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APPENDIX TO THE GREEN BOOK ON SOCIO-SANITARY PUBLIC PROCUREMENT "EARLY DEMAND EXPERIENCES"

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1. INTRODUCTION

The Green Book appendix is a deliverable of the project: “MOAI LABS: Collective intelligence and socio-health technology laboratories to combat isolation and loneliness in older people”.

The main purpose of this document is to provide further information about the current Public Procurement of Innovation framework regarding challenges and opportunities to identify, asses them and propose possible solutions to improve the present Public Procurement of Innovation practice focused on the health and social care sector.

In order to prepare this deliverable, the starting point has been to study the results of the MOAI LABS experience. After understanding that MOAI LABS project aims to address its main challenges through a transnational open call, the following steps had been to spot potential current challenges in the process as well as potential current opportunities. Both sections follow the same structure for a clearer understanding of the situation and are mainly centred around challenges and opportunities regarding the health and social care sector.

Consecutively, the document aims to serve as a guide to help assess MOAI LABS project challenges through Public Procurement of Innovation, so it includes a section that explains the different steps that need to be followed to successfully implement a Public Procurement of Innovation practice. It also includes lessons learned and recommendations that could be followed.

As a wrap up, the final section of the Green Book appendix includes a summary of the main conclusions and recommendations developed thorough the current document.

Please be noticed that this document reflects the author´s and the consortium views on the topic. The following is based on the experience acquired through several Public Procurement of Innovation Procedures, projects, programs, etc.

2. RESULTS OF THE MOAI LABS EXPERIENCE.

The main purpose of this section is to provide a background for the Green Book appendix. Thus, a thorough analysis of the different documentation prepared in MOAI LABS project had been done. Particularly, the document "Activity 1.5: Selection of two innovative challenges to fight loneliness and isolation" has set the baseline for the content of this paragraph.

The goal of the MOAI LABS Project is to identify innovative solutions to combat unwanted loneliness in the older adults, identifying the reasons that lead to this situation and seeking tools to solve them.

To identify the typology of solutions, two groups of experts have been involved: the so-called "Early Demand Groups" (EDG), 3 groups of experts from different sectors related to unwanted loneliness who held sessions in the 3 participating countries (Portugal, Spain and France) and "Experts by Experience Group" (EEG), people who currently find or perceive themselves to be in a situation of unwanted loneliness and/or social isolation.

With these two groups, work was carried out to define the key characteristics of unwanted loneliness, what leads to a situation of loneliness and what are the determining factors of this situation.

For the Experts by Experience Groups, the study was carried out at 5 Living Labs located in Spain (2), Portugal (1) and France (2), with the participation of a minimum of 8 experts (older people who are experiencing loneliness or perceiving themselves as socially isolated) at each one. N= 40.

There have been two firsts co-creation sessions at each Living Lab, each lasting 2-3 hours, and all participants have been given an individual questionnaire.

A common methodology has been used to make the results more reliable and valid, although adjustments were made where necessary, depending on external variables (characteristics of the participants, cultural conditions, sociodemographic characteristics, etc.).

The field study is set out in 7 phases:

Phase 1. Introduction to the study, indicating the objectives pursued, the phases planned and the dynamics of the sessions.

Phase 2. Gathering qualitative information through the co-creation session outline, "Loneliness and the Older Adults: How They Define and Experience It", in order to investigate the variables, experience and how the older adults cope with loneliness, with the aim of agreeing on a response (if possible).

Phase 3. Presentation and delivery of the document entitled "The challenge of loneliness. Discussion paper for expert groups" to participants.

Phase 4. Gathering information through a standardised questionnaire ("Loneliness Questionnaire") that primarily deals with different types of loneliness, coping strategies, risk factors and protective variables, as well as a comprehensive analysis of the social net.

Phase 5. Forwarding to Social Services Management a brief description of the activity and the way both sessions were carried on.

Phase 6. Analysing the results using the SPSS v26 software.

Phase 7. Preparing the final field study report: A final report has also been drawn up with the results from the qualitative groups, emphasising both convergent and divergent notions in the perception of loneliness in the different Living Labs.

The results obtained from the 2 co-creation sessions were later validated by the experts in the Early Demand Group. The group was given the information organised as "Building Blocks", and was asked, first, to identify whether there were any relevant Building Blocks missing and whether the gathered information was relevant for the project or not.

Half of the members of the Early Demand Group identified important topics that were left out. Those topics were:

- The **unsuitable environment and/or housing of older people** that does not facilitate freedom of movement and could increase not only their frailty but also their loneliness and their dependency.
- Two respondents mentioned the importance of raising **social awareness** so that older people are not perceived as a problem or burden for their families and society in general, quoting an answer related with this topic: *"Aging should not be seen as a problem or a burden for the family or society."*
- Lastly, it was mentioned that work should be conducted around **age-friendly communities that would focus on the specific needs of older people that belong to ethnic minorities**, to the LGTBI+ community, that are disabled, and all those who may face even more difficulties than the rest and may also face for several reasons an increased feeling of loneliness.

The final assortment of building blocks is as follows:

- BB1: Early detection and personalised decision support.
- BB2: Emotional and Social support to fight loneliness.
- BB3: Psychological support to fight loneliness.
- BB4: Physical support to ensure active and healthy ageing.
- BB5: Usability, Accessibility, and Easiness to Use.

Results of the entire process were analysed and resulted in the following conclusions:

- **A tool that identifies older adults at risk of isolation and loneliness and that provides personalised recommendations to overcome the unwanted situation would be of interest to both the demand side and to the end-users**. In addition, both EEG and EDG point that the intervention strategies should mainly focus in providing in-person contact, even if enabled by digital technologies. The EDG also points that an existing shortcoming is the **lack of integrated care models** that involve all the target stakeholders (pharmaceutical, socio-health, family, community…) as well as the **lack of holistic solutions** that address all the dimensions that may affect the older adult situation (physical, mental, emotional…).

- **Emotional and social support is probably the most relevant need to be covered according to both EEG and EDG**. Both sides believe that new technologies have many benefits that could help in fighting emotional distress and loneliness, but they also agree that older people still prefer and **want physical contact.** Finally, the EDG pointed that sometimes **older people do not acknowledge emotional distress and they have difficulties in accepting and coping with frailty's condition and the feeling of loneliness**. This makes more difficult to identify and support them, which should be accounted by the developed solutions.

- The EDG pointed that it is many times difficult for older adults to accept as normal the negative feelings related with unwanted loneliness. This has proven to be accurate, as **some older adults remained sceptic in the co-creation sessions about emotional and psychological distress caused by the ageing process** and see asking for help as a sign of weakness. For those EEG members open to try psychological support, main uses would be to communicate with a therapist when they need to. Similarly, the EDG suggested technological tools to provide psychological assistance and try to avoid the feeling of isolation.

- EEG acknowledged that physical and cognitive decline is a concern for them, and they want to improve or **maintain their physical and cognitive health**, but it is not always easy for them to do so. They think digital technologies could help to achieve this aim, but still **would prefer to have combined approaches (digital and face-to-face).** Relevant solutions for them would **track their health status and propose personalised physical and cognitive activities** according to their needs in a blended format. The EDG made similar comments and added that a main **shortcoming of existing digital solutions in this area is that they are not motivating enough for older adults, and require a lot of effort, leading to poor adherence**. In this sense, new solutions should explore innovative approaches to motivation, adherence, and personalisation.

- **Most of the EEG already are aware of the benefits new technologies bring** for them, have general knowledge about their functioning and make limited use. Still, **a few are still reluctant to make use of new technologie**s. In any case, they acknowledged that **they lack digital skills in many cases and that sometimes they find technology complex, not usable and inaccessible**. They need **support** in this regard. The main motivations to use ICT tools are to **stay connected with their loved ones, and for leisure and hobbies**. Similarly, **the EDG commented these same problems and mentioned others**. First, the importance of granting **security** as older adults might be more vulnerable to online scams and fraud, and the **high costs of the devices and services**, many times unaffordable. These needs should be horizontally considered by all ICT solutions developed in this field.

Based on the building blocks and conclusions derived from the information obtained during the co-creation sessions and the validation by the Early Demand Groups, two main challenges were identified:

- CONNECT, or how to respond to unwanted loneliness from the point of view of people, seeking to create personal relationships between users in an innovative way.
- ACTIVATE, or how to improve the physical and mental health of users through personalised plans of activities designed according to the needs and preferences of older adults.

These two challenges are meant to be addressed by innovative technologies through a transnational open call (A2.3) launched in January 2022.

3. CHALLENGES OF PUBLIC PROCUREMENT OF INNOVATION PROJECTS IN SOCIAL CARE AND HEALTH PROJECTS.

Once it has been identified that a transnational open call would be the best solution for the MOAI LABS project challenges, this third section aims to recognise and tackle the potential limits that can be found for the adoption of Public Procurement of Innovation (PPI) in the health and social care sector.

To fully assess the different challenges and barriers that potentially could hinder the process, they have been classified in different areas as follows:

- Legal and policy.
- Social.
- Financial.
- Technical and competence.
- Challenges associated to the identification of unmet needs.
- Challenges associated with the implementation of Public Procurement of Innovation practices.

It is important to point out that some of the challenges acknowledged may be included in more than one category due to their complexity and to be able to fully understand their impact and implications in the Public Procurement of Innovation process.

3.1 LEGAL AND POLICY

- Public Procurement of Innovation processes may differ from more conventional public procurements. This means that compliance with the legal aspects of it is potentially a burdensome process due to bureaucracy inertia and a lack of knowledge regarding PPI.
- Public Procurement of Innovation processes are linked to thorough procurement Control and Audit processes that are generally perceived as punitive tools to prove guiltiness.
- It has been proved that to achieve success of the Public Procurement of Innovation process, a key factor is to guarantee real commitment to extend the project beyond the pilot stage from all the different actors in the project.
- Within Digital Health Solutions, social and health technologies imply even more market uncertainty as there is a need for further evaluation regarding the innovation solutions compared with other sectors. As a consequence of the lack of or inadequate and fragmented legal frameworks regulating them, it is harder for adequate solutions such as key tools for social care and health intervention at home settings and health and well-being mobile applications[1] to be validated and adopted in the market.
- The regulatory gap, i.e., the lack of effective regulation of Digital Health technologies, key to social and health interventions, poses a threat to users,

[1] The regulatory gap in digital health and alternative pathways to bridge it. Jeffrey David Iqbal, Nikola Biller-Andorno. Health Policy and Technology 11 (2022) 100663. www.elsevier.com/locate/hlpt

overwhelming them and hindering market adoption of specific, proven and safe solutions.

- Innovation usually goes in hand with uncertainty and risk. Therefore, there is a need to create a formal and standardised system to ensure that Public Procurement of Innovative products and services is transparent and accountable. This system should include clear guidelines and procedures for the selection, evaluation, and award of contracts.

- It has been detected a need to coordinated policy and advocacy efforts to increase access and affordability of broadband/internet services and Digital Health Technologies for all.

- A need for a clearer digital health technology evaluation and reimbursement frameworks to ensure the appropriate criteria in performance evaluation is being applied.

3.2 Social

- As it has been pointed out before, the Political Environment does not fully favour Public Procurement of Innovation as, often, there are no clear targets in all EU countries.

- Lack of understanding of the PPI process among private companies hinders the adoption of these kind of processes.

- The bureaucracy around Public Procurement of Innovation processes can be overwhelming to SMEs that are not used to this type of processes.

- Due to the uncertainty and risk of innovation projects, there is a need to support the development of spaces and tools in order to help developing alliances and partnerships between synergistic companies.

- There is a need to promote models to access the developed technologies for people with limited resources or limited digital knowledge. The Social and Health Technologies industry duty should include protecting and promoting wellness for all, it has a responsibility to ensure social and health data, tools, and technologies are designed and implemented inclusively, and accessible to all members of the population.

- Linked to the previous point, elder and disability care professionals should play a key role in the definition of the Social and health technology challenges and be involved early on in the design and adoption of the technologies, protocols and solutions that will be developed.

- A human-centric product development should be taken into account to ensure that the health and social care tech tools that are being brought to market address the unmet needs of the users.

- Procurers need to promote public awareness and education on the Public Procurement of Innovation process and the benefits of investing in innovative products and services. This could include providing information on the process, as well as training sessions and seminars for stakeholders.

- It has been identified that procurers can encourage feedback and evaluation from stakeholders to ensure that the public procurement process is effective and efficient. This could include setting up feedback mechanisms for stakeholders to provide input and conducting regular evaluations of the process.

- One of procurers' biggest challenges is to foster collaboration between the public and private sectors to ensure that the Public Procurement of Innovation process is efficient and effective. This could include establishing public-private partnerships, leveraging technology, and creating a shared vision of success.

3.3 FINANCIAL

- Research and Development projects do not focus on commercialisation options. This implies there is a high risk of commercialisation failure in projects that develop close-to-market solutions or not even aiming to being brought to market such solutions.
- Regarding Digital Health as fundamental tools to foster social care and health interventions, there is still limited large-scale evidence of the cost-effectiveness of these tools and services. The high start-up costs involved in setting up Digital Health systems and the financial costs are also a real concern and a perceived barrier to its implementation.
- The geopolitical context is complex and uncertain. Although the EC has activated a massive package of funds to combat the crisis (COVID-19, Ukraine´s war, energy-prices drawbacks), it is unclear how this will affect investment in R&D&I and, thus, the administration takes a step back in the planning and allocation of resources to Public Procurement of Innovation projects.
- There is a need for finance or fund continued investment in hands-on training to improve technology literacy in patients, older adults, social care and health professionals and providers.

3.4 TECHNICAL AND COMPETENCE

- Interoperability between different equipment and between different social care and health care systems and services providers continue to be a major challenge.
- Big data could also be a major challenge due to the usage of highly sensitive/private information.
- The fast-changing nature of technology results in technologies becoming obsolete from one year to another.
- A common demand within the social care and health community is the need to develop validated solutions.

- The privacy and protection of the user data is a security concern for many social and health providers.
- Lack of transparency regarding the utilisation of data collected by Digital Health applications. There is a general concern about the privacy and confidential treatment of information.

3.5 Challenges associated to the identification of unmet needs.

- The failure to identify unmet needs until they become urgent problems is incompatible with Public Procurement of Innovation practices. Public Procurement of Innovation projects are particularly burdensome and difficult to implement and may involve larger delays than those in procurement of standard solutions.
- Urgent-base-working schemes should be clearly avoided in Public Procurement of Innovation. There is a need for long-term investment planning where the importance of implementing a real need assessment as well as the ability to describe the need clearly is essential for the whole success of the Public Procurement of Innovation process.
- Unmet needs identification cannot be tackled in non-collaborative environments. There is also a need for more effective engagement between procurers, suppliers, academia, national innovation agencies, users, and other stakeholders. There is also a need to establish a connection between NGOs, etc. and supplier ecosystem from the beginning taking advantage of different design and problem-solving methodologies.

3.6 Challenges associated with the implementation of Public Procurement of Innovation practices

- The attitude of some service providers and funders can still inhibit Public Procurement of Innovation adoption and implementation. Fear of change, user resistance and risk aversion are key factors to assess.

- The Public sector is known to procure the safest options which means that innovative products or services that have not yet been tested in an operative environment are less likely to be accepted by the contracting authority than products with proven and documented reliability resulting in lack of innovation sometimes.
- The need to purchase day-to-day goods and services prevails which limits the use of new procurement tools, such as Public Procurement of Innovation. Consequently, contracting authorities prefer to stick to non-innovative procurement procedures.
- As it has been mentioned earlier, Public Procurement of Innovation projects are particularly burdensome and difficult to implement. They may involve larger delays than those in procurement of standard solutions. As a result, they require an extra effort and a proper commitment from Public Procurers, but the potential benefits are rewarding and can significantly impact on the social care and health care services.
- Public bodies and procurers are difficult to mobilize and lead due to organizational complexities and lack of professionals trained in Public Procurement of Innovation.
- For all the above, good project management is of special relevance and a critical success factor within PUBLIC PROCUREMENT OF INNOVATION.

4. OPPORTUNITIES DERIVING FROM THE IMPLEMENTATION OF PUBLIC PROCUREMENT OF INNOVATION PROJECTS IN SOCIAL CARE AND HEALTH PROJECTS.

Following the same previous structure for Section 3, this one, Section 4, proposes several actions/measures that could facilitate wider adoption of the Public Procurement of Innovation instrument.

To fully assess the different opportunities that potentially could improve the process, they have been classified in different areas as follows:

- Legal and policy.
- Social.
- Financial.
- Technical and competence.
- Opportunities associated to the identification of the unmet needs.
- Opportunities associated with the implementation of Public Procurement of Innovation practices.

4.1 LEGAL AND POLICY

- Both national/regional and EU legal frameworks need to be simplified and made easier to work with. There is an opportunity to challenge the current framework by developing new solutions and protocols to make the Public Procurement of Innovation process easier for both Public Procurers and Companies thus improving innovation access.
- Currently, there is a focus in innovation meaning there is an opportunity to include Public Procurement of Innovation as a key part of the Political Agendas.
- Collaboration has proved to be key regarding innovation and early adopters of Public Procurement of Innovation processes could help define and establish new action plans and long-term policy goals.
- Following the previous point, procurers approaching Public Procurement of Innovation as innovation platforms could help to increase interaction within the ecosystem.
- Early demand maps should continue to be fostered from procurers in order to gather and provide information on real needs from real users across the different national and European regions. If those needs are real and confirmed, this is a unique opportunity for the participating suppliers. Development of a Joint

Statement of Unmet Needs should start at the level of common understanding of the subject of the Public Procurement of Innovation process.

- Currently, there is a favourable opportunity to construct at EU and at National level, indicators that capture the long-term impact of procurement of R&D. Defining proper measures and indicators will allow to prove innovation and efficiency of the public sector on market conditions such as competition and economic growth.

4.2 Social

- Promoting cross-organisational and cross-disciplinary cooperation within the whole public sector is an opportunity to guarantee full access to the organisation know-how promoting innovation and growth.
- Improving visibility and dissemination of information regarding the Public Procurement of Innovation process will increase innovation impact. To achieve this, technical experts and end-users could be involved from the beginning of the procurement process.
- There is a chance to demonstrate to policy makers and the general public that Public Procurement of Innovation is better than traditional procurement in favouring innovation.
- Technology access and digital literacy have been solidified a social determinants of health. We are still on the early stage of innovative healthcare projects, so there is an opportunity to improve technology access and digital literacy for innovation healthcare projects to succeed.

4.3 Financial

- When correctly executed, Public Procurement of Innovation processes are an opportunity for R&D risk to be shared between social care and health Procurers and Providers, easing, and promoting private investment.

- Innovation projects can also benefit from a small budget executed at different phases and for specific purposes. This will minimise risks and will ease pilot projects setup and success within the Public Procurement of Innovation process.
- Establish 'Innovation vouchers' for organisations investing for the first time in innovative solutions. For example, this could be an opportunity to rethink the way innovation pilot projects are fund. Procurers instead of money can aid running successful innovation pilot programs through providing human and material resources, infrastructure, etc.

4.4 TECHNICAL AND COMPETENCE

- Through the Public Procurement of Innovation process there is a chance to continue proving case examples and demonstrators to support innovation and increase its visibility, as well as providing evidence of success for Public Procurement of Innovation across Europe.
- The trend towards more standardization and interoperability in health and social care, provides a clear objective for programmes developed within national frameworks.
- A centralized set of technical capabilities and adequate support to build, operate and maintain a common big data infrastructure according to the needs of the interested stakeholders would generate considerable efficiencies.
- Develop a training program for public contracting authorities. Train staff on Public Procurement of Innovation procedures.
- Innovation in the health and social sector should create space to review the fact that SMEs cannot easily qualify as a technical provider to big procurers, such as regional social care and health providers, because usually traditional procurement tenders look first at company size, references, financial viability and only after that at technical capabilities.

- Procurers should support innovative solutions through public procurement processes. This could involve introducing incentives for suppliers to develop innovative products and services, as well as encouraging the use of open and competitive procurement processes for the purchase of such innovations.

4.5 Opportunities associated to the identification of the unmet needs

- There is an opportunity to encourage the market by developing early demand maps. This also support the allocation of funding in the long-term and define the Procurement Strategy of the social care and health organisations.
- Promote institutional and possibly financial support for 'match-making' between scientific institutions and companies.
- Capacitation in the identification of unmet needs practices oriented to Public Procurement of Innovation projects, with staff trained and motivated. This should lead to clear policies and Public Procurement of Innovation strategies in place.
- Emphasize Public Procurement of Innovation joint actions and collaboration schemes. To facilitate networking of the key stakeholders involved in the health and social care services delivery, to reduce fragmentation of demand and enable the demand pooling, for example: common spaces for reflection, "health and social-care platforms". This can reduce the fragmentation of the demand and leverage common knowledge on the topic.

4.6 Opportunities associated with the implementation of Public Procurement of Innovation practices

- Social care and health organisations in Member States of the European Union, could contribute to the development of the Public Procurement of Innovation practice by providing relevant content: additional tools, data, and methodologies/guidelines for specific policy or geographical areas, thus creating a community of users that will maximise its reuse. Develop supportive guidelines,

standards and accreditation schemes for the digital health technologies, tools and services under development. Widen the use of EU standards to scale the ideas up.

- Procurers must define and include proper data protection as standard in all procurement processes. Social care and health entities must adopt written privacy policies and procedures that define how they intend to abide by the highly complex regulation and protect individually identifiable social care and health information.
- Procurers have an opportunity to adopt written privacy policies and procedures that define how they intend to abide by the highly complex regulation and protect individually identifiable information.
- Nowadays the opportunity to innovate requires technical skills and competences from the Procurers and supplier stakeholder groups. Some of the key points where there is opportunity for growth are:
    - Procurers need to improve their technical skills to take on big projects.
    - Procurers need practical know-how in supply chain management.
    - Procurers need a better understanding of Public Procurement of Innovation mechanisms.
    - Suppliers need to increase their competences in Public Procurement of Innovation implementation.
- Promoting the creation of Innovation ecosystems, fostering local innovation and growth.

5. PUBLIC PROCUREMENT OF INNOVATION ROADMAP, LESSONS LEARNED AND RECOMMENDATIONS.

The main goal of the list of challenges and opportunities of PUBLIC PROCUREMENT OF INNOVATION mentioned before, is to identify the key points to be taken into account

during the design, implementation and eventual development of a PUBLIC PROCUREMENT OF INNOVATION strategy and its associated projects.

This section aims to describe the steps and stages necessary for the successful completion of a PUBLIC PROCUREMENT OF INNOVATION cycle, from the conceptualisation and configuration of the project idea to the launching of the PUBLIC PROCUREMENT OF INNOVATION tender, the awarding of the contract(s), its implementation and closure, as well as providing experience-based insights, lessons learned and recommendations, aiming to be as educational and practical as possible.

Along with the description of each of the steps of the Public Procurement of Innovation cycle, this document aims to provide both, lessons learned from previous Public Procurement of Innovation processes and a series of recommendations on how to streamline the entire cycle, reducing the workload derived from the process and making it easier to comprehend and implement.

The following roadmap is based on the Forward Commitment Procurement methodology, as described in *"Gaynor Whyles, Hendrik van Meerveld & Joram Nauta (2015): Forward Commitment Procurement: a practical methodology that helps to manage risk in procuring innovative goods and services, Innovation: The European Journal of Social Science Research, DOI: 10.1080/13511610.2015.1024638".*

This methodology aims to reduce the technological risk and uncertainty of Public Procurement of Innovation through the application of preparatory information gathering procedures, such as Open Market Consultation or the creation of Technology Watch reports.

Forward Commitment Procurement (FCP) Methodology is divided in three different steps:

1. **Identification**: Identify and prioritize unmet needs and opportunities and define an outcome-based requirement.
2. **Market Engagement**: Market analysis to find out if it can provide a technological response to the Public Procurement of Innovation process, through an Open Market Consultation (OMC), Technology Watch Reports and feedback from the supply chain.
3. **Procurement**: Definition of a pro-Public Procurement of Innovation strategy based on the feedback received form the supply chain and other stakeholders.

However, the FCP methodology only goes as far as the contract award of the Public Procurement of Innovation process (sections 5.1, 5.2, 5.3, 5.4 and 5.5), so a method must be devised to continue the procedure, supporting the full PPI cycle. Such method is defined in the following sections (5.6 to 5.13).

Considering the information in sections 3 and 4 of the current document, the main goals of the steps defined in the following sections are:

- To foresee and **identify the usual risks and challenges** derived from this type of projects.
- **Encourage the creation of synergies and local innovation ecosystems**, promoting open innovation.
- **Bring PUBLIC PROCUREMENT OF INNOVATION closer to the public sector**, making it a tool that administrations are comfortable with.
- **Facilitate the landing of developed products and technologies on the market**, acting as use cases for them.

5.1 PREPARATORY TASKS PREVIOUS TO THE IDENTIFICATION OF THE UNMET NEEDS.

Lessons learned and recommendations

It is advisable to keep involved, whenever possible, the staff recognised as key to the process of identifying needs, staff responsible for recruitment, technical or research staff, etc. Providing them with the means and spaces to communicate needs and challenges to the relevant staff, so that they can subsequently be passed on to the decision-makers.

Keeping a team of professionals trained and up to date with the latest developments in the PUBLIC PROCUREMENT OF INNOVATION procedure is key to the correct implementation of such procedures.

This stage comprises the schematic or concept design of the project starting from the problem definition and the evaluation of the challenge or need to be met. The key is to establish a fluent dialogue between the different areas of the public administration; decision-makers, operational staff and future project managers, seeking effective coordination for the definition of the needs and functional requirements of the future project.

It is part of the **Identification** step of the FCP methodology.

After the definition and selection of the unmet need(s), it is advisable, as described in the FCP methodology, to start testing the market and assessing the capabilities of the supply chain to provide an answer for the chosen need. During the first stages of the **Market Engagement Step**, procurers should try to identify allies (companies, patent officers, IP experts…) who may help with the Technology Watch process.

5.2 OPEN MARKET CONSULTATION

Lessons learned and recommendations

Correct execution of the Open Market Consultation (OMC) process helps saving time in the subsequent procedure, facilitating the drafting of contract specifications both at a technical level and in terms of award criteria, IPR management, etc.

During the OMC, it is essential to respect their guiding principles, ensure equal treatment, access to information, publicity, competition, etc. to ensure there are no delays due to legal actions taken by companies.

It is important to give companies the opportunity to find partners, helping the adoption of open innovation and co-creation strategies, so it is recommended to provide them with networking spaces where they can identify potential allies and synergies with other companies.

It is recommended to train companies in PPI procedures, reducing the doubts that may arise later and facilitating their participation in the procedures.

The Open Market Consultation (OMC) stage comprises the analysis of the availability, scope, novelty, technical and economic feasibility, and functional performance of possible alternative solutions to the challenge, as illustrated in the following figure.

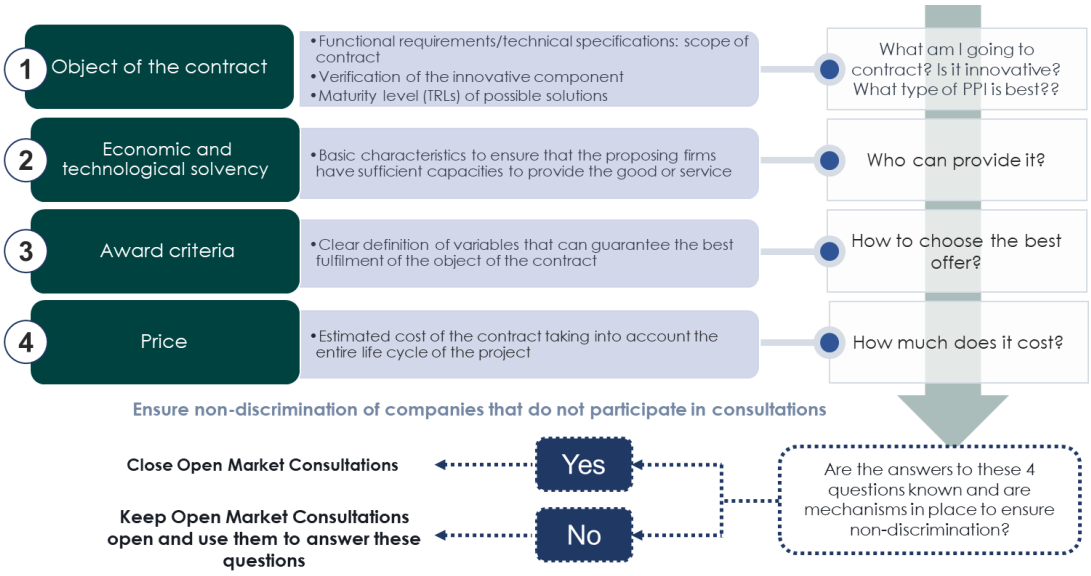

Figure 1: OMC Procedure and key questions to answer. Source: SILO Company

In accordance with best practices in the Public Procurement of Innovation processes, it is critical to design a regulated OMC procedure that is appropriate for each procurement case. Such OMC is a key part of the **Market Engagement Step,** where companies, universities and other stakeholders are given a space and tools to give feedback to the procurers. Procurers then should use that information to properly define the specific characteristics and requirements of the Public Procurement of Innovation project design.

The following principles must be considered, so that the consultation (and subsequent steps in the procedure) does not infringe on competition:

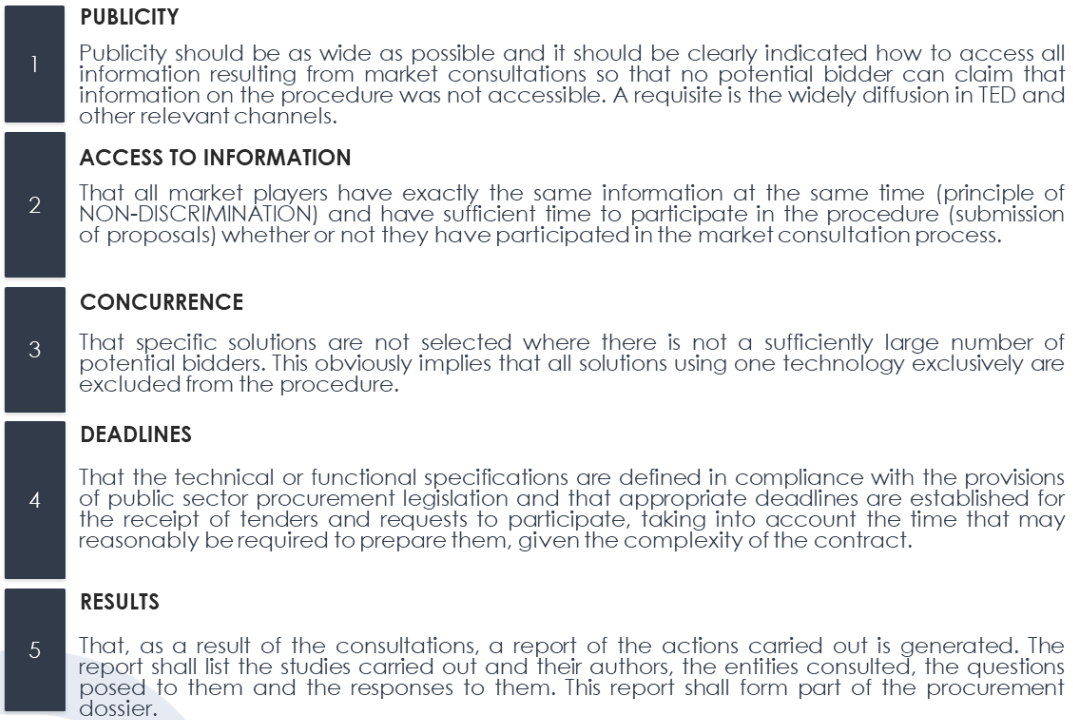

Figure 2: Principles that must govern the Open Market Consultation in order not to infringe on competition. Source: SILO Company

For the configuration of the OMC, the following activities should be deployed:

- Definition of the background that motivates management to launch an OMC (context, strategy, identified need, etc.).
- Definition and specification of the challenge chosen for each of the OMC procedures, including the study of the state of the art of the technology, the unmet needs in the market, the strategic objectives pursued, specific objectives, impacts and expected results.
- Definition of the key characteristics of the OMC procedure: participation model, conflicts of interest, application of the principles of transparency, equal treatment and non-discrimination, operation and development of the consultation, timeframe and management of the consultation, expected results, publicity, data protection, confidentiality, etc.

- Definition of Frequently Asked Question (FAQ) documents, to be launched with the tender announcement, including common questions identified in other OMC processes (What is the consultation looking for, does the consultation have selection criteria, what are the deadlines, etc.).

- Preparation of the participation and query resolution forms for the OMC processes.

- Preparation of the tender launch announcement, based on the basic documentation for the OMC that the contracting body must publish on the Public Sector Procurement Platform and other channels provided for this purpose.

Once the characteristics have been defined and the documentation necessary to carry out the consultation has been prepared, it is recommended to organise an OMC Kick-off meeting.

A key factor for the success of an OMC, is the correct visibility, dissemination and promotion of the activities developed within the framework of such OMC. To this end, it is advisable to rely on associations, clusters and other dynamizing agents both at national level (EEN, Public Procurement of Innovation Forum, Public Procurement of Innovation Platform, Public Procurement of Innovation Competence Centres, etc.) that will act as a loudspeaker for their economic operators, ensuring concurrence in the OMCs, as well as at regional level. It is recommended too to design a map of actors, companies, technologies, and research centres that can provide innovative solutions to the challenge.

For managing the information received in the OMC, it is recommended to elaborate a Heat Map that helps identifying, through an intuitive colour code, the extent to which the proposed solutions meet the requirements of the challenge. This Heat Map will define the criteria for the analysis of the proposals received, identify the information gaps in the proposals and thus assess the advisability of convening bilateral interviews

with a certain number of companies (proponents) to collect additional information.

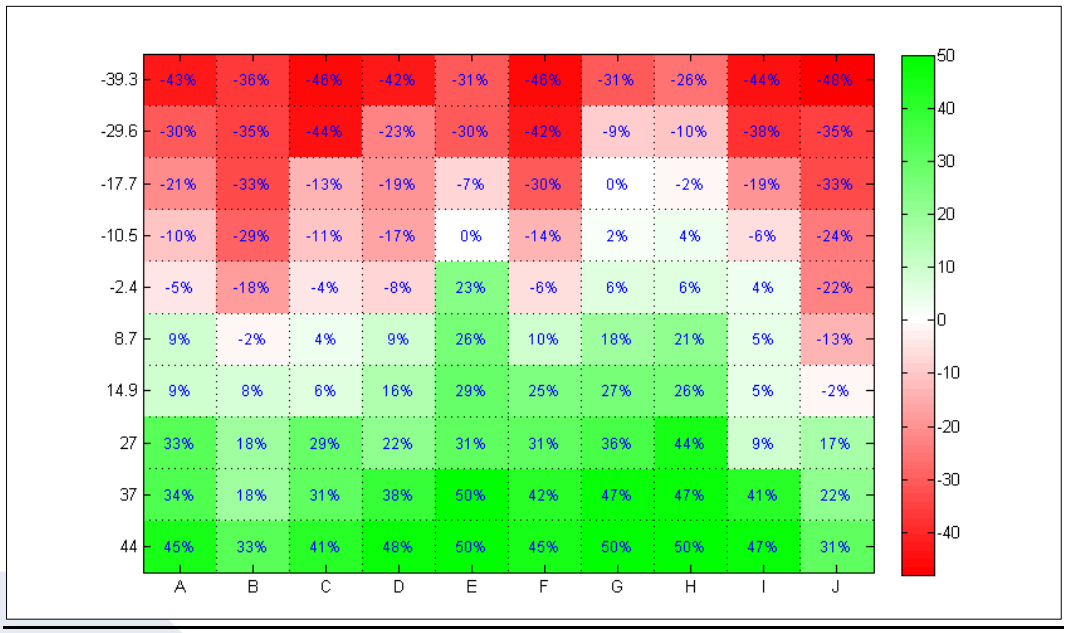

Figure 3: Heat Map. Source: SILO Company.

Once the Heat Map has been drawn up, the next step will be to make a report of conclusions prior to the closing of the OMC, which should be made available to the general public. This report shall contain, at least, the following information:

1. Description of the challenge.

2. OMC Procedure.

3. Results of the OMC.

4. Technical conclusions.

5. Administrative conclusions.

6. Early Demand Map: The Early Demand Map is a document that contains a list of those needs in which the Public Procurement of Innovation modality would provide a way to satisfy them, since their procurement through conventional contracting

procedures does not fit. As this is an instrument that allows the market to be informed of the needs of the Administration, it provides valuable information to companies to guide their R&D&I initiatives towards possible tenders.

ID.	CONCEPTO	BREVE DESCRICIÓN	PREVISIÓN DE PROCEDEMENTO A SEGUIR	DISTRIBUCIÓN ORZAMENTARIA PROVISIONAL
1	Xestor de conxunto de datos xeorreferenciados obtidos por UAVs	Desenvolvemento de plataforma que permita a integración de todos os datos xeorreferenciados capturados a partir de sensores transportados por UAVs co fin de ser utilizados nas distintas aplicacións de produción de información xeográfica.	Compra Pública de Tecnoloxía Innovadora	350.000,00 €
2	Adquisición, mantemento e automatización de bases topográficas e cartográficas.	Deseño dun sistema que permita a elaboración e edición de bases topográficas a partir dos datos capturados polos sensores aerotransportados en UAVs e noutros vehículos, tanto aéreos, naúticos e terrestres.	Compra Pública de Tecnoloxía Innovadora	1.500.000,00 €
3	Seguimento das dinámicas de ocupación do solo e axuda á planificación territorial.	Deseño e implementación dun sistema que dea soporte á toma de decisións en materia de: diagnóstico territorial, planificación rexional e planificación urbana.	Compra Pública de Tecnoloxía Innovadora/ Asociación para a Innovación	1.300.000,00 €
4	Aplicativos de Información xeográfica para Xestión e control forestal.	Desenvolvemento de aplicativos para a a xeración de información xeorreferenciada sobre a masa forestal (tipoloxía, crecemento, evolución, etc.), a situación fitosanitaria dos bosques e o uso e características do solo forestal.	Compra Pública de Tecnoloxía Innovadora/ Asociación para a Innovación	700.000,00 €
5	Equipo de seguridade e control a bordo	Dotar ás embarcacións da frota pesqueira galega dun sistema integral de seguridade a bordo, salvamento marítimo e control da actividade pesqueira.	Compra Pública de Tecnoloxía Innovadora	1.500.000,00 €
6	Mostreador de medio mariño e augas interiores	Automatización de mostraxes oceanográficas mediante UAVs. Sensorización de calidade de augas: marítimas e continentais.	Compra Pública de Tecnoloxía Innovadora	2.500.000,00 €
7	Xestión e seguridade de tráfico para espazos aéreos compartidos	Desenvolvemento de equipamentos e sistemas, que melloren sensiblemente a seguridade da súa pilotaxe e control, orientados á súa instalación nos vehículos aéreos non tripulados co obxectivo de dispoñer dun sistema experimental que permita probar cun nivel de seguridade suficiente operacións conxuntas de varias aeronaves.	Compra Pública Precomercial / Asociación para a Innovación	6.000.000,00 €
	TOTAL LICITACIÓNS:			**13.850.000,00 €**

Based on the results obtained in the Open Market Consultation, and following the guidelines defined in section 5.3, it will be key to define the type of Public Procurement of Innovation and choose the optimal procurement procedure: Pre-Commercial Public Procurement, Procurement of Technology for Innovation, or Innovation Partnership, considering the procurement procedure that best suits the innovative solution to be procured and taking into account the Technology Readiness Level identified.

Finally, it is a good practice to schedule a date for the presentation of the results and to facilitate networking. As mentioned earlier, this will foster collaboration which has been identified as key to promote the creation of an open innovation ecosystem, fostering the creation of alliances and easing the participation of SMEs in the Public Procurement of Innovation processes among economic operators, to assess their possible joint presentation to the future tender, in case of having complementary experiences.

5.3 PUBLIC PROCUREMENT OF INNOVATION PROJECT DESIGN:

Lessons learned and recommendations

It is recommended to develop alliances with companies, patent offices, universities or entities specialised in technology watch that support the technical evaluation processes prior to the definition of the Public Procurement of Innovation projects.

Likewise, it is essential to count on the legal services of the administration from the outset, working with standard specifications and standardised documents and procedures that facilitate the transition from regular procurement to Public Procurement Innovation, making it a key part of the in-house procurement culture.

The correct choice of the Public Procurement of Innovation process is a fundamental step for the success of the project.

In the case of Pre-Commercial Public Procurement projects, it is recommended that IPR management models be explicitly defined and that the risks arising from technology development be shared with the companies.

For Procurement of Technology for Innovation projects, it is key to preliminarily define the aspects related to intellectual property rights and the subsequent deployment and commercialisation of the developed solutions.

Once the starting and target Technology readiness levels (TRL) have been established, advice can be given on the most suitable Public Procurement of Innovation procedure alternative, evaluating the pros and cons of each option, and then a detailed analysis can be carried out.

This stage comprises the design and implementation of a Public Procurement of Innovation project, taking the results of the OMC as a starting point.

Diagnosis of the Public Procurement of Innovation process:

The legal and technical advantages and disadvantages of the different procurement procedures (Pre-Commercial Public Procurement (PCP), Procurement of Technology for Innovation (PPI), or Innovation Partnership (PI)) with which the Public Procurement of Innovation project under study could be implemented should be analysed. To do so, a

rigorous analysis of all the information resulting from the OMC should be performed, considering the following key aspects:

- Establishment of the baseline and the target scenario regarding the identified challenge.
- Assessment of the baseline and target TRLs, based on the results of the OMC.
- Assessment of the need to request additional technology watch documents to deepen the analysis of the state of the art of the technology.
- Assessment of the need to consult internal or external experts on the technology.

Type	Advantages	Disadvantages
PCP	• Procedural flexibility • Favors the management of IPRs • Good control of R&D uncertainty	• Generates legal uncertainty • Necessarily pre-commercial results
PPI	• Legal certainty • Commercial products • Standard procedures	• Constriction in terms of award procedures
PI	• A single act to award R&D and supply. • Good control of R&D uncertainty	• Complexity in developing the specifications (especially in terms of performance for transition to supply)

Table 1: Analysis - summary of advantages and disadvantages of the different Public Procurement of Innovation procedures. Source: SILO Company.

- Assess the need to consult the companies again to clarify any point or issue that is considered key (by reopening the consultations if they had been closed).

- Evaluate the cost-benefit ratio of each project and the economic impact of having a new innovative solution in terms of efficiency, effectiveness and availability.

5.4 IDENTIFICATION OF FUNDING OPPORTUNITIES, SOURCES AND MECHANISMS:

Lessons learned and recommendations

Participation in European funding processes is a complex process, and it is therefore recommended that they be addressed within a reasonable period of time prior to the deadline for receipt of applications.

It is also recommended to try to keep information on these calls for proposals up to date, through funding observatories, to best identify funding opportunities that may be relevant to the procurers.

In this section a review of the information related to the main sources of funding available at European level is included. We understand this phase as part of the evaluation and selection process.

5.4.1 NEXT GENERATION EU:

Temporary recovery instrument that will help repair the immediate economic and social damage caused by the coronavirus pandemic:

- Recovery and Resilience Facility: a central element of Next Generation EU, with loans and grants available to support reforms and investments undertaken by EU countries. The aim is to mitigate the economic and social impact of the coronavirus pandemic and to make European economies and societies more sustainable and resilient and better prepared for the challenges and opportunities of the green and digital transitions.

- Recovery Assistance for Europe's Cohesion and Territories (REACT-EU): This is a new initiative that continues and extends the crisis response and repair measures implemented through the Coronavirus Response Investment Initiative and the

Coronavirus Response Investment Initiative Plus. It will contribute to a green, digital and resilient recovery of the economy.

5.4.2 ERDF: European Regional Development Fund.

Cohesion policy addresses a variety of development needs in all EU regions and cities. The ESI Funds include: the European Regional Development Fund (ERDF) and the Cohesion Fund (CF) for the development and structural adjustment of regional economies, economic change, increased competitiveness and territorial cooperation; the European Social Fund Plus (ESF+) for employment, social inclusion and education; the European Agricultural Fund for Rural Development (EAFRD) for the competitiveness of agriculture, sustainable management of natural resources and territorial development of rural communities, the European Maritime, Fisheries and Aquaculture Fund (EMFF) for the sustainability of fisheries and coastal communities, and the Just Transition Fund (FTJ) which aims to support territories facing major socio-economic challenges arising from the process of transition to climate neutrality.

The European Regional Development Fund (ERDF) provides funding to public and private bodies in all EU regions to reduce economic, social and territorial disparities. The Fund supports investments through specific national or regional programmes.

In 2021-2027, the Fund will enable investment to make Europe and its regions:

- Become more competitive and smarter, through innovation and support for small and medium-sized enterprises (SMEs), as well as digitisation and digital connectivity.
- Greener, low-carbon and resilient.
- More connected by improving mobility.
- More social, supporting effective and inclusive employment, education, skills, social inclusion and equal access to healthcare, as well as enhancing the role of culture and sustainable tourism.

- Be closer to citizens, supporting local development and sustainable urban development across the EU.

5.4.3 HORIZON EUROPE:

Horizon Europe is the EU's ambitious Framework Programme for Research and Innovation (2021-2027) to strengthen the EU's scientific and technological foundations and the European Research Area (ERA, to boost Europe's innovation capacity, competitiveness and jobs and to deliver on citizens' priorities and to sustain our values and socio-economic model.

Horizon Europe has a budget of 95.5 billion Euros, making it the largest transnational research and innovation programme in the world.

The programme is organised around 3 pillars and 6 clusters, which aim to cover the strategic points of action defined by the Commission.

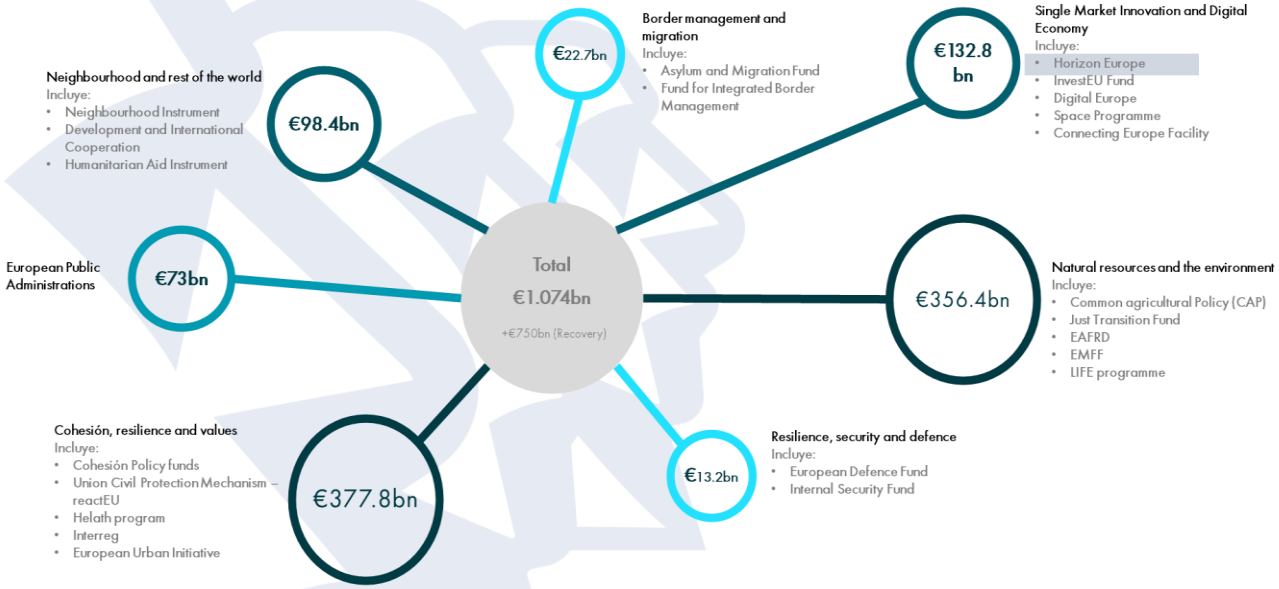

Figure 5: Horizon Europe, structure and budget. Source: SILO Company

5.4.4 INTERREG.

It promotes transnational cooperation to address issues common to the regions of the territory, such as low investment in research and development, low competitiveness of

small and medium-sized enterprises and exposure to climate change and environmental risks.

For the period 2021-2027 this programme has been endowed with nearly 10,000 million Euros, marking the next step of Interreg towards a reinforced model of cooperation between EU member countries and their allies through Interreg IPA, Interreg NEXT and the integration of a line specifically dedicated to cooperation with the countries of the most remote regions of Europe.

Interreg is organised into 4 separate strands, 3 which may be of relevance to MOAI LABS:

1. Interreg strand A: Cross Border Cooperation: It seeks to promote collaboration between European countries and with the closest neighbours.
2. Interreg Strand B: Transnational Cooperation: This includes programmes aimed at collaboration between specific regions that share geographical areas.
3. Interreg Strand C: Interregional Cooperation: Promotes the improvement in the efficiency of cohesion policy through the exchange of experiences, innovative approaches and capacity building between regions.

5.5. THE PUBLIC PROCUREMENT OF INNOVATION PROCESS:

Lessons learned and recommendations

In order to streamline procedures, it is highly recommended to use standardised model tender documents and standard models for award criteria and evaluation of tenders with which the legal services are comfortable, making the adoption of PUBLIC PROCUREMENT OF INNOVATION procedures easier to adopt.

It is important to keep key legal positions involved in order to speed up the process of drafting tender documents as much as possible.

Working with standardised bidding documents allows to speed up the drafting of bidding documents, streamlining and making the procurement process far easier and quicker.

In Public Procurement of Innovation, the high uncertainty makes the unforeseen modification of contracts a key element to consider during the project.

The objective of this phase will be the **drafting and processing of the documents and specifications**, as well as the launching of the Public Procurement of Innovation tender. It includes, **from the beginning of the procurement file to its approval by the contracting entity**. It usually involves the following units and profiles:

- The promoting units.
- Those responsible for the contracting department.
- The Legal Intervention Department.
- Legal Services.
- The contracting body.

For the development of the bidding process, it is recommended to deploy the following methodology:

Elaborate a Risk Plan.

For a thorough knowledge of this process, as a starting point, a good practice will be the elaboration of a Risk Plan. The purpose of the risk plan will be to provide greater anticipation and improve the capacity to respond to different risks that may occur in the bidding process, depending on their probability and impact.

The following are some of the risks that occur frequently in the formalization of a Public Procurement of Innovation project, and which should potentially be taken into account. It will be advisable to implement an action plan to avoid or mitigate them.

Risk Description	**Likelihood**	**Contingency measure**
Risk of moving away from Annex I in the Consultation process and in the bidding process		Audit - review of documents.
Risk of low participation in the processes		Rely on dynamic entities such as scientific associations.
Risk of low involvement of personnel dedicated to the project		Initial training and ongoing support.
Possible Public Procurement of Innovation tender where only a single entity can compete, with risk of incurring in State Aid		Increase concurrence, dissemination of the OMC.
Risk of low concreteness of technical specifications		Deepen Open Market Consultation.

Risk of low specificity or inadequate solvency or award criteria.		Deepen Open Market Consultation.
Risk of low contractor control		Define in detail the control milestones of the Public Procurement of Innovation project and the communication mechanisms. Allow contract modifications and manage them.
Low level of R&D&I		Technology Watch Report. Define in detail the control milestones in relation to R&D&I work.
Internal communication risk		Establish appropriate channels validated by each person involved in the project.
Risk of rejection by legal counsel of Public Procurement of Innovation processes		Public Procurement of Innovation training and ongoing support.

Table 2: Example - risks that could eventually occur in the development of a PPI bidding process. Source: SILO Company.

Approval of the procurement file and expenditure

At the start of the process, the Contracting Authority, under the supervision of the legal services, which will issue a report to this effect, will be responsible for drawing up a contract report and a report on the insufficiency of means in the case of service contracts. Once the need has been determined and the type of contract has been specified (works, concession of works and services, concession of services or supplies), as well as its amount, which will determine whether the procedure is subject to harmonized regulation, the corresponding certificate of the existence of credit to undertake it will be issued, initiating the file with the so-called "Agreement of initiation

by the contracting body". After defining the type of contract and the amount, the most appropriate type of procedure is studied (open, simplified open, etc.). Finally, the contracting authority approves the contracting file and the expenditure. Subsequently, it will tender and administer the contracting procedure.

Preparation of the briefing of the Public Procurement of Innovation project specifications:

After defining the type of procedure to be followed, the administrative clauses and technical specifications are drafted. It is advisable to work with model specifications or "standard specifications", based on Public Procurement of Innovation projects tendered by other administrations.

A good practice is to prepare a briefing of the specifications for each Public Procurement of Innovation project. The briefing is a short document that includes the fundamental aspects that will characterize the future specifications gathered during the internal consultations and the OMC. The briefing includes the following actions:

- Definition of the governance model that will govern the drafting of the specifications and the approach of the working group to be involved within the process.
- Establishment of the specific work plan for the drafting of the specifications and other documentation that will make up the contracting dossier, establishing milestones and key dates.
- Drafting of the contract objects, in accordance with the results obtained from the OMCs carried out, if applicable, proposal of the awarding procedure and budget proposal (estimated value of the contract).

- Identification, in collaboration with the working group, of the technical requirements and functional specifications to be included in the specifications that will regulate the bidding process and aligned with the object of the contract.

- Final choice of the type of Public Procurement of Innovation procedure to be applied including (starting and target situation, starting and target TRL, need for Technology Watch Report, need for expert consultation). The purpose of the Technology Watch Report is to analyse the state of the art and its commercial, technological and scientific environment. It is often carried out by an expert business consulting firm. This report compiles and analyses information from different international sources, creating a means of information and advice on the status of cutting-edge technologies and techniques that allow to know the state of the art, identify developments in different sectors and design competitive strategies. For this purpose, multiple types of information are analysed, such as: patent documents; scientific publications; technological offers and demands; R&D projects; competitors / potential partners. In the case of projects financed by the ERDF program, this report is mandatory to obtain the aid.

- Preparation of standard specifications (Pre-Commercial Public Procurement, Public Procurement of Technology for Innovation, Innovation Partnership): This is a reference specification, validated by the legal services and serves as a basis for the drafting of other specifications with similar content. As mentioned previously, is key, especially in innovation projects, that these standard specifications will be circulated to legal and technical experts for comments and modifications.

- In subsequent phases, these standard bidding documents will be used as a starting point for adjusting them to each bidding process.

First bid alternatives document for each of the Public Procurement of Innovation projects:

Drafting of the first document of alternatives based on the standard specifications and the information and decisions previously taken from the administrative clauses, technical specifications, as well as all the technical or legal documentation necessary for the bidding process. It includes proposal of alternatives related to: choice of type of Public Procurement of Innovation instrument suitable for the development of the project, proposal of functional and technical specifications, proposal of award criteria and change of phase (if applicable), proposal of technical and economic solvency requirements, proposal of IPR management, alternatives of annual budget distribution, eventual modifications and extensions as well as other key aspects of the Public Procurement of Innovation specifications (classification, term, budget, estimated value, confidentiality, etc.).

First complete version of the Public Procurement of Innovation bidding documents:

- Evaluation and selection of the proposed alternatives in order to proceed with the drafting of the first complete version of the CPI specifications. These would include the following:
    - Drafting of the section on business and technical solvencies: proposal of the required business solvencies and performance of simulations that allow foreseeing the concurrence and while only sufficiently solvent bidders may be awarded the contract (for example: with quality certifications, approved companies, business classification, etc.).
    - Definition of award criteria: proposal of a set of innovation evaluation criteria (automatic and non-automatic criteria).
    - Improvements and variants: review with the legal expert of best practices in relation to the incorporation of improvements or variants in the contract law.

- Contract modifications, progress clauses and extensions: assessment of available legal alternatives, evaluating the risk of legal uncertainty linked to possible contract modifications (in contrast to the chosen Public Procurement of Innovation modality).
- Proposal of exploitation rights of the technologies, products and services developed during the execution of the contracts, after their termination.

<u>Publication of the Public Procurement of Innovation bidding documents and evaluation of bids:</u>

- Prior to the publication of the bidding documents, each of the documents generated by the technical, administrative and legal experts available for the project must be reviewed. In addition, it is necessary to consider each of the following steps:
  - Configuration of the contracting table for the required award procedures.
  - Definition of the bid evaluation process, in accordance with the proposed award criteria.
  - Evaluation of bids and objectification of the solvency criteria and criteria for evaluating the bid with the best value for money.
  - Definition of the award criteria (especially those of value judgment).
  - Training the evaluation committee in the application of the award criteria in a homogeneous manner.
  - Establish the processes for the resolution of doubts to possible bidders, document management, elaboration of FAQs in accordance with the award criteria, etc.
  - Management of doubts generated by the companies and, if appropriate, propose answers and clarifications to them.
  - Document management throughout the bidding phase (up to the formalization of the corresponding contract).

5.6 AWARD OF THE PUBLIC PROCUREMENT OF INNOVATION CONTRACT:

This process includes the award proposal, the presentation of the documentation by the contractor(s) and the execution of the contracts. In detail, it includes the following actions:

- Technical evaluation report with the results obtained in the evaluation process for the selected proposals.
- Management of claims, appeals and/or challenges to the process.
- Formalization of the contract.

This is the last step of the **FCP Methodology**.

5.7. KICK-OFF OF THE PUBLIC PROCUREMENT OF INNOVATION PROJECT:

Lessons learned and recommendations

The Kick-off meeting should be an opportunity to draw public attention to the Public Procurement of Innovation actions.

It is recommended to thoroughly assess which people are important to consider for the implementation of innovation projects, so that the profiles that best facilitate the objectives of the strategy (ecosystem generation, open innovation promotion, etc.) can be identified.

In this phase, a thorough planning of the Public Procurement of Innovation project should be elaborated; its scope, the offer(s) received and a roadmap for an effective administrative, legal and technical follow-up should be established.

As a first step, a kick-off meeting should be organized with the parties involved in order to establish a governance structure for the Public Procurement of Innovation project and propose the roles, responsibilities and commitments of each of the parties, both on the part of the contracting Administration and on the part of the successful bidders.

This initial Public Procurement of Innovation project kick-off meeting does not preclude the subsequent formalization of the acceptance of each project plan at another meeting.

The winning technical proposal(s) will be reviewed at these meetings.

5.8. PUBLIC PROCUREMENT OF INNOVATION PROJECT IMPLEMENTATION:

Lessons learned and recommendations

The development of Public Procurement of Innovation projects must be carried out in a controlled manner, ideally with a project monitoring and management service that ensures the correct execution of each project. Projects based on Public Procurement of Innovation, usually have more associated risks than non-innovation projects.

The standardisation of processes makes it possible to streamline and facilitate the monitoring from a technical and operative standpoint.

It involves all those administrative and document management tasks necessary to ensure the correct execution of the Public Procurement of Innovation project(s). The following methodology is proposed for each of the ongoing Public Procurement of Innovation projects:

- Preparation of the Work Plan with the key aspects: deadlines and milestones, presentation of the project schedule, dedication of each of the components of the project team and establishment of the responsibility of each of them. Compliance with each requirement of the specifications should be monitored on an ongoing basis:
    - Verification that the task list is consistent with the objectives and scopes.
    - Verification that effort, costs, deadlines, equipment are consistent with the objectives and scopes.
- Document Management Plan.
- Risk Management Plan.

- Detailed planning of documentation deliverables and deliverables resulting from the work, etc.

5.9 ACTIONS WITHIN THE PUBLIC PROCUREMENT OF INNOVATION CONTRACTS:

Lessons learned and recommendations

During project development, it is recommended to identify possible partnerships with innovation agencies that provide financial and organisational support to bridge the gaps from R&D processes to innovation and from.

It is advisable to define early on indicators that allow, at a glance, to assess the status of the project. These KPIs should be defined at both technical and administrative level during the early stages of the project. innovation to the market.

This process includes the development of a set of administrative actions related to the execution of the contract that may entail foreseen or unforeseen modifications, extensions, etc. during the execution of the contract.

A defined project management methodology must be put into practice to control the execution of the project and the follow-up of the work plan, focusing on the following aspects:

- Control that the methodology and work plan are relevant to the stage the project is in, allowing for modifications when necessary.
- Control that risks and deviations from the plan are assessed.
- Control that actions and contingency measures are taken.

The monitoring and control of the tasks will be carried out, in addition to the deliverables required in each phase of the PPI project, based on an interim report and a final phase report prepared by the awarded company(ies). The company may be required to submit such reports as deemed necessary to determine whether:

- The company has used the resources foreseen and adequately carried out the activities planned for the phase it is executing (satisfactory completion); and
- Whether the project is progressing adequately towards the achievement of the final objectives (successful completion) and, therefore, the next phase has begun. For this purpose, the following must be prepared (if the tender is finally organized as a Commercial Public Procurement and in phases):
    - Information on Recommendations, at the midpoint of the phase (if any), which allow the satisfactory or unsatisfactory fulfilment of the objectives of that phase, for payment purposes, as well as the passage to the next phase.
    - Final qualification information of phase results, which will allow determining the satisfactory or unsatisfactory fulfilment of the objectives of the first phase of this process, for payment purposes, as well as the company or companies moving on to Phase 2 based on their successful completion.

The functional requirements, their phases, the milestones established for each phase and in the project planning and any changes to them that may be agreed upon by the parties through the procedures established for change management should be reviewed periodically, in accordance with the procedures established in the contract.

5.10. TECHNICAL CLOSURE OF THE PUBLIC PROCUREMENT OF INNOVATION PROJECT:

Lessons learned and recommendations

To facilitate the technical closure of projects, it is key to keep track of the technical documentation related to the project, monitoring, controlling, and ensuring the quality of the associated deliverables.

This process includes checking the quality and volume of deliveries, in order to ensure their quality and consistency with the commitments acquired in the awarding of each of the PUBLIC PROCUREMENT OF INNOVATION contracts.

It is recommended that the results are reviewed based on the indicators established at the beginning and during the implementation of the project. The information input channels for the review of the system of indicators and objectives are:

- The level of success of the objectives achieved.
- The evaluation of the processes.
- The evaluation of the organization in relation to these activities.
- Evaluation by stakeholders (customers and collaborators).
- Assessment of the scalability of the developed product and evaluation of the road-to-market.

A good practice is to build a spreadsheet for each project properly prepared so that, as a report, it allows a quick and easy way to understand the tasks, deadlines and main indicators.

In addition, it is advisable to hold a meeting per project to review the results obtained with a view to closing the project.

5.11. ADMINISTRATIVE CLOSURE OF THE PUBLIC PROCUREMENT OF INNOVATION PROJECT:

Lessons learned and recommendations

In order to facilitate the projects technical closure, it is key to keep track of the technical documentation related to the project, monitoring, controlling and ensuring the quality of the associated deliverables.

As part of the technical closure of the project, it is recommended to support companies in bridging the gap from innovation to market. This can be done by the procurers, in addition to positioning themselves as a use case, by managing access to the CE marking, which is required by the European Union for the commercialisation of products within its borders. This is particularly important in the digital health sector, where products where products must undergo extensive quality and data security checks.

It is particularly important to consider the technical and economic audit procedures of the results, for the justification of expenditure of the aid applied for (where applicable).

It involves the closure of the projects from an administrative point of view, considering the legal reports, invoices and other documents related to the project and that are necessary to document its correct execution.

5.12. DEPLOYMENT OF THE PUBLIC PROCUREMENT OF INNOVATION PROJECT RESULTS:

Lessons learned and recommendations

For the correct contract closure and administrative closure of the projects, it is necessary to keep a thorough control of the contract and administrative information of the innovative project during its development, so that the eventual justification of expenses is as simple as possible.

It is recommended, in order to draw lessons for future projects, to make an analysis and evaluation of good practices, risks or drawbacks detected during the Public Procurement of Innovation project.

In certain cases, the successful bidder will be expected to carry out a detailed planning of the activities required from the end of the contract until the product reaches the market (subsequent validation studies, product compliance certification procedures, industrialization activities, etc.).

The result of this phase is expected to be a complete product manual with its application protocols and expected performances, as well as the most suitable format for its use and a complete plan guiding its placing and market scalability.

5.13. CHANGE MANAGEMENT:

Lessons learned and recommendations

It is recommended that change management should be implemented from the start and to continue through the whole life span of the innovative project, involving future product managers or users in the development of such innovative products or technologies.

Change management should include training processes for the professionals responsible for the innovative products or services, so that the administration does not depend directly on the development or service provider companies after the end of the contract.

The end users will likely need specific Digital Literacy training to guarantee adoption, proper use and engagement with the developed solutions.

Change management is identified as one of the main points of interest regarding the management and execution of Public Procurement of Innovation projects. To this end, models, methodologies, tools and procedure manuals should be articulated within the contracting administration to facilitate the incorporation of the new developments and procedures used during the execution of the service into the Administration's normal operations, to facilitate **"learning for the future".**

6. CONCLUSIONS: SUMMARY OF MAIN RECOMMENDATIONS TO FOSTER PUBLIC PROCUREMENT OF INNOVATION

- Experience from project development, especially in the case of Pre-Commercial Public projects, shows a need to standardise and streamline, through training and the development of methodologies, procurement procedures so that the transition from identification of the need to project implementation is as quick as possible.

- It is key to identify possible synergies between companies and entities, so as to optimise the process of detecting and resolving needs through Public Procurement of Innovation, fostering the generation of Open Innovation ecosystems.
- Although there is a lack of "Public Procurement of Innovation Culture" within the Administration, a correct training approach, focused on the practical vision of the process, and the participation of key agents within the organisations can help the rapid implementation of PUBLIC PROCUREMENT OF INNOVATION in the normal functioning of the Administrations.
- Public Administrations are in position to support the road-to-market of the innovative products that are developed, acting as use cases or "early adopters" of these technologies.
- The creation and updating of Early Demand Maps are key to the quick identification of unmet needs and challenges that may arise within the public administration, serving as a basis on which to define a strategy for Public Procurement of Innovation processes in a consensual and motivated manner, rather than based on the urgency of the purchase.