital Health Care Centre. (Usually, enterprises do not inform the city of Oulu when they sell the product further. But this case is known by the other reasons).</p> <p>Procurement impacted positively new markets and service production. City of Oulu was a good and useful reference to the service production enterprise.</p>
Challenges	The innovative procedure needs a lot of time for pre-planning, information gathering, objective and open negotiations, careful contract, and responsibilities, IPR contract and possibility to develop forward, good documentation.

Practice Title	OuluINFRA
Region	City of Oulu, Finland
Objective	Outsourcing infrastructure construction, green and road construction, and maintenance to get better quality and quality control, to put more value to cost efficiency and status and wellbeing of transferring personnel. Transfer of business is included.
Procurement Process	<p>Negotiation procedure (because of the transfer of business) in winter 2023-24.</p> <ul style="list-style-type: none"> Criteria of choice: 69% price, 1% quality promises, 30% takeover plan with wellbeing-at-work and job-satisfaction plan. Sanction/bonus and incentives system included. 5 years contract period + potential 2 years option period.
Innovation Outcomes	<ul style="list-style-type: none"> Expected start of the contract period on the 1st of October 2024. Quality promises included e.g. sustainable development criteria; systematic customer/client needs evaluation. Extra value to the wellbeing-at-work and job-satisfaction issues. Expected impacts: Procurement impacts positively new markets and service production. City of Oulu is a good and useful reference to the service production enterprise. The biggest outsourcing with the transfer of business project (value ~117,5 mil€ and of its kind) by public procurement in Finland in recent years and will be a national example in related cases.
Challenges	Innovative procedure needs a lot of time for pre-planning, information gathering, objective and open regulations
Lessons Learned	It is particularly important to design a careful contract and responsibility design, good process documentations.



Practice Title	Sanction – Bonus Instrument in Piece Work/Procurement: Maintenance of District Bike Roads
Region	City of Oulu, Finland
Objective	Maintenance of the district bike roads in the city of Oulu/several replicas. In each piece work year, the service provider earns yearly bonus (certain sum) if the set and certain conditions actualized:
Procurement Process	<ul style="list-style-type: none"> ▪ No sanctions ▪ Choose yearly 3 criteria of the list which prove added value to the work: social employment, using low carbon vehicles, continuous initiatives, using social media in consumer service and information, gathering statistics from customer feedback, and analysing and developing services, co-operation with inhabitants (e.g. Events), moving snow efficiently in the near district. ▪ Service provider shows, how the bonus is shared between main provider, sub-contractors, and personnel. ▪ Bonus is voluntary criteria. So far, all the service providers have chosen it. Mystery bikers are used to assess the quality of service.
Innovation Outcomes	Job possibilities for persons, who are in weak labour position. Lesser carbon dioxide to the air in wintertime when cold air causes breathing difficulties. Citizens are involved and heard in the public services, where they are in the core. Lesser reclamations.
Scalability and Replicability	Sanction-bonus -model is quite easily replicable to wide range of procurements, which are targeted straight to citizens. E.g. school children transport.
Benefits	Model decreases negative publicity, reclamations, and potential contract interpretation conflicts.

Practice Title	Zero emissions vehicle – Hydrogen Vacuum Cleaner and Electric Garbage Trucks
Region	City of Rotterdam, the Netherlands.
Objective	The purpose is to find big zero-emission vehicles for waste collection. The city's carbon neutrality target must be included in all procurement. A couple of years ago big waste collection vehicles that meet the standards of zero emissions are not yet produced on a large scale. Clearly defined objectives or goals of the procurement practice.
Procurement Process	<p>Negotiation procedure. Prior to negotiation procedure market research was done with the conclusion that no supplier could deliver what was needed. This procedure could only be used for the development of one vehicle of that kind. Terms and conditions of the United Municipalities were used. Negotiation procedure without prior publication may be used for public supply contracts: When the products involved are manufactured purely for research, experimentation, study, or development; Contracts awarded according to this point shall not include quantity production (...) or to recover research and development costs (Article 2.33A European procurement)</p> <p>Prior to negotiation procedure market research was done with the conclusion that no supplier could deliver what was needed. This procedure could only be used for the development of one vehicle of that kind.</p>
Innovation Outcomes	<ul style="list-style-type: none"> ▪ City of Rotterdam is one of the first cities with zero emission vehicles for waste management. ▪ Good result with the vehicle itself. ▪ A new innovative vehicle was developed. ▪ Larger impact occurs when procuring larger quantity of vehicles and also when others can purchase similar vehicles. ▪ Market is developing. ▪ Demand is increasing
Scalability and Replicability	We used the learning in a recent tender of a framework agreement to buy 20 electric waste collection waste.
Challenges	The cost of a single vehicle is high when developing something new. Benefits in cost occur later. The market needs to develop.



Practice Title	iBuy project – Enhancing InnPr in Bucharest-Ilfov
Region	Bucharest-Ilfov, Romania
Objective	<ul style="list-style-type: none"> To strengthen the capacity for InnPr within public authorities. To promote collaboration between public and private entities. To facilitate the procurement of innovative solutions that address regional and urban challenges.
Stakeholders involved	<ul style="list-style-type: none"> Agentia pentru Dezvoltare Regionala Bucurest-Ilfov (ADRBI): Facilitate regional development and innovation projects. Interreg Europe Progra: Supported the financial aspects of the project.
Procurement Process	Awareness improvement about the potential of InnPr and about its legal framework.
Innovation Outcomes	<ul style="list-style-type: none"> Report on status of InnPr at different levels. Guidelines for public authorities. Describing the main steps in setting up a PPI Competence Centre. Analysis on regional financial instruments to foster InnPr locally.
Scalability and Replicability	The outcomes developed have a scalable potential to improve the use of InnPr by public authorities and to foster innovation locally. The awareness campaign is designed to be replicable across different sectors and regions
Challenges	<ul style="list-style-type: none"> Convince public authorities to explore new pathways to foster innovation. The information gap between European directives and national applications.
Lessons Learned	<ul style="list-style-type: none"> Continuous training and support are essential for public entities and private sector partners to effectively use the InnPr. Pilot projects help validate solutions and demonstrate their feasibility. Collaboration with public institutions and private sector partners accelerates innovation and implementation.

Practice Title	Innovator of the Public Administration Pilot Programme
Region	Bucharest-Ilfov Region and National
Objective	To improve introductory knowledge of innovation in public sector
Stakeholders involved	<ul style="list-style-type: none"> National Institute for Administration https://ina.gov.ro/en/ Innovation Lab, Government General Secretariat https://sgg.gov.ro
Procurement Process	Training programmes on innovation in Public Administration, as a prerequisite for InnPr initiatives.
Innovation Outcomes	<ul style="list-style-type: none"> Increased innovation capacity in Public Administration Innovation-related competences by Public Officers Insight on Innovation labs methodology
Scalability and Replicability	Based on the pilot programme outcomes assessment, the programme will be revised, upgraded, and extended to meet the needs of all levels of public administration. - Once developed, it may be scaled up to a long-lasting training offer.
Challenges	<ul style="list-style-type: none"> Convince Public Administration authorities to explore innovation as a means to address community's needs and improve public services. Link innovation theory and practices to on-the-ground challenges and urgencies. Link innovation adoption to InnPr and overcome identified barriers.
Lessons Learned	not applicable, the Pilot Programme was launched in June 2024.
Links	https://ina.gov.ro/cursuri/programe-de-perfectionare/dezvoltare-institutionala-si-politici-publice/inovatorii-din-administratia-publica-program-pilot

Practice Title	The Public Procurement Guide
Region	Romania, National.
Objective	To provide guidance and support to all participants in the Public Procurement processes.
Stakeholders involved	National Agency for Public Procurement https://anap.gov.ro/web/
Procurement Process	The Public Procurement Guide is an interactive online tool administered by the National Public Procurement Agency, which contains practical information for public procurement stakeholders. It covers all public procurement processes conducted by any Contracting Authority, for all activities. It includes one module covering sustainable public procurement for green, social and InnPr. Innovation procurement https://achizitiipublice.gov.ro/matrix/cell/424/1
Innovation Outcomes	Increased capacity for InnPr in Public Administration
Scalability and Replicability	Guide's growth of functionality and capacity and its organizational expansion are guaranteed through some of its features: <ul style="list-style-type: none"> ▪ Modular architecture allowing for adding or improving modules without affecting the entire system. ▪ Flexible design that allows quick adaptations to regulatory changes or market requirements. ▪ Feedback mechanism via annual assessments followed by improvements. ▪ Regular updates. ▪ Collaboration with Public Institutions such as Government agencies and other public institutions to ensure the validity and constant updating of information in the guide. ▪ The Guide has not been translated yet to any foreign language.
Challenges	<ul style="list-style-type: none"> ▪ To develop an interactive, updatable operation guide capable of replacing tertiary level overregulation. ▪ To guarantee the guide will determine a strong shift at the entire Public Procurement System level.
Links	https://achizitiipublice.gov.ro/home

Practice Title	Leveraging the SEAP Digital Platform for InnPr
Region	Bucharest-Ilfov Region, Romania
Objective	<ul style="list-style-type: none"> ▪ To streamline the procurement process and increase transparency. ▪ To foster innovation through competitive bidding and collaboration ▪ To enhance the adoption of advanced technologies in public services.
Stakeholders involved	<ul style="list-style-type: none"> ▪ Agenția Națională a Achizițiilor Publice (ANAP): Oversees the rules on public procurement procedures. ▪ Agenția pentru Dezvoltare Regională București-Ilfov (ADRBI): Facilitates regional development and innovation projects. ▪ Primăria Municipiului București: Leads municipal-level innovation initiatives (Primăria București). ▪ Consiliul Județean Ilfov: Manages county-level public administration and procurement. ▪ Private Sector Partners: Various technology firms and startups participating in the SEAP platform. ▪ European Union Funding Programs: Supports the financial aspects of innovation projects.
Procurement Process	<ul style="list-style-type: none"> ▪ Identification of needs or challenges. Public entities identify specific challenges and needs through stakeholder consultations, workshops, and public feedback. These needs are then published on the SEAP platform to attract innovative solutions. ▪ Specification development and call for proposals. Detailed specifications are collaboratively developed, focusing on interoperability, scalability, and sustainability. Open calls for proposals are issued via the SEAP platform, inviting innovative solutions from private sector partners. ▪ Evaluation criteria and selection process. Proposals are evaluated based on their innovation potential, impact on public services, cost-effectiveness, and scalability. The selection process



	includes multi-stage evaluations, proof of concept, pilot testing, and stakeholder feedback sessions facilitated through SEAP.
Innovation Outcomes	A digital platform that facilitates public announcements, matchmaking, and transparency.
Scalability and Replicability	The practices are designed to be scalable and replicable across different sectors and regions. The SEAP platform's modular nature allows for phased implementation and adaptation to local needs and conditions.
Challenges	<ul style="list-style-type: none"> Ensuring widespread adoption and usage of the SEAP platform. Integrating new technologies with existing public infrastructure. Managing data security and privacy concerns.
Lessons Learned	<ul style="list-style-type: none"> Continuous training and support are essential for public entities and private sector partners to use the SEAP platform effectively. Pilot projects help validate solutions and demonstrate their feasibility. Collaboration with academic institutions and private sector partners accelerates innovation and implementation.

Practice Title	Energy efficient refurbishment of tertiary building by Barcelona Municipality
Region	Cataluña, Spain
Objective	Barcelona Municipality has transformed two old textiles factories into an urban innovation centre (Ca l'Alíer). It is the latest example of how the city's industrial heritage is being regained for new uses. The aim is to promote the concept of net zero energy buildings (NZEB) and serve as a reference for building refurbishment industrial areas of the city.
Stakeholders involved	Barcelona Municipality, Growsmarter
Procurement Process	<ul style="list-style-type: none"> Public-private partnership in the framework of Barcelona's Smart City Program. Planning time: 6 months to 1 year Implementation time: 1 to 2 years
Innovation Outcomes	<p>Ca l'Alíer integrated the features of a low energy district (e.g. low energy demand in buildings and high energy self-sufficiency thanks to integration of renewable energy resources) with advanced infrastructures related to Information and Communication Technologies and advanced control of facilities. Information management could help saving energy and reducing carbon emissions by showcasing the development and replication of smart cities' solutions for low energy districts.</p> <p>The active technologies implemented in Ca'Alíer are:</p> <ul style="list-style-type: none"> Lighting: LEDs and occupancy sensors HVAC: variable speed fans, free-cooling On-site generation: photovoltaic panels Connection to local district heating and cooling (DHC) network Smart Energy Management System
Scalability and Replicability	Great potential to replicable in other regions. In terms of scalability, this initiative is comprised within the Barcelona's Smart City Program which has other similar initiatives.
Challenges	Energy-efficient renovation of heritage buildings provides a more attractive use and better occupation of these buildings while assuring a reduced energy bill. The integration of local energy generation respecting heritage preservation concerns has proven to be technically feasible. However, in order to ensure an optimal energy management of the building, it is crucial that staff receive training in the operations and maintenance of the innovative solutions in the building.
Lessons Learned	<p>Working together with the urban planning department of the municipality already from the design phase of the project is strongly recommended to select the most appropriate innovative technologies that respect the historical value of buildings.</p> <p>The main benefits were:</p> <ul style="list-style-type: none"> Decreasing energy consumption in buildings, Reducing energy bills, Improving energy usage efficiency,



- Increasing share of renewables energies,
 - Reducing GHG emissions, and
 - Promoting sustainable behaviour.
- Measured Impacts:
- 48% reduction in heating energy consumption (Library LesCorts)
 - 12% reduction in cooling electricity consumption (Library LesCorts)
 - 84% reduction of CO2 emissions by the heating systems (Ca l'Alier)

Practice Title	Incircle: Pilot Demonstrator in Palma.
Region	Palma, Balearic Islands, Spain.
Objective	<p>The Municipality of Palma acts and pilot a Circular Economy solution focused on waste management and reduction of waste generation. The goal was to see a reduction in the consumption of single use plastic bottles for mineral water.</p> <p>The provision of reusable water bottles to local businesses helped provide revenue for them and compensation for the intended reduction in single use plastic bottle sales.</p>
Stakeholders involved	Municipality of Palma, Incircle Interreg MED Project Consortium, EMAYA S. A
Procurement Process	<ul style="list-style-type: none"> ▪ 100% EU Funds from the Incircle Project. ▪ Planning time: 2 years ▪ Implementation time: 1 year
Innovation Outcomes	<p>Installation of a network of street drinking fountains along the city with the focus being on tourist areas. 15 fountains were created in the most touristic places in the city. This was done alongside the distribution of reusable water bottles (10,000 units) through local touristic businesses.</p> <p>Additionally, an app was developed to promote the use of the street fountains system amongst tourists and local people and to help them know the locations of the fountains. Production of a promotional video, firstly to boost tap water consumption, as well as from the street fountains, and secondly to promote the availability of the app to download.</p>
Scalability and Replicability	<p>To adopt and implement the regional and national strategy for the circular economy and considering local needs, Palma Municipality elaborates a Local Action Plan which lies on the pillars below:</p> <ul style="list-style-type: none"> ▪ Water. The plan aims to improve the quality water supply, even if it is already potable, to reduce mineral water consumption. ▪ Mobility. There is a general objective to reduce by 5% traffic. There is a measure to connect by tram the city centre passing through the whole coastal area, were there are located most tourist spots in the city. ▪ Waste. There is a general objective to reduce waste generation by 10% in 2025. There is a measure to collect selectively the whole organic portion to transform it into compost. ▪ Energy. There are two general objectives for 2030 at municipal level. Firstly, increasing up to 32% energy supply from RES and secondly, decreasing by 32.5% energy consumption through efficiency.
Challenges	<p>The city of Palma is one of the most visited spots in the Mediterranean area. The tourist flows impact directly on the environment causing a shortage of resources such as water and the decreasing of air quality, the increasing of waste generation and so on. They are also causing land shortage issues due to the amount of new infrastructure required for maximum tourist demand and not only for the local population (roads, incinerating plant, airports, ports, hotels, and resorts).</p> <p>However, tourism is a source of richness that carried employment and wellbeing to areas initially less advanced. A tourist society usually is multicultural, open-minded, and diverse, these features create and support a more innovative environment that allows for regional development</p>



Impact	<p>One of the most important priorities for the Municipality of Palma is to transform the city into one of the most sustainable and circular tourist destinations.</p> <p>Benefits</p> <ul style="list-style-type: none"> ▪ Promoting sustainable behaviour, ▪ Enhancing tourism experience, ▪ Reducing waste generation, and ▪ Recycling waste.
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Practice Title	Plugging the next-generation IoT into a data-driven city in Spain
Region	Cartagena, Region of Murcia, Spain
Objective	The City of Cartagena aims to establish an innovative and adaptative solution for urban security, surveillance, and event monitoring. To achieve it, a public-private partnership was created and received funding from EIT Digital 2022, a program dedicated to reinforcing a digital Europe.
Stakeholders involved	Cartagena Municipality, EIT Digital 2022 Program , Signify BrightSites , Libelium
Innovation Outcomes	<p>Signify BrightSites delivers the Connectivity Grid of the Future that provides wireless broadband connectivity via lighting infrastructure in the City of Cartagena, eliminating the need for fiber trenching. This will enhance the City's smart city initiatives by facilitating a swift deployment of environmental sensors, and future video surveillance and 4G/5G applications. Additionally, this innovative solution will generate recurring revenue streams for the City through its infrastructure.</p> <p>Revenue streams</p> <ul style="list-style-type: none"> ▪ Broadband luminaires and IoT devices composed by Signify BrightSites with Libelium air quality sensors, and other vendor solutions. Broadband Luminaires enable a wide range of extensions, such as surveillance cameras, and Wi-Fi, over a high-band (5G/6G) network (smart city infrastructure). ▪ Added-value services repository: Open platform (FIWARE) for a remote-control management system and visualize tools will be deployed as well for data-driven services.
Scalability and Replicability	This project has the potential to scale and be replicated to other cities and countries, as well as more use cases such as 5G applications.
Challenges	<p>Cartagena wants to achieve an intelligent and context-aware solution for urban security, surveillance, and monitoring of potential events, anomalies, and threats.</p> <p>In the post-COVID and Agenda 2030 era (Green Deal to address climate change mitigation), cities are drivers towards sustainability and resilience (recovery funds -NextGen Europe). Therefore, it is the best momentum to transform legacy luminaire parks and extend the outdated infrastructure to enable an open and extensible ecosystem and marketplace that will tackle these issues, accelerate the cities' digitalization, and boost sustainability, at the same time promoting public-private cooperation.</p> <p>Difficulty in understanding products from different parties because products were developed in different locations. It was solved by more frequent communication.</p>
Impact	<p>The project provides a clear impact of the solution, defines a methodology, uses cases and validates the technology. It validates the opportunities for the different needs in terms of smart destinations (heritage areas), climate change (energy-efficient, environment monitoring), and zones with high-security issues (CCTV, video, and noise processing over 5G/6G).</p> <p>Benefits</p> <ul style="list-style-type: none"> ▪ Increasing safety, ▪ Improving life quality, ▪ Enhanced data collection, ▪ Enhanced data analysis, ▪ Smart data, ▪ Single access point for information, ▪ Enhanced safety and security, and ▪ Prepare the city for disruptive events.



Practice Title	Smart City Platform in Logroño
Region	La Rioja, Spain
Objective	<p>The city recognized the need for a Smart Cities Platform to function as a hub for the collection and use of information and data. Logroño intends to grow with several objectives:</p> <ul style="list-style-type: none"> ▪ To increase the quality of life of their residents, ▪ To ensure the economic, social, and environmental sustainability of the city, ▪ To make Logroño a more innovative, competitive, attractive, and resilient city. <p>The "Smart Management of the City of Logroño" project consists of many different tools, such as a municipal GIS system, remote control of public lighting, smart irrigation system, anti-theft devices for lighting cables, etc. They are also part of the Spanish Network of Smart Cities (RECI) and the Covenant of Mayors. The city wanted to change while maintaining its identity, strengthening its economy, and placing citizens at the centre of all decisions and encouraging them to participate more. Smart Logroño is a set of strategic solutions to prepare the city, its workers, and all projects.</p>
Stakeholders involved	<ul style="list-style-type: none"> ▪ Logroño City Council, ▪ Indra Sistemas, ▪ Suma Info, ▪ Minsait (Indra)
Procurement process	<p>The platform is part of the 'Intelligent Management of the City of Logroño' project, which is 100% financed with municipal funds.</p> <ul style="list-style-type: none"> ▪ Planning time: 2 to 5 years ▪ Implementation time: 1 to 2 years
Innovation Outcomes	<p>The objectives and vision for the future of the city were identified, with the aim of placing citizens at the centre of all decisions made and all development undertaken.</p> <p>Three main groups were defined: Infrastructures and Communication Networks; Integrated Control Centre CCI; and the Integrated Municipal Services Management Platform - each group taking on different tasks.</p> <p>The Integral Control Centre CCI is the symbol of the integration of resources dealing with traffic, transportation, street lighting, etc.</p> <p>Communication Infrastructures and Networks provides the necessary connectivity of smart cities between people, devices, and systems.</p> <p>Integral Management Platform of Municipal Services offers Open Data to citizens, creates relationships with different groups and organizations in the city, stores Big Data related to Logroño among other things.</p> <p>While offering services to its citizens, the city is able to manage itself autonomously through automation or with minimal human intervention. It is also able to monitor the number of resources such as water and energy used and is able to automatically program itself to reduce its use. The system warns of any potential service failure, allowing the city to work ahead and save time.</p> <p>Revenue streams: The automated water system is capable of measuring soil moisture levels in green areas, allowing watering when needed and using less water, resulting in savings.</p>
Scalability and Replicability	<p>This project holds the promise of expansion and duplication in other cities and nations that are interested in establishing smart city platforms to manage such data.</p>
Supporting factors	<p>The city has been moving in the direction of becoming a Smart City since the early 2010s, so creating the platform was easy, as the tools already existed.</p>
Impact	<p>An efficient government system is key to a healthier, happier, and more sustainable city.</p> <p>Impact: Logroño has defined good governance as one of its main objectives to improve many aspects of life in Logroño. It is defined by a management based on the efficient and effective use of resources that guarantees economic savings and a better environmental quality that in turn results in a higher quality of life for its citizens. Logroño has already noticed a 35% decrease in</p>



	<p>the amount used to irrigate green areas thanks to the irrigation system programmed through the Smart Logroño Platform.</p> <p>Benefits</p> <ul style="list-style-type: none"> ▪ Improving personnel efficiency ▪ Improving energy usage efficiency ▪ Smart data ▪ Reducing operation costs ▪ Decreasing energy consumption in buildings ▪ Reducing waste generation ▪ Improving life quality ▪ Increased data transparency ▪ Enhanced data security ▪ Enhanced data analysis ▪ Collecting valuable data and real-time information ▪ Prediction based on useful data
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Practice Title	Biobased disposable aprons
Region	Region of Skåne, Sweden
Objective	To develop a more sustainable apron to reach environmental goals regarding climate footprint in region of Skåne. By replacing oil-based aprons to biobased we aimed to reduce CO2 emissions at least 70% within the specific product area. The process opened up for non-traditional and new suppliers in the region
Stakeholders involved	<ul style="list-style-type: none"> ▪ Region Skåne. ▪ Innovation Skåne. ▪ Lund University.
Procurement process	<ul style="list-style-type: none"> ▪ - Identification of needs and challenges, ▪ - Exploration of possibilities, ▪ - Business intelligence and readiness on the market, ▪ - Competitive dialogue, ▪ - Set up of test process, ▪ - Evaluation of test series, and ▪ - Final procurement and implementation.
Innovation Outcomes	<ul style="list-style-type: none"> ▪ Bargain winning bids by SEK 1,248,000 / year, corresponding to cost reduction of 30%. ▪ Better formulation, design, and functionality ▪ A larger share of renewables (91%) ▪ Better product in terms of climate ▪ Locally produced. ▪ Local ingredients ▪ New job opportunities in Skåne (10) ▪ From 277,480 kg CO2/year to 25,000 Kg CO2 (9% of 277480)
Scalability and Replicability	Strong potential that a similar process could be applied to other product categories.
Lessons Learned	Keep an objective focus on the aim, follow a strict but iterative process and convince essential stakeholders including end-users. The suppliers were offered support for product development, adjustments, and some financial support.

Practice Title	Fall prevention in hospital care
Region	Region of Skåne, Sweden
Objective	To develop a solution to decrease the number of falls in hospital environment with 20%
Stakeholders involved	<ul style="list-style-type: none"> ▪ Region Skåne. ▪ Innovation Skåne. ▪ Knowledge providers.



Procurement process	<ul style="list-style-type: none"> ▪ Identification of needs and challenges involving both caregivers and patients ▪ Exploration of possibilities ▪ Business intelligence and readiness on the market ▪ Involvement of service designers to illustrate the need area ▪ Competitive dialogue ▪ Set up of test process. ▪ Evaluation of test series ▪ Final procurement and implementation
Innovation Outcomes	A new bed sensor collecting real time data regarding the vital parameters of the patient. The bed sensor communicate directly with a monitor and information regarding fall risk was sorted out and early warning was provided to caregivers.
Scalability and Replicability	Great potential for fall prevention in many different clinical environments.
Lessons Learned	Keep an objective focus on the aim, follow a strict but iterative process and convince essential stakeholders including the end-users. The suppliers were offered support for product development, adjustments, and detailed know-how regarding the specific care environment.

Practice Title	Remote care of heart failure patients
Region	Region Skåne, Sweden
Objective	To improve quality of life in patients with heart failure by increasing patient involvement and decrease the amount of acute hospital care because of not optimally adjusted medication in patients with heart failure.
Stakeholders involved	<ul style="list-style-type: none"> ▪ Region Skåne. ▪ Innovation Skåne. ▪ Lund University.
Procurement process	<ul style="list-style-type: none"> ▪ Identification of needs and challenges involving both care givers and patients ▪ Exploration of possibilities ▪ Business intelligence and readiness on the market ▪ Involvement of service designers to illustrate the need area ▪ Competitive dialogue ▪ Set up of test process. ▪ Evaluation of test series ▪ Implementing during Covid pandemic
Innovation Outcomes	Improved access for the patient to information regarding their treatment and health status which resulted in improved self-care/compliance and decrease of hospitalization by 50% within this patient group.
Scalability and Replicability	Great potential for similar conditions.
Lessons Learned	Keep an objective focus on the aim, follow a strict but iterative process and convince essential stakeholders including end-users. The suppliers were offered support for product development, adjustments, and detailed know-how regarding the specific care environment.

Practice Title	Human centric light in neonatal award
Region	Region Skåne, Sweden
Objective	To develop a more sustainable work and health environment for neonatal care. The process opened up for non-traditional and new suppliers in the region. The suppliers had technical experience in lighting for health and wellbeing to ensure good health and great performance. We asked for a system that could provide the right kind of light at the right time.



Stakeholders involved	<ul style="list-style-type: none"> ▪ Region Skåne. ▪ Innovation Skåne. ▪ Knowledge providers.
Procurement process	<ul style="list-style-type: none"> ▪ Identification of needs and challenges involving both caregivers, neonatal patients, and their parents ▪ Exploration of possibilities ▪ Business intelligence and readiness on the market ▪ Involvement of service designers to illustrate the need area ▪ Competitive dialogue ▪ Set up of test process. ▪ Evaluation of test series ▪ Final procurement and implementation
Innovation Outcomes	<p>A new human centric light solution for hospital environment was developed and implemented. The light solution provided possibilities to choose different light spot in order not to disturb the neonatal patients but still allow staff perform specific tasks in an adjusted light. allowed bed sensor collecting real time data regarding the vital parameters of the patient. The bed sensor communicated directly with a monitor and information regarding fall risk was sorted out and early warnings was provided to care givers.</p>
Lessons Learned	<p>Keep an objective focus on the aim, follow a strict but iterative process and convince essential stakeholders including end-users. The suppliers were offered support for product development and detailed know-how regarding the specific care environment.</p>

6 Annex 2: Stakeholders mapping

Murcia	
Public Organization	Department (if any)
Conserjería de Economía	Subdirección General coordinación de la Contratación y Racionalización del Gasto
	Secretaría de la Junta Regional de Contratación Administrativa
Consejería de Interior, Emergencias y Ordenación del Territorio	
Consejería de Política Social, Familias e Igualdad	Instituto Murciano de Acción Social
Consejería de Presidencia, Portavocía y Acción Exterior	Boletín Oficial de la Región de Murcia
Consejería de Agua, Agricultura, Ganadería y Pesca	Instituto Murciano de Investigación y Desarrollo Agrario y Medioambiental
	Entidad Regional de Saneamiento y Depuración de Aguas Residuales de la Región de
Consejería de Economía, Hacienda y Empresa	Servicio de contratación centralizada y gestión del gasto
	Agencia Tributaria de la Región de Murcia
	Instituto de Crédito y Finanzas de la Región de Murcia
	Radiotelevisión de la Región de Murcia
	Instituto de Fomento de la Región de Murcia
Consejería de Medio Ambiente, Universidades, Investigación y Mar Menor	
Consejería de Turismo, Cultura, Juventud y Deportes	Instituto de las Industrias Culturales y de las Artes de la Región de Murcia
	Instituto de Turismo de la Región de Murcia
Consejería de Fomento e Infraestructuras	
Consejería de Educación, Formación Profesional y Empleo	Servicio Regional de Empleo y Formación
Consejería de Salud	Servicio Murciano de Salud
Consejería de Medio ambiente	Departamento de Contratación
Consejería de Transparencia, Participación y Cooperación de la Región de Murcia	
Federación regional de municipios	
Municipio de Murcia	
Municipio de Cartagena	
Municipio de Lorca	
Cámara de Comercio de Murcia	
Confederación regional de empresarios	
Fundación Isaac Peral	
Consejo Económico y Social de la Región de Murcia	

Arsenal de Cartagena	Centro de Supervisión y Analisis de Datos de la Armada
Base Aérea de Alcantirlla	Habilitación
Universidad Politecnica de Cartagena	Servicio de contratacion
Universidad de Murcia	Serv. Att. Usuario Contratación
Universidad Católica San Antonio de Murcia	Central de Compras-control Financiero
Fundación Séneca-Agencia de Ciencia y Tecnología de la Región de Murcia	
Fundación para la Formación e Investigación Sanitarias de la Región de Murcia (FFIS)	
Consortio para la Gestión de Residuos Sólidos de la Región de Murcia (COGERSOL)	
Fundación Integra	
Fundación Orquesta Sinfónica de la Región de Murcia (OSRM)	
Consortio de Extinción de Incendios y Salvamento de la CARM	
Consortio del Deposito Franco de Cartagena	
Centro de Coordinación de Emergencias 1-1-2 Región de Murcia	
Mancomunidad de canales del Taibilla	

Table 14. Stakeholders participating in the Phase I of PREPARE in Region of Murcia (detailed)