

RIS3CAT Monitoring

5. The potential of public procurement of innovation to provide more effective responses to societal challenges

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1. Introduction

Governments have a vital need to accelerate innovation in public services and public policies by adopting radically new focuses and approaches. The Public Administration urgently needs to provide new answers to help resolve the major challenges posed by population aging, climate change, persistent health problems among the population (obesity, drug use, alcohol, mental health problems, etc.) and so on, and must do so within a context of limited public resources.

Accounting as it does for more than 15% of total gross domestic product in the European Union (hereafter, EU), public procurement has enormous potential for impact and transformation. There is widespread agreement that there is a large margin in Europe for improving the strategic use of public procurement as a driver for social transformation towards a more sustainable, more inclusive development model. That is why in recent years the EU has begun to encourage increased adoption of public procurement of innovation (hereafter, PPI) through directives on public procurement and programmes aimed at promoting PPI itself.

However, governments still show little understanding of PPI, from either the theoretical and conceptual perspective or in terms of practicalities and implementation. The strategic approach that PPI proposes often clashes with resistance to change among personnel and units in organisations, which insist on reproducing widely tried-and-tested and accepted forms of procurement that ensure high levels of legal security.

PPI represents a change in the model for planning and managing the procurement of public services, and a radical cultural shift in the way government makes its purchases. It promotes innovation and competitiveness in the business system. Adopting PPI enables governments to demand products and services that do not yet exist on the market, opening up new business opportunities for companies, which are required to propose innovative solutions in order to develop and improve public services and provide the public administration with the means to provide more effective and efficient solutions to societal challenges and needs. As a result, the procurement of public services becomes a cooperative process aimed at finding and developing the best possible solutions to the needs of users, that is to say, citizens. In PPI, companies (especially SMEs), research and innovation players and end users all take part in the process to define the needs to be covered and the key requirements that government should establish for the proposed solutions.

Due to high levels of scrutiny and constant pressure on public finances, public buyers are often reluctant to take risks, and as a result their aim is often merely to ensure the most reliable result. Generally speaking, public buyers tend to aim at minimising risk, seeking firmly-established economic operators and with a good reputation and commissioning tried-and-tested solutions. This attitude is the result of a view of public

procurement as an administrative and instrumental process aimed at acquiring products and services at the lowest possible price and with maximum legal security, often to cover immediate and specific needs of government. The result of this approach to public procurement is a tendency to apply simple, tried-and-tested solutions aimed at alleviating the symptoms of challenges or problems in the short term, but with a very slight, null or even negative impact in the medium and long term.

However, public procurement is the main instrument available to governments to articulate more effective responses to the growing demands of a society faced by ever more complex challenges. As a result, public procurement is a vital instrument for:

- Developing new forms of cooperation with companies, research and innovation players and civil society in order to reinvent and redesign public services and policies and respond more effectively to societal challenges; and
- Promoting, through demand, the development of new business models that provide better responses to people's needs.

The failure to use public procurement as an instrument to explore, develop and implement responses adapted to new societal needs has the effect of increasing the pressure on public services and brings with it substantial economic and social costs. These costs, such as those linked to increasing social inequalities or the collapse of public services, are often not measured or reported.

It is very difficult to expect governments to accept and implement PPI if they do not internalise the fact that this is the main instrument available to public buyers seeking to provide more effective responses to societal needs and challenges. To this end, it is necessary to develop mechanisms and methodologies to manage risk and measure the value and economic and social impact of public policies in dynamic and complex contexts.

Despite the difficulties of implementing PPI projects in the public administration, we now have numerous examples which demonstrate that it is possible to introduce PPI and that, when this occurs, impact is made on challenges, and satisfactory results are obtained, for government, for public service users and for society as a whole. Disseminating these examples of good practice is key to spreading the adoption of PPI by public administrations.

With the objective of promoting acceptance and implementation of PPI in Catalonia, this document presents four PPI initiatives. Three of the initiatives are supported by the Government of Catalonia within the framework of the Strategy for Research and Innovation for the Smart Specialisation of Catalonia (hereafter, RIS3CAT). The fourth is an initiative launched by Hospital de la Santa Creu i Sant Pau within the framework of two Horizon 2020 projects. This initiative has generated a call for PPI proposals to centres forming part of the Integrated Health System of the Public Health Network

of Catalonia (hereafter, SISCAT). The call is promoted by the Catalan Health Service (hereafter, CatSalut) within the framework of RIS3CAT. All four initiatives (which were at the design, tender or implementation stage in March 2019) will contribute to transforming both public services and the model for cooperation between government and other players aimed at provide more effective and efficient responses to societal challenges.

2. Examples of PPI initiatives

PPI entails a cultural paradigm shift and a change in ways of doing things, in terms of both interaction and cooperation with third parties (companies, experts and public service users) and operational interaction and cooperation (technical, legal and contractual) among government units.

The four initiatives presented in this section exemplify the potential of EU funding to provide incentives to employ public procurement as an instrument for innovation and transformation that enhances the efficiency and effectiveness of the responses made by government and public policies to societal challenges. The four initiatives also highlight the enormous potential of public procurement to help society move towards an [open innovation and open science paradigm](#).

2.1. New cooperation models to reduce the carbon footprint of public investment

PPI enables interaction between government, companies and experts and the establishment of work and collaboration dynamics that can generate new models for fulfilling contracts based on cooperation between the buyer and supplier. These models have the potential to become much more efficient than traditional models, which are based on control of the supplier.

Example

Innovation to respond to the challenge of climate change

PPI for sustainable road surfaces

Within the RIS3CAT framework, and with financing from the ERDF Operational Programme Catalonia 2014-2020, the Directorate-General for Mobility Infrastructure (Ministry of Territory and Sustainability) promotes a public procurement programme aimed at introducing innovation in road surface projects. The programme has three objectives:

- To improve competitiveness of companies;
- To reduce the carbon footprint; and
- To improve efficiency in implementing projects.

What is the innovation?

Providers use more sustainable materials and technologies in the design, production, construction and maintenance of road surfaces. The results from applying bitumen

mixes at low temperature are substantially better than those obtained using conventional mixes, since they enable:

- Energy savings and a decrease in emissions;
- Improved working conditions, since both temperature and the number of particles in suspension are decreased; and
- Economic and time savings, as the mixes are less sensitive to ambient temperature and, therefore, works can be carried out over more months of the year and with longer work times.

What is transformed?

The PPI process implemented also entails a change in the way government operates, both internally and in its relations with providers. This change in the model is summarised in the table below:

Table 1. Procurement models

Previous procurement model, based on control of the provider	New procurement model, based on cooperation and risk sharing
Two contracts, awarded at different times and with different successful bidders: one to draft the works project, the other to implement it	A single contract with the three temporal axes involving cooperation by several companies, focusing on the overall process and reducing activities that do not generate value for the service
Model of relations based on contract management and centred on delivery of the services tendered	Model of relations based on establishing mechanisms for relations and the co-creation and continuous improvement of the services commissioned
Work methodologies based on the fulfilment of transactions and subsequent evaluation	Versatile work methodologies based on review, evaluation and continuous improvement processes
Model aimed at establishing guarantees and penalty mechanisms in cases of breach.	Model aimed at the proactive identification of risks and the joint definition and management of mitigating actions
The key element in the tender is the cost	The key element in deciding the successful bidder is the value obtained. Accordingly, not only price is taken into consideration, but also innovation, capacity for continuous improvement of the service and savings generated

What societal challenges does the innovation respond to?

The fact that the criteria for awarding tenders now include requirements for companies to develop products and services that minimise the carbon footprint throughout the life of government investment and the public services it provides is key to combatting the challenge of climate change. In this regard, governments, research players and companies should explore new models for cooperation that include risk sharing and in which all three stakeholders have incentives to maximise shared value (economic, social and environmental). In the case of this project, it is expected that the carbon footprint generated by road surfaces throughout their life cycle will be 12% lower than that caused by conventional surfaces.

2.2. New models for health care to maximise the value of public money

In a context of population aging and limited public resources, PPI and European funds are key for exploring new models of public-private partnerships with shared risk and which can accelerate the transformation of public health systems in Europe. Patients should play a central role in these new models.

Example

Innovation to implement new, comprehensive, patient-focused care models

PPI for the comprehensive treatment of patients with arrhythmias who need implantable cardiac devices

Since 2010, the Hospital of La Santa Creu i Sant Pau (hereafter, Sant Pau) has been exploring patient-focused care strategies in the field of the implantation of cardiac devices in patients with arrhythmias.

Under the Stop&Go project, which was awarded second prize in the 2018 European Silver Economy Awards, Sant Pau reorganised its care model for patients who need an implantable automatic defibrillator.

Moreover, through the RITMOCORE project, Sant Pau establishes a comprehensive, integrated treatment model for people with symptomatic bradycardia that require the implantation of pacemakers (more than 50% of these patients are over 80 years of age).

What is the innovation?

In recent years, highly positive results have been obtained in Europe from a number of pilot projects for the remote monitoring of patients that have been implanted with cardiac devices. However, only in very few cases has the model subsequently been extended to all patients. Implementing the model is no easy task, because it requires

huge organisational and financial efforts in the short term with a view to achieving improvements in the medium and long term. That is why additional European funding is key to implementing such projects.

In the Stop&Go project, Sant Pau successfully implemented a new formula for the comprehensive treatment of patients with implantable automatic defibrillator. Through a service contract with shared risk between hospital and provider, a healthcare process was established that includes the implantation of the device most suited to the condition of each patient, remote monitoring of the patient with warning signal when anomalies are detected, the provision of information to patients and relatives via a support centre and an app, and payment for results.

Within the framework of RITMOCORE, a service and shared payment agreement with a payment for results was also established for a model for comprehensive, personalised treatment that includes activation of the patient and their environment, cooperation among the different healthcare levels (hospital and primary care) and technology to improve patient monitoring.

What is transformed?

Sant Pau is currently engaged in a process of changing the care model for all patients who need implantable cardiac devices with the medium and long term aim of transforming and reorienting the whole organisation to focus on the patient. This change, which requires the activation of patients and their environment, as well as coordination at the different healthcare levels, will enable Sant Pau to reduce waiting lists, monitor patient evolution in a more personalised and intensive way (using remote monitoring systems, which reduce the number of visits to the hospital and enable the detection of health problems in patients), improve the efficiency of emergency treatments, reduce hospitalisation times and improve the quality of life of elderly patients.

Based on this experience, and within the framework of RIS3CAT, CatSalut has launched a call for proposals for SISCAT centres worth 16 million euros under the ERDF Operational Programme Catalonia 2014-2020. The objective is to implement PPI projects to accelerate the process of transforming the system towards more personalised, patient-focused care models that maximise the value of public money. Eighteen projects have been selected as a result of the call for proposals.

What societal challenges does the innovation respond to?

Health systems are required to respond to the challenge of providing quality healthcare services to an increasingly aging population, and they have to do this with limited resources. For the public health system to be sustainable in the long term, it is essential that current care models should be replaced by personalised, patient-focused systems that apply the most advanced technologies, articulating efforts and enabling

coordination of care system stakeholders (patients and their environment, hospitals, primary care and providers).

2.3. New cooperation models to co-create products that respond to government needs

Governments are responsible for covering needs for which the market does not have an immediate response. There may be several reasons for this lack of solutions: the market may not have identified the need; it may not be technologically mature; it may not detect the possibility of recouping investment; or it may not possess the necessary know-how to respond to the need. In all these cases, European funding (through framework research programmes and structural funds), combined with the purchasing power of government, is key to taking research results onto the market and achieving a social return from public funding of R&D&I.

Example

Innovation to respond to the need to monitor the impact of public actions in complex, dynamic environments

PPI to develop new monitoring tools for RIS3 strategies (RIS3-MCAT Platform)

In partnership with an external company, the Directorate-General for Economic Promotion, Competition and Regulation, of the Ministry of the Vice-presidency and of the Economy and Finance has co-created an open data technology platform to map the smart specialisation of Catalonia.

What is the innovation?

A new generation of dynamic, participatory monitoring systems that takes into account the complexity and dynamism of research and innovation ecosystems is required in order to monitor RIS3 strategies. The [RIS3-MCAT Platform](#) is a prototype for the open data tools that will be developed over the coming years to monitor the impact of public policies on complex, dynamic environments.

The RIS3-MCAT Platform is an open government, artificial intelligence data visualisation project that integrates, interrelates and makes interoperable open data from research and innovation financed by European funds in Catalonia. The objectives of this platform are:

- To measure the impact of European funds on the specialisation of the research and innovation ecosystem in Catalonia and on interrelations between stakeholders in this ecosystem

- To identify opportunities to maximise the collective impact of research and innovation in Catalonia, based on synergies and coordination of efforts
- To provide new evidence to enable decision-making by stakeholders in the research and innovation ecosystem in Catalonia, promote new cooperation dynamics and inspire new public policies
- To raise the profile of Catalan organisations that participate in European research and innovation networks
- To understand how European funds contribute to providing innovative responses to the challenges that face our society and future European research and innovation missions

What is transformed?

The RIS3-MCAT Platform is the result of a research and innovation project in which government established a partnership with a company. Under the project, the government provided knowledge about the needs and potential uses of the Platform, as well as a test bench to develop new functions to respond to issues raised by public administrations and research and innovation system stakeholders. For its part, the external company provided scientific and technical know-how about open data, the semantic web, artificial intelligence, natural language processing and data visualisation. The company is also familiar with R&D&I and smart specialisation policies, facilitating communication and the proposal of technological solutions adapted to the strategic needs of government.

It should also be noted that the company had previously received European research funding (Horizon 2020) and for the acceleration of startups engaged in the field of open data (ODINE) to develop the knowledge and technology applied in this project.

The RIS3-MCAT Platform is an example of an open, equal model of relations regulated by an administrative contract in which government and the company co-design, co-develop and validate a tool for the new generation of monitoring systems. It is also a clear example of the potential of public procurement to help optimise EU investment in research and innovation.

What societal challenges does the innovation respond to?

To provide more effective responses to increasingly complex societal challenges, governments require tools that enable the design, testing and evaluation of public policy through systemic and holistic approaches that also take into account the multiple cause and effect relationships that are generated in dynamic environments.

The RIS3-MCAT Platform is a pioneering open data tool with the capacity to cross and interrelate micro data from multiple databases in different ways, and which also offers new systemic perspectives regarding the impact of European funds on research

and innovation systems from the point of view of both predominant and emerging specialisations and the evolution of patterns of collaboration between stakeholders in the system. This new perspective provided by tools like the RIS3-MCAT Platform is key to developing more effective responses to complex societal challenges.

2.4. New cooperation models to articulate more effective responses to societal challenges

In most cases, the design and implementation of innovative and effective solutions to respond to societal challenges require the participation and cooperation of citizens as an active part of the solution. Clear examples include: combatting climate change; waste reduction, reuse and recycling; and reducing the cost of certain medical services by using online medical tools. One of the main challenges to public policies in the 21st century is that of managing citizen participation. Citizens' expectations regarding the role of government have changed greatly in recent years: government is no longer seen as an agent that guarantees stability, resilience and continuity, but as one that anticipates change and responds to the challenges of the environment and the expectations of a technified citizenry which is highly engaged both socially and environmentally.

Example

Innovation to respond to the challenge of waste and the circular economy

PPI to promote new models for selective municipal waste collection

The Catalan Waste Agency (hereafter, ARC) manages a call for proposals for subsidies to enable local entities to implement PPI pilot projects in the field of selective municipal waste collection aimed at changing the trend in selective waste collection in Catalonia, which is currently stagnant.

Waste collection is a municipal competence and, although in recent years some municipalities have innovated in the field of selective collection models, these efforts have not helped to improve overall figures for Catalonia. There is a need to improve coordination between territories and the exchange of information on good practice and success factors.

What is the innovation?

The ARC call for proposals establishes a common framework for local authorities to propose and implement pilot projects aimed at modernising traditional municipal waste collection services, include the active participation of citizens (greater co-responsibility), propose new business models based on shared value (economic, social and environmental) and enable us to move towards a circular economy model. Establishing a common framework will also enable comparison of the results produced by different

models and will help to identify the determining factors for changing trends in selective waste collection in Catalonia.

What is transformed?

The call for proposals develops a model for cooperation between different government levels to define long-term shared systemic objectives (top-down) and coordinated local initiatives with high levels of citizen involvement (bottom-up) aimed at achieving these objectives.

Based on the learnings generated by pilot projects launched by local authorities, the ARC will promote changes in current planning and regulation models for waste management in Catalonia and will work for the wider implementation of the most effective measures.

What societal challenges does the innovation respond to?

Despite the great efforts made by governments to reduce it, waste is still a huge source of pollution. Increased recycling and return of waste to the economy will help to reduce both this pollution contamination and demand for (increasingly scarce) raw materials, as well as generating new opportunities for economic growth and job creation. Governments, research and innovation players, companies and civil society should explore and develop new waste management and business models that can help to accelerate the transition to a circular economy.

3. Final thoughts

Although there is broad agreement in Europe about the potential of public procurement, and particularly of PPI, as a strategic instrument to maximise the value of public money and provide more effective responses to societal challenges and the growing needs of society, levels of implementation of PPI in the public administration are still very low. Laws permit and promote PPI, and there are, in Catalonia and around Europe, numerous examples that demonstrate that it is a good instrument for ensuring the sustainability of public services, improving their quality and coverage and helping to boost the competitiveness of the production system.

This report highlights four Catalan initiatives which show that PPI is complex but possible, and that promoting it is more necessary than ever, both from the point of view of efficiency in public spending and viability of public services, and from the social and environmental perspective. Very often, the main challenge that faces PPI projects is not the budget, but the many forms of internal resistance within government itself when it comes to changing the way things are done. In all four initiatives, additional financing from the EU was a key incentive to overcoming the difficulties and challenges encountered over the course of the process. The other factors that determined the success of the initiatives studied are: commitment, cooperation and capacity (the three Cs).

3.1. Commitment

The commitment of the organisation's management team to the strategic use of public procurement is a crucial factor. This team should lead the change in the management plan that is implemented at the same time as PPI adopted and should establish common objectives for the whole organisation in terms of increasing the efficiency of public spending, improving services and raising user satisfaction levels.

Only in this way is it possible to work on PPI initiatives through a strategic and multidisciplinary vision, with work teams in which different services and departments (management, purchasing and commissioning staff, legal advisors, operational personnel and so on) all cooperate.

3.2. Cooperation

To improve the efficiency of public services in responding to societal challenges, it is essential that public buyers should share social challenges and needs with the different stakeholders that can help resolve them. These stakeholders, which are many and varied, are not limited to the usual provider companies, which often have direct means of communication with public buyers. They also include research and innovation

players, SMEs and users of public services. In order to keep potential solution providers informed and to encourage them to cooperate in designing and articulating innovative new public services, transparent, direct and dynamic channels of communication are needed. These communication channels enable the implementation of open innovation processes that benefit not only government and users of services (increased efficiency of public spending and improved services), but also the providers of solutions, as they can develop new, more competitive products with high potential demand.

In order to obtain maximum benefit from PPI, it is essential for public purchasers to bear in mind that the innovations they demand should also be a source of wealth and competitiveness for the production system and be of value for society, apart from the commissioned services themselves. This type of approach generates synergies and new models for risk-sharing partnerships between government and providers, and contributes to reducing costs in other associated public policies. The effect is to maximise the value of public money and reduce the bill paid by the public purchaser.

3.3. Capacity

PPI processes should be considered projects to which human, technical and economic resources are assigned. From the start of the project, the following should be established: objectives; work plan (including tasks, deadlines, responsibilities and budget); and the team assigned. The team should be multidisciplinary (including experts in the field of the subject of the purchase, in technology and innovation, in public procurement, in financial management and administrative procedures, and in project management) and have the capacity to take decisions during project implementation in order to respond to any obstacles, challenges or opportunities that may arise. In organisations with little experience of PPI, external expert support will often be needed throughout the duration of the whole project.