URBAN AGENDA FOR THE EU

Innovation Public Procurement Broker (IPPB)
An introduction for practitioners

Guidelines to design a broker for innovation public procurement

18 May 2020

*** The Pact of Amsterdam states that the Action Plan "can be regarded as non-binding". Therefore, the actions presented in this Action Plan are not compulsory. ***

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Aim of this paper

"Every year, over 250 000 public authorities in the EU spend around 14% of GDP on the purchase of services, works and supplies. In many sectors such as energy, transport, waste management, social protection and the provision of health or education services, public authorities are the principal buyers."[1] Today, procurement is becoming strategic, more collaborative, and more technology-dependent than ever. Innovative and responsible public procurement empowers public authorities to obtain pioneering, innovative solutions customised to their specific needs. Many public administrations engage also in green public procurement of sustainable equipment and technologies, raise the quality of services offered to their taxpayers, increase the competitiveness of European industries and SMEs, and create jobs.

In 2017, following the Pact of Amsterdam[2] (May 2016) that established the Urban Agenda for the EU constitution and objectives, the Partnership on Innovative and Responsible Public Procurement has been signed as a part of the 12 original partnerships defined by the priorities sorted by the pact subscribers[3]. As stated in the Partnership's Action Plan[4], "*the aim of the Partnership is to push forward the development and implementation of an ambitious procurement strategy as an integrated and supportive management tool for governance".*

During 2018, the Partnership on Innovative and Responsible Public Procurement issued a specific Action Plan[5] .

Much innovation can come from market potential, and bringing this market potential closer to the purchasers is important, e.g. by pre-procurement engagement of market parties. **Innovation procurement brokerage is the function to** play a crucial role in capturing this innovation and by promoting the spreading and take-up of innovative procurement practices.

This paper aims at giving guidelines to design, set-up and manage the innovation procurement brokerage function.. The paper also provides an overview of the existing practices in the area of innovation brokering for public procurement. Specifically, it focuses on how existing practices can provide valuable insights to foster procurement innovation across EU cities.

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[1] http://ec.europa.eu/growth/single-market/public-procurement/

[2] https://ec.europa.eu/regional_policy/sources/policy/themes/urban-development/agenda/pact-of-amsterdam.pdf

[3] list of signees and more details here https://ec.europa.eu/regional_policy/en/policy/themes/urban-development/agenda/

[4] https://ec.europa.eu/futurium/en/system/files/ged/final_action_plan_public_procurement_2018.pdf

[5] https://ec.europa.eu/futurium/en/public-procurement/final-action-plan-public-procurement-partnership-available

1 What: an introduction to IPPB

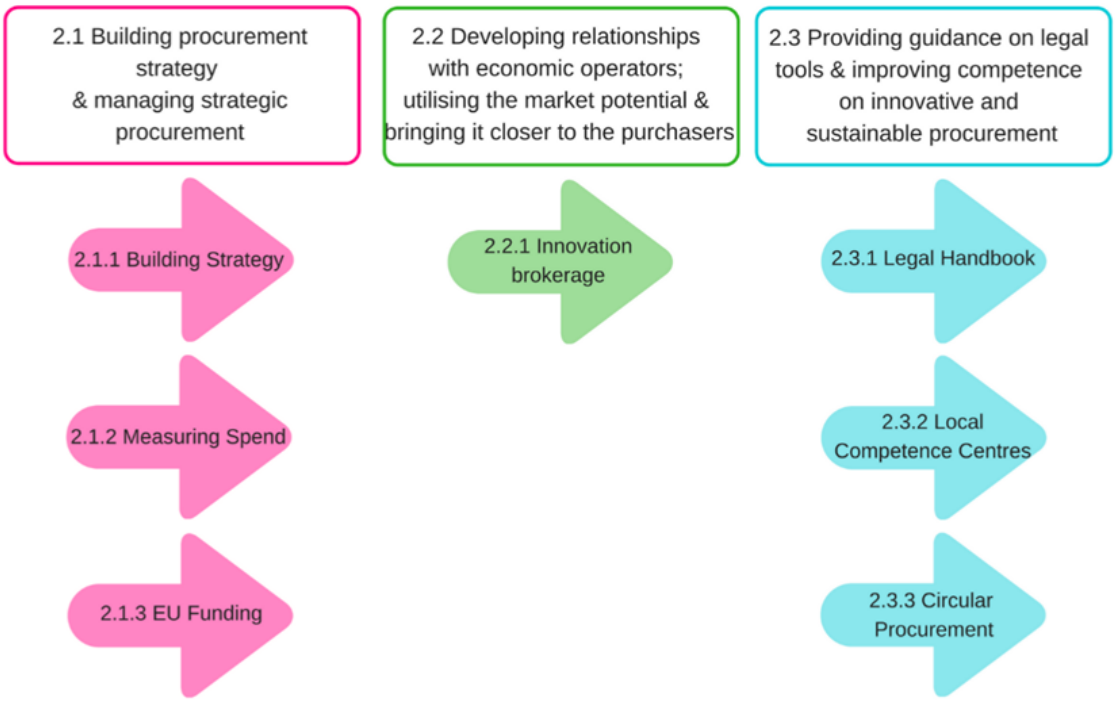
1.1 The Action Plan

The Partnership on Innovative and Responsible Public Procurement presented the final Action Plan in late 2018. With the seven proposed Actions, the Partnership seeks to facilitate a joint effort for a public procurement strategy of cities that supports innovation and sustainability (social, economic and environmental).

The Actions relate to three clusters:

- Building a procurement strategy and managing strategic procurement (Actions 1-3);
- Developing relationships economic operators; utilising the market potential and bringing it closer to the purchasers (Action 4);
- Providing guidance on legal tools and improving competence on innovative and sustainable procurement (Actions 5-6).

The Partnership formalised seven Actions, namely:



The focus of the Partnership is on the mid to long-term perspective of public procurement.

Therefore, the Partnership addresses three main topics: building a procurement strategy and managing strategic procurement; developing relationships with economic operators; utilising the market potential and bringing it closer to the purchasers; and, providing guidance on legal tools and improving competence on innovative, sustainable and circular procurement.

1.2 What is the specific problem?

On the suppliers´ side, early interaction with the contracting authority and theexplicit communication of a clear demand for innovation are known as success factors. In a tender situation, suppliers (economic operators) are often left without enough time to react, particularly if contracting authorities ask for innovative products. The notion of 'economic operators` (suppliers) has to be interpreted in a broad manner so as to **include persons, firms, branches, subsidiaries, partnerships, cooperatives, limited companies, universities, social entrepreneurs and local innovators, public or private.**

Specifically, links between start-ups offering innovative solutions and innovative SMEs, on the one side, and public procurers who may be willing to procure from them, on the other side, are often weak and do not arise spontaneously. Therefore, 'Innovation procurement brokers' can help to build or strengthen them. Nevertheless*, the issue of defining practical ways of interaction between contracting authorities, innovation broker(s) and suppliers is critically complex and has to take into account the specific procurement procedure.*[6]

The introduction of Innovation brokers should aim to mitigate and solve the former issues, offering concrete support to public buyers and public administrations willing to exploit the full potential of the EU Directives on procurement.

EU directives grant room for the experimentation of newly conceived public partnerships with the private or social sector and local communities especially at the urban level (e.g. innovation partnerships, public-social partnerships, public-private-community partnerships, public-community partnerships, public-private-people partnerships, etc.), as well as collaborative dialogue procedures to enable the co-design of such social and digital innovation partnerships and innovative procurement solutions. Their role should be aligned to the policy objectives which led to the introduction of the concept of innovation in the directives:

Research and innovation, including eco-innovation and social innovation, are among the main drivers of future growth and have been put at the centre of the Europe 2020 strategy for smart, sustainable and inclusive growth.[7]

[6] Procurement Directive, https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014L0024&from=EN

[7] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014L0024&from=EN

1.3 Definition of Innovation Procurement Broker

The broader definition of “innovation brokers” raised in early ‘2000 as part of the emerging paradigm of Open Innovation as an approach to research and innovation. Main actors of the Open innovation paradigm are the “solution seekers”, subjects that express a need to be solved in an innovative manner, and “solution providers”, subjects that offer knowledge, practices and technologies to satisfy the expressed need.

Innovation Intermediaries is a concept in innovation studies to help understand the role of (a coordinated system of) firms, agencies and individuals that facilitate innovation by providing the bridging, brokering, knowledge transfer necessary to bring together the range of different organisations and knowledge needed to create successful innovation.[8]

Innovation intermediaries are variously described as 'bridges', ' change agents', 'brokers'. They are important as the potential users of innovation (companies or public entities) are seldom connected to the developers of a new invention or technique or to the firms and organisations that have complementary expertise, knowledge and resources. So that intermediaries are needed to bring organisations and knowledge together to build supply networks and markets.

In the concrete experiences, there are three main areas of focus: business model innovation; management of intellectual property; innovation of services.

An emerging definition of Intermediaries includes a system of complementary organizational categories that shape, pilot and ensure systemic integration, by reducing the complexity of transactions, enabling institutional change and promoting crucial learning dynamics among system components, organizations and entrepreneurs; across political, economic and social innovation-relevant levels. These categories could be settled together, permitting a holistic approximation to the matter of intermediation.

Open innovation Intermediaries are responsible for facilitating the open innovation activity that organizations (public or private, for profit or not) are undertaking, focusing on fully exploiting the benefits of the mutual action and thoroughly mitigating the disadvantages and risks for all of the companies.

As discussed by the EU Commission (EC 2018), “*the links between start-ups offering innovative solutions and innovative SMEs (on the one side) and (public) buyers (on the other side), are often weak and do not arise spontaneously. Innovation brokers can help to build or strengthen them*”.[9]

The present document focuses on a specific category of open innovation intermediation: the Innovation Brokerage, and specifically the Innovation Public Procurement Brokerage.

What is an innovation **(public) procurement broker**? An Innovation (Public) Procurement Broker (IPPB) is an intermediary in the interaction between **public solution seekers** and all the possible solution providers (individuals, organisations, etc.).aimed to support public procurement of research

[8] https://en.wikipedia.org/wiki/Innovation_intermediary

[9] Commission Notice C(2018) 3051 : https://ec.europa.eu/transparency/regdoc/rep/3/2018/EN/C-2018-3051-F1-EN-MAIN-PART-1.PDF

services or of innovative solutions. In public procurement, public purchaser are solution seekers and economical operators are solution providers.

In the present document, the Innovation Public Procurement Broker is named “Innovation Procurement Broker (IPPB in short)”.

1.4 Role and functioning of the Innovation Procurement Broker (IPPB)

Public buyers in Europe have a significant role to play in societal transformation. Their focus is not only on the how (I.e. the procurement process) but also on the what (I.e. the contexts of interventions and the areas for improvement). Much innovation comes from market potential and bringing this potential closer to the purchaser is fostering the value of the exchange. While these practices are nowadays commonly adopted in the B2B paradigm, pushed by “budget or quality” drivers commonly adopted by for-profit organizations, the applicability of the same principles and best practices when one or more players are belonging to public stakeholders is not universally granted.

Moreover, the public sector can benefit greatly by the adoption of these practices, because the capability of purchasing the best solution for the new emerging need for innovation can have positive impacts not measurable by financial indicators but that can improve citizens’ life dramatically. If public purchasers adopt these practices, the positive liabilities can impact on policy making, mid and long-term strategy at governmental level, new opportunities to strengthen the relations with other countries, increasing the competitiveness of the EU in the global context.

Specifically, the innovation model we are referring to and will be considered, as grounds for the topic in the present document is the Open Innovation paradigm as defined by Henry Chesbrough in his book published in 2003. While the adoption of open innovation processes in the private sector is to date really wide, when Open Innovation is embraced by the public sector, we’d need to make some further considerations that will be enunciated in this document.

If we recall the main advantages and the main critics about the Open Innovation model, we can start making some interesting reflections.

Advantages:

- Reduced cost of conducting research and development
- Potential for improvement in development productivity
- Early incorporation of customers in the development process
- Increase in accuracy for market research and customer targeting
- Potential for synergism between internal and external innovations
- Enhanced digital transformation
- Potential for completely new business models
- Leveraging of innovation ecosystems[12]

Critics:

- Possibility of revealing confidential information in a competitive market
- Potential for the hosting organization to lose their competitive advantage after revealing intellectual property

- Increased complexity of controlling innovation and regulating how contributors affect a project
- Devising a means to properly identify and incorporate external innovation
- Realigning innovation strategies to extend beyond the firm in order to maximize the return from external innovation

Most of the critics – or disadvantages – raised to the Open Innovation model are mitigated when the solution seekers are public entities and the innovation broker is a coordinated system in an open context. For instance, the transparency of the needs and information typical of the public sector, is a potential attractor of solution providers and drives to the best matching of the solution with the expressed need.

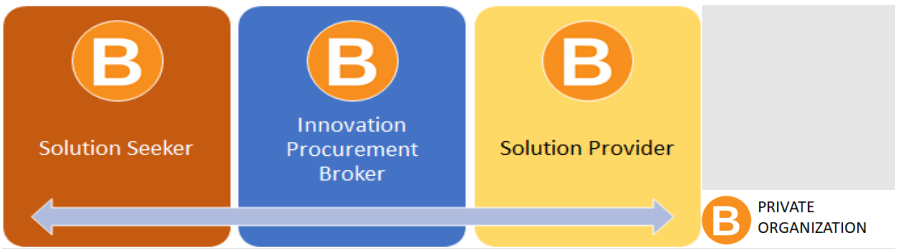
Also, the focus on "price" when procuring services and products is strongly differentiating the goal of public buyers from the goals of private entities and organizations. This gap widens when coming to the process of purchasing innovative products, services, equipment. Hence, specific differences emerge with respect to the roles of an Innovation Procurement Broker in the public and private sectors, and its role of "catalyst for the success of (public) innovation policies".

The present document focuses on the application of the Open Innovation paradigm to the brokers in a "Government to Business" paradigm. This will include both private and public brokers, even if we'll add further details on the advantages of public IPPBs.

1.5 Examples of innovation brokerage in the Open innovation paradigm

For the sake of clarity, we consider the most frequently recurring schemes of innovation brokerage in the private and public sector and focus on the ones that are in the scope of the present document. The typical Innovation Broker model in the private sector is illustrated in the following figure, where the "solution seeker" – the Innovation broker – and the Solution provider are all belonging to the private sector.

Fig. 1.1. A common model for IPB: Business to Business to Business

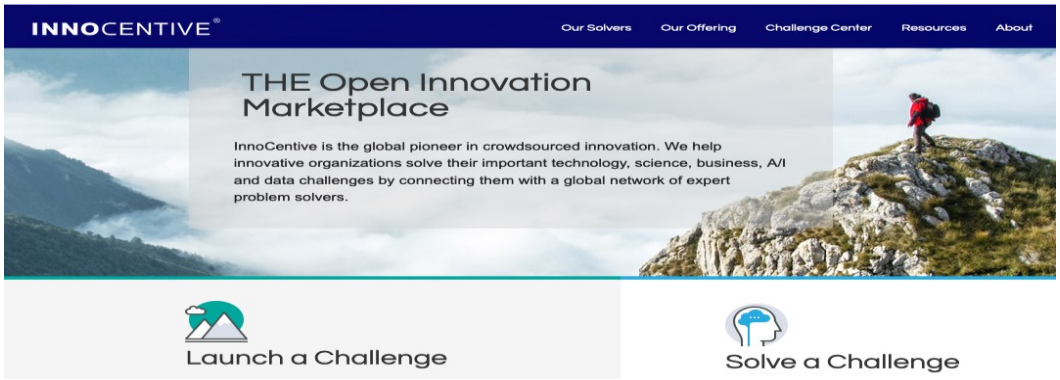


An example of this approach is provided by *InnoCentive*[10], a marketplace where companies can look for solutions to their innovation problems by using Internet-based services (website marketplace).

[10] https://www.innocentive.com/

Now becoming a community with 100,000 entities involved in the network, this network is hired/used by companies to get the innovation solutions they need. Overall business exchanges are estimated at around 10/15mio per year, but with a higher overall turnover. Interestingly, solutions can also be requested to internal employers (400,000 are the solvers involved till now)[11].

Fig. 1.2. Example of the Business to Business to Business IPPB model



Source: Innocentive.com

B/G (public or private seeker) 2 B (public broker) 2 B (private solutions holders): Another classic example of public procurement broker is that provided by *HeroX.com*[12]. The service usually provides relatively low awards for specific challenges (highly complex), with a community of 380,000 organisations available across the globe to reply to specific low-budget challenges. Interest for solution providers can also be reputational, apart from direct financial rewarding, and brokers could leverage such effects by making economies of scales in reaching to a global platform of companies. This model has potentials for aggregating both demand but supply of complex services/products[13].

Fig. 1.3. Example of the Business/Government to Business (private broker) to Business IPPB model

Source: HeroX.com

This is the most common Open Innovation process, widely adopted by organizations worldwide, start-up ecosystems, accelerators and incubators. The dynamics observable in this schema are very similar to the “marketplace approach”, as theorized by Open Innovation model that started the trend

[11] https://www.youtube.com/watch?v=csMUGmZ0KqI&feature=youtu.be

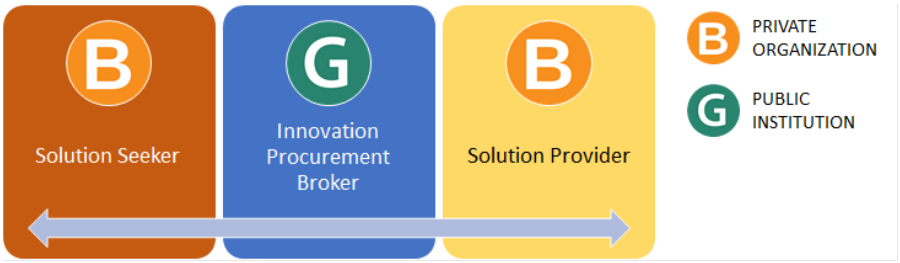
[12] https://www.herox.com/

[13] https://www.herox.com/how-it-works

of outsourcing the innovation processes. This schema is nevertheless out of the scope of the present document, as it does not include the public sector.

Another commonly observable model is the one illustrated in the figure below. This is the situation where a public entity is supporting the matchmaking between two private entities, where the solution seeker is typically larger that the solution provider(s), to foster job creation, to support SMEs and the productive fabric of a local region, to facilitate the contact between organizations and R&D centres (universities, research centres, spin-offs).

Fig. 1.4. A relevant model for I(P)PB: Business to Government to Business



Many examples of this schema with local and regional Innovation Procurement Brokers can be identified in EU Countries – for example in Italy, as assessed by AGID[14] – but examples can be found at the national level as well. Furthermore, some EU programmes like FIWARE are falling into this category too. Nevertheless, as this scheme is not addressing Public Procurer as solutions seekers, this situation falls outside the scope of analysis of the present document.

1.6 Examples of innovation public procurement brokerage

The possible models where the Solution Seeker is a public institution – or every entity that is subject to the European procurement laws – and can be equated to public institutions (railways, energy or ICT infrastructure owners, etc) are finally illustrated in the figure below.

[14] https://www.agid.gov.it/en

Fig. 1.5. A common model for IPPB: Business to Business to Business

In the two models illustrated above, the Innovation Procurement Broker is a public subject or, when it is private, actions are taken to assure that its "for-profit" nature will be mitigated in favor of pledging the impartiality, fairness and true spirit of "serving" the public good of its institutional counterpart. The solution provider can be also a public institution that in its statute has the possibility to provide services or supplies to other public or private entities.

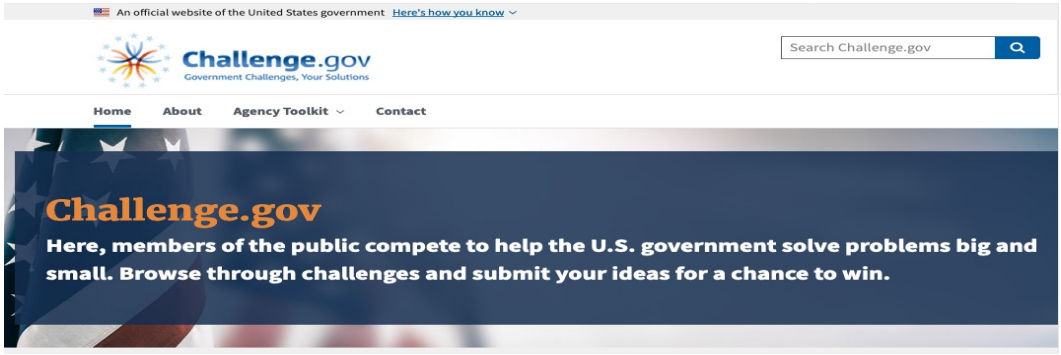
Various examples exist in the possible mix of solutions and services and few are now illustrated.

G (public seeker) to G (public broker) to B (private solutions holders): A classic and pioneering example in Innovation Public Procurement Broker is offered by *Challenge.gov*[15], a website launched by the US Federal Agency to publish its innovation challenges so to seek specific solutions/services from a community of providers. The Innovation Broker is in this case set-up as an independent Public Company, separated from the Agency, which aims at supporting the Federal Agencies in performing public procurement. Challenges can be external to the broker (performed by the seeker) or not (performed by the broker). Until few years ago the brokerage function of challenge.gov was delivered by InnoCentive (presented in Figure 1.2) and only more recently Challenge.gov is providing full brokerage services. The whole value of the challenges managed by challenge.gov is in the order of tens of millions of Euros per year16.

[15] https://www.challenge.gov/

[16] https://www.challenge.gov/about/

Fig. 1.6. Example of the Business to Government (public broker) to Business IPPB model



Source: Challenge.gov

G (public seeker) to Showcase (not broker) to B (private broker) to B (private solutions holders).

An interesting example is provided by Enel, a large Italian company. Enel is a public company acting under the EU directive on public procurement. Its "open innovation" initiative is organised in two layers:

a) through a "showcase" website (an ad hoc platform managed by the same company) Enel show challenges and attract potential solvers.
b) The model outsources to a private provider (InnoCentive) the brokerage function.

The award to the solution solvers access potential solvers is typically under EU procurement threshold). After an initial intermediation the "showcase" platforms provides for the "potential for possible collaboration with the seeker after the challenge"17.

Fig. 1.7. Example of Business/Government to Business (private broker) to Business IPPB model

Source: Openn-Inovability.com

G (public seeker) to G (public broker) to B (private solutions holders): An example of public innovation broker is promoted by the Italian Government though the web platform *AppaltInnovativi.gov.it*[18]. This is a Public Innovation Broker service provided by a public entity under

[17] https://openinnovability.enel.com/projects/

[18] https://appaltinnovativi.gov.it/

EU Public Procurement Directive. The platform is active at the national level but also actively engaging with regional and local stakeholders[19].

Fig. 1.8. Example of Government to Government (public broker) to Business IPPB model

Source: AppaltInnovativi.gov.it

[19] https://appaltinnovativi.gov.it/il-portale

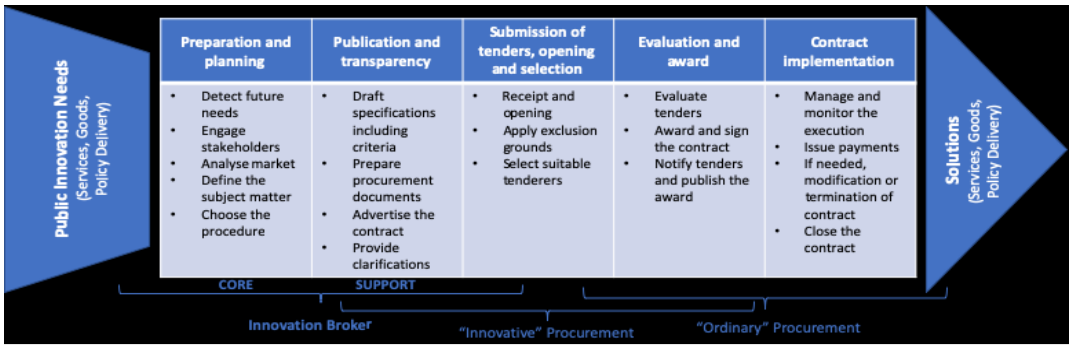
2 Why and how: IPPB functions and features

2.1 Aim and function of 'brokerage' in public procurement innovation

Innovation brokers in the context of public procurement are defined by the European Commission (EC) as those agents, either formal or informal[20], responsible for improving "the effectiveness and efficiency of public services and address their challenges and needs" (EC 2014, p.9)[21] in line with the EU Procurement Directives. Innovation public procurement brokers have in fact *"the capacity and purpose to match nascent innovation with a need on the demand side. The broker can be part of the overall innovation life cycle and a driving force behind the innovation procurement. It can be actively engaged in funnelling ideas from potential suppliers of innovation to networks of potential public buyers of innovation, be it cities, hospitals, civil protection authorities or any other relevant public buyer. Inversely, it can communicate to the relevant industry the needs of the public buyers. Innovation brokers can also facilitate the preparation of innovative ideas for specific public procurement procedures*" (EC 2018, p. 28)[22].

In doing so, innovation procurement brokers provide an essential (pre)procurement function for public authorities and cities. Such a function is instrumental in strengthening public authorities' ability of mediating between innovative procurement needs (in services, goods and even policy delivery) and available services providers, which expertise may or may not be at immediate and direct disposal of the public bodies. Innovation public procurement brokers could play in fact a pivotal role in supporting the "preparatory and planning" phase in the procurement of innovation for public entities (see Figure 2.1 for the specific stage in which this phase is positioned within the innovation procurement process).

Fig. 2.1. Intermediation of Innovation Procurement Broker: pre- and early-procurement stages



Source: Elaborated on EU Commission (2018)[23]

[20] Organisations acting on behalf of public bodies or dedicated public organisations charged with this activity.

[21] Commission Guidebook: "Public Procurement as a Driver of Innovation in SMEs and Public Services".

[22] Commission Notice: "Guidance on Innovation Procurement" (May 2018).

[23] https://ec.europa.eu/regional_policy/sources/docgener/guides/public_procurement/2018/guidance_public_procurement_2018_en.pdf

This is an essential function in purchasing and delivering public innovation. As described by the EC Guidelines, in fact, “the preparatory phase of a procurement procedure aims to design a robust process for delivering the required works, services or supplies. It is a crucial stage of the process, as decisions made during this phase will shape the success of the whole procedure” (Ibid., p. 16). Procurement of innovation in fact implies dealing with a market and/or solutions which are not necessarily well known, as well as services and/or good requirements which may even be relatively unclear to the procurer (for example in case of complex service-delivery needs).

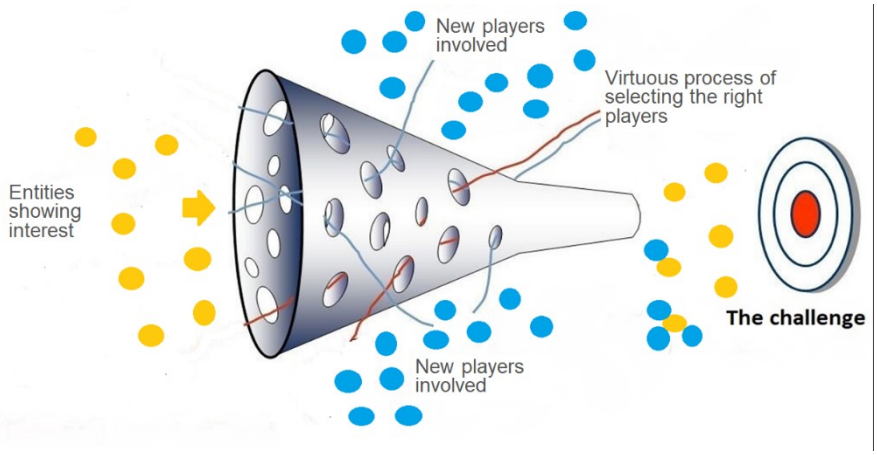
As a result, “contracting authorities increasingly employ dedicated procurement officers, particularly when conducting complex, risky and high-value public procurements. This increasing professionalization of the procurement function is considered best practice” (Ibid. p. 17). This is exactly the role of Innovation Public Procurement Brokers, an established figure in private procurement, but a relatively novel function in public procurement.

Referring to the responsibility for the implementation of an open innovation model in the public sector, IPPBs main objective is to “set up” and make the “leaky funnel” (see picture below) work in the real context:

- make public needs widely knowable and attractive for all the public sector
- engage the market and attract the solution seekers
- favor the teaming up among seekers or providers
- filter solution providers
- organize the procurement procedure into sequential phases/stages of any project.

The following picture shows the open innovation process implemented by Innovation Brokers. The broker aims to connect and select the operators involved in the public procurement process. At the end of the process of searching for and selecting the demonstrators of interest, the Brokers as a result, will have a number of experienced and selected operators who will face with the public body the challenge of providing the best innovative result.

Fig. 2.2. Open innovation proces



In this case, the broker must develop and deploy the "funnel" and the challenge will be the expression of the needs of the PA. The IPPB acts for public entities that are part of a larger and more connected community. For this reason, the broker's work will be both that of a subject that allows an aggregation of the market demand, and will allow the identification and involvement of possible public stakeholders that could support the process and make operational the needs at the regulation or legislative level.

In addition, the Broker answers to public bodies. It does not work in a competitive market of demand., approach in the market, but in a collaborative one. This step is fundamental in the field of transparency. A private broker can be subject to the confidential (anonymity) requirements of private bodies acting in a competitive market. A public broker, on the other hand, is free from this point of view and this makes it more effective in its action of supporting the solution seekers.

2.2 Core tasks for innovative public procurement brokerage

As part of the preparatory phase, an Innovation Public Procurement Broker can provide support for:

1. Engaging with their primary “clients” (demand side) and further detecting the emerging needs;
2. Engaging with additional relevant stakeholders to specify possible options and clarify the available solutions,
3. Further engaging with the market (supply side) so to investigate on the commercial availability of foreseen solutions;
4. Further defining the subject matter and specifying the most feasible procedures for (innovative) procurement to be pursued by the procurement offices.

In this respect, the IPPB is not necessarily managing the tender and procurement process, that can be left to the contracting authorities that are completing the purchase. Nevertheless, when preferable and/or requested, it is possible for an IPPB to support the entities in the end-to-end procurement process.

These are all critical aspects that deserve some further clarification, as also discussed in the EC 2018 procurement guidelines (Ibid. p. 17-45):

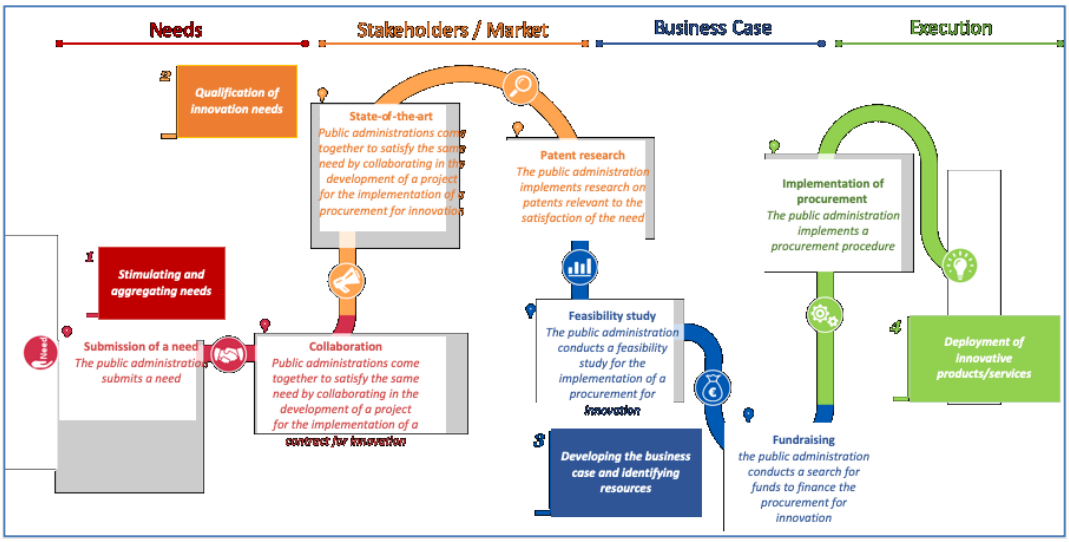
- **Assessment of needs** – in a preliminary phase the broker is instrumental to discuss and assess the specific needs of services and/or requirements to carry out an activity of public interest, so to anticipate the functional requirements of works, supplies or services they will satisfy the need, while enabling contracting authorities to take into account other considerations such as potential environmental, economic and social impacts when specifying their needs;
- **Engagement with relevant internal and external stakeholders** – as an essential phase to further assess the actual needs and the relevant opportunities offered by the market, the innovation procurement broker allows to properly identify and engage with relevant internal and

external stakeholders. In doing so the broker allows to gather the critical mass in terms of competences and skills with respect to the specific needs discussed in the preliminary stage;

- **Analysis of the market and screening of available solutions** – Once the clear needs have been identified and the relevant expertise identified and mobilised for a full assessment of the potential solutions, a market analysis should be provided. The analysis is in fact instrumental to gain prior knowledge and understanding of the potential solutions available to satisfy the needs, and further focus and define the subject matter and the budget of the contract, by ensuring the best value for money and applying the principle of sound financial management.
- **Definition of the subject matter and identification of the most suitable procurement procedure** – As a final phase, and by building on the actions promoted so far, the broker support allows to specify the subject for the procured services (including through the definition of a business case), while suggesting the most appropriate procurement procedure amongst those available, as an input to the Procurement Office.

Based on the tasks described an overall process in the core function of the broker is illustrated below.

Fig. 2.3 Phases in the support provided to administrations by public innovation brokers



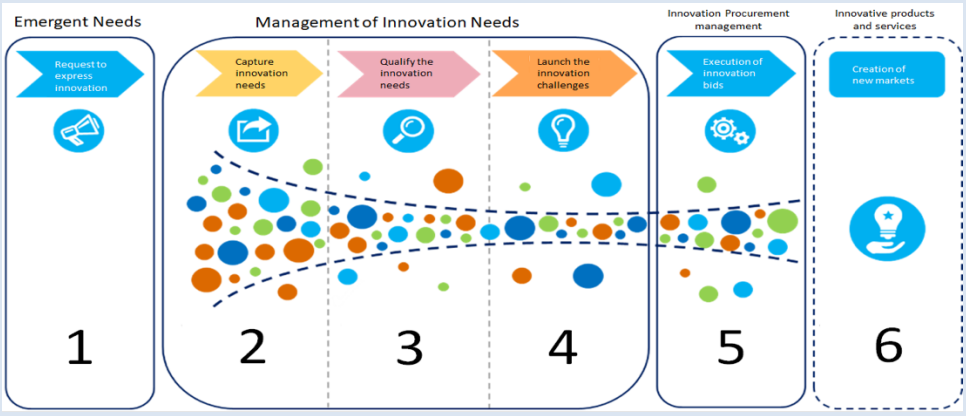
The approach to put forward across the various phase described varies depending on the level of novelty and complexity of the problems faced and solutions required. The role of procurement innovation brokers therefore becomes increasingly relevant with respect to more complex and innovative procurement needs and requirements, as it allows to set-up and manage complex process that goes beyond the purely administrative process of innovative procurements and beyond the direct competence of Procurement Offices.

Example of the practical work of a Public Procurement Innovation Broker

Typically, the IPPB covers phases from 1 to 4 in the figure below, leaving to the contracting authority the phases 5 and 6. A short description of each step is the following, based on the example of Italy:

1. The IPPB publishes periodically (once or twice per year) a public solicitation, to administrations, to acquire the emerging demand for innovation;
2. After a quality and coherence check of the demands, the IPPB starts the aggregation of public demands to understand the public relevance of the need;
3. Independently or with partners, a feasibility study and a large, open, public market consultation are performed. The output of the consultation, including recording of public consultations are published
4. The IPPB transforms the needs into challenges and publishes them on the portal, after having granted an appropriate funding to cover the IPPB process;
5. After this first iteration, if requested, the IPPB sets up PCP/PPI tenders;
6. Solutions generated are available on the market and can be purchased by interested solution seekers.

Fig. 2.4 Innovation funnel timeline



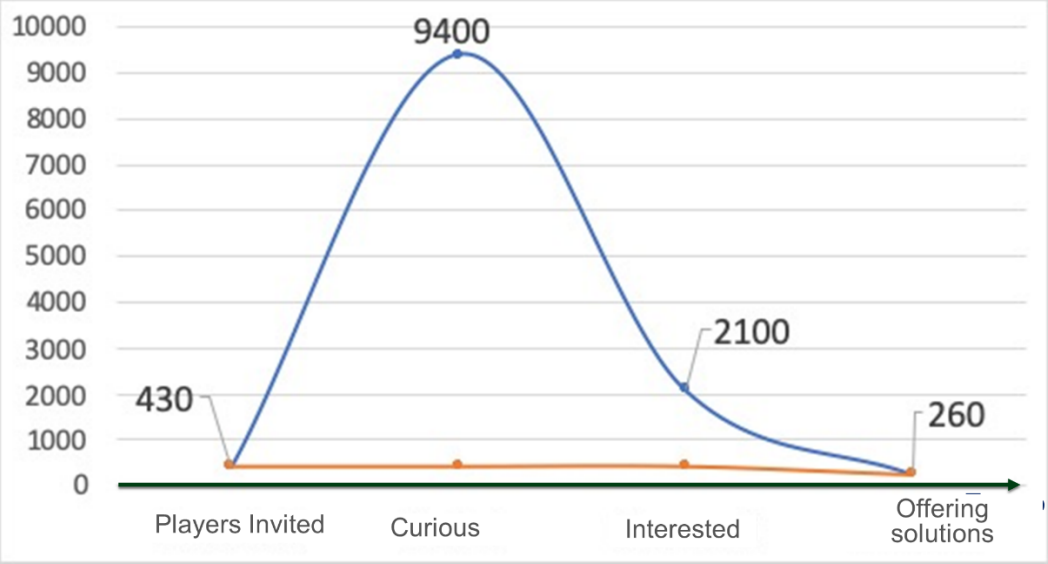
Source: AGID – Agency for Digital Italy (2018)

We can use the picture above to simplify the three main functions of an Innovation Broker:

1. Spread the request for solutions by the solution seekers (the megaphone in the picture above)
2. Engage the solution providers and invite them to join the process (the leaky funnel nose). See also the picture below to understand the extension of this function)

3. Select the best solutions

Fig. 2.5 Number of players in innovation procurement process



In the public sector, as an example, the solution seekers are mostly public institutions. These institutions are operating in a not competitive context, or highly collaborative indeed. Usually, every public entity is part of an institutional system or community including other public entities. By example, an hospital is part of the National health system, a school is part of a national educational system and, at the same time, of a local community., and there is a prevalent collaborative approach in each of these systems.

The innovation broker, in a G2B context, is potentially freer than its private counterpart, because it is not bound into boundaries (industrial intellectual property, industrial secrets and strategies) and it can turn the transparency into a strong advantage,

The public innovation broker can have also additional “roles/duties” that typically its private counterpart is not required to do:

- Aggregating the demand for innovation across multiple seekers (institutions, hospitals, municipalities, schools, etc…)
- Intermediate with regulations, laws and policy makers in order to nurture the adoption of the best solutions obtained. As an example, if the best solution is requesting drones that can’t fly over certain areas, the public broker can start a public process with the flight regulations agency to re-define the laws and make that solution possible. This role can obviously be exercised in the G-G-B case and not in the G-B-B (since changing the laws can bring to unfair advantages for private operators).
- Seek for funding streams
- Plan the deployment of innovation processes, coordinating the procurement at central level

- Nurture the re-use or adoption to different contexts of the solutions already approved, optimizing the use of public funds and avoiding the duplication of processes and initiatives.

2.3 Different models emerging in addressing specific procurement needs

The function of Innovation Public Procurement Brokers is ultimately to expand procurement practices of any public authority beyond the most commonly adopted ('traditional') routines so to provide access to, or adoption of, innovation. In the context of EU Directives, 'innovation' means "*the implementation of a new or significantly improved product, service or process, including but not limited to production, building or construction processes, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations inter alia with the purpose of helping to solve societal challenges or to support the Europe 2020 strategy for smart, sustainable and inclusive growth*" (EC, 2014, Art.2(22))[24].

But innovation needs may vary from new products/services, policy delivery processes and/or markets/suppliers, and may imply a range of different challenges to be addressed. An overview of the different aims, targets, needs and possible approaches is illustrated in the table below.

Tab. 1. Overview of various aims, targets and approaches in the function of procurement brokers

Aims	Target	Needs	Approach	Focus
Accessing innovative products and services	New Products / Services	Clear ideas on what is needed, but no specific products/services available on the market	Exchange amongst a (relatively broad) range of providers and users in certain services required	Market dialogue
Identifying innovative ways of achieving policy goals	New Policy delivery / Processes	Clear ideas on the policy objectives, but no specific understanding of the most efficient/effective means to achieve them	Engage amongst stakeholders across the (broad) areas of expertise relevant for the policy	Inter-stakeholders dialogue
Expanding the range of current suppliers	New Markets / Suppliers	Clear view on the need to involve new segments of the market, but no understanding of how to do so in respect of procurement rules	Engage amongst a range of potential suppliers and beneficiaries in area(s) where support is required	New-suppliers involvement

[24] EU Directive 2014/24 on Public Procurement, p. 2.

Approaches in addressing such needs varies, depending on the level of understanding and awareness of its direct clients as well as the level of complexity of the innovation needs and the kind of innovation services/products required. These are illustrated in the following *idea/typical* examples[25].

A first approach reflects a supporting role for public authorities of the broker in specifying the services' needs. This approach is adopted in cases where authorities have clear understanding of their needs, but there is a lack of products and/or services available in the market. The broker is also instrumental for the public authority for accessing up-to-date technology and/or innovation providers. In this case, the broker must exchange amongst a large range of providers and users of the services needed.

Access to new services and products for landscape management and water waste

New device for signaling water waste in aqueducts

Due to the increase in losses in the municipal water distribution networks and in the percentage rate of losses (meant as the volume of losses in relation to the volume injected into the networks), managing authorities need a device capable of monitoring the status of public water systems in real time and of detecting any water leaks. This new product would allow administrations to intervene more easily in the event of malfunctions. The role of the broker is thus to invite companies to create a solution, not yet existing in the market, to improve the environmental sustainability of the water networks. Brokering seeks and requires specialised industrial research and experimental development functional for the realisation of the new device.

New services for landscape management for small municipalities in mountain areas

In recent years, due to a severe landslides issue, with very often disastrous consequences for the morphology of the territory and the safety of people, a need for a monitoring and early warning system has occurred in small municipalities in mountain areas. As the risk-mitigation measures implemented to date have often proved to be insufficient to guarantee the safety of mountain settlements, a new service for landscape managements is required. It should look at and take into account innovative solutions that allow, on one hand, to mitigate the geological and hydrogeological risk and, on the other, to monitor all the aspects that contribute to the triggering and occurrence of landslides.

In this context, the innovation broker should organise expert consultation for an analysis of the specific needs and technical specification for possible solutions,also through the active engagement with the sectors related to industrial production. The selection of innovative procurement procedures must be suitable and adapted to the solution of the need. The priority objectives of the challenge are 1) a monitoring system for gathering data and producing

[25] The examples are based on real-life cases but are anonymised to preserve the privacy of the specific stakeholders.

knowledge; 2) risk mitigation, meant as its proportionality between the undesired effects expected and the probability of occurrence of the event that causes it; 3) increase in the availability of economically significant infrastructures. The solution should take into account environmental, landscape, economic, institutional and social sustainability in order to ensure the conditions for safeguarding public safety.

Source: Fictional examples based on real-life cases

A further approach consists in opining up the competition for relatively standard services to a wider range of providers. By doing so, the broker favors efficiency and innovation in services purchased for the managing authority. This approach is adopted in case of clear ideas on the policy objectives, but no specific understanding of the most efficient and/or effective means to achieve them. Thus, the approach to identify the services needed involves engaging amongst relevant stakeholders across the areas of expertise required and relevant for the policy to achieve.

Access to new ICT providers for small municipalities

A new system to dispose of sludge in urban sewerage networks

To anticipate possible issues which could arise due to the foreseen increase of sludge production deriving from the treatment of urban wastewater, brokerage is required for the development of a solution that allows reducing and reusing sledges. The treatment and the final management of them represents one of the major criticalities of the purification plants, both for the very high costs (mainly due to the final operations of disposal and/or off site-recovery) and also for the difficulty of finding areas suitable for such operations within the municipal territory. The realisation of a new system, which would allow to minimize production, improve quality and make easier the urban wastewater treatment and purification processes, would ensure efficiency and innovation. The broker would thus facilitate finding solutions on the market to manage the increase in the production of sludge.

ICT models for the development and management of services in small municipalities

Digitalisation of small municipal administrations requires simple and effective solutions, which can be used by employees with a low ICT specialisation. The role of the broker is thus to identify these cost-effective solutions, which must be characterised by adaptability, simplicity of activation, management and use. The new information system, identified as solution, must make use of Cloud technologies for the front- and back-office of the local public administration.

Source: Fictional examples based on real-life cases

A more complex approach implies the assessment of options available for new policy needs, based on access to global network of scientific and market stakeholders. This approach is chosen when the managing authority has a clear view on the need to involve new segments of the market, but it lacks an understanding of how to do so in respect of procurement rules. The approach used involved the

engagement amongst a range of potential suppliers and beneficiaries in the area(s) where the support is required.

Access to new social policy delivery systems in small municipalities

Virtual reality for autism treatment

Small municipalities had the need to innovative solutions to allow the delocalisation of assistance services for subjects affected by autism and their families, in order to guarantee an alternative to the hospitalisation. There is a lack of adequate funds for welfare and the necessity to investigate possible alternative solutions (e.g. augmented reality and remote access to services via ICT). The broker needs to identify innovative solutions (products, services or processes, which are not yet present in the market), in terms of virtual reality technologies, addressing people with autism. The role of the broker is to support in the discussion with national scientific authorities on new services and innovative policies options. The identified solution will improve the service offered and must be cost-effective.

Source: Fictional examples based on real-life cases

2.4 Innovation Procurement Brokers in Urban contexts: a specific topic

Following the contextualization demanded by the activity of the Urban Agenda, we also need to dedicate a proper space to the Urban / local contexts, when coming to Innovation and Procurement brokers.

We shall answer to the following questions:

- Which are the specific conditions of urban request for innovation procurement?
- How much is, in terms of value and number of “deals”, the urban context?
- Are larger or smaller cities most asking for innovation procurement brokers?
- How much is the local territory relevant in the innovation requests?
- Which are – if any – the differences in the innovation procurement process and results, between urban contexts or regional/central/national contexts?

- A first reflection we can make is that in the urban context, it is becoming relevant the territorialisation of policies, and the seek for social impacts and tangible benefits for citizens.

In order to have a reference and some data to imagine the role of an IPPB in the Urban context, let’s see some data coming from the real world. These graphs represent a summary of the challenges of innovation procurement divided by the area from which the challenge is launched.

The same data presented above can be highlighted in the following charts. The first shows the distribution of challenges between urban contexts and non-urban ones, while the second explodes the breakdown of the urban needs:

Fig. 2.6 Distribution of challenges between urban contexts and non-urban ones

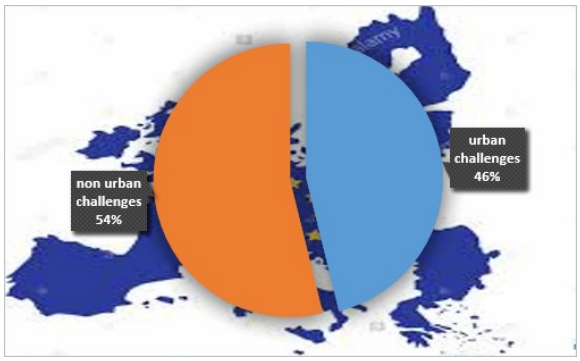
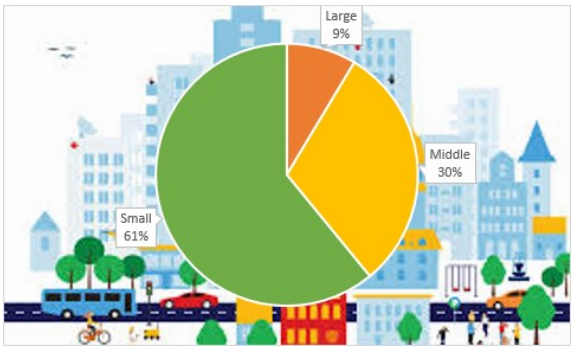


Fig. 2.7 Breakdown chart of use of IPPB function by scale of the city



Even if the data collected so far for this analysis is not a large pool and maybe not statistically relevant, it is based on a real experience in Italy.

This condition is suggesting us that small and middle sizes cities can rely more on a public IPPB than large cities, since the latter can count on a stronger attractiveness (due to number of public calls/bids, the total amount of the budget allocated and generally a better “exposure” in terms of marketing and communication). Other cities are less capable of attracting solution providers and sometimes they lack specific skills to manage complex innovation procurement procedures.

In this context, a public (and maybe central/national) IPPB can be a very valuable asset for cities below the 1M inhabitants threshold, helping them to aggregate the needs, bundling together different parts of complex solutions, scale the availability of innovative solution across the seekers, making a more efficient use of public funds.

This further analysis allows us to have a clearer picture of who could benefit from an Innovation Procurement Broker. In the light of the available data, in fact, as many as 30% of the cities that use this tool are medium sized and represent the cities to which the document of the Urban Agenda is addressed. In addition, middle sized cities, together with the largest ones and with the central (regional or national) IPPBs, can act as hub for the smallest cities.

2.5 Concrete performance indicators (KPI)

The importance of Performance Indicators is very well known. They will be used to monitor the impact of the Innovation Procurement Broker and steer the initiatives it will manage in its normal functions.

Basically, the KPI are used to measure the engagement of the involved stakeholders, the outputs of the public procurement tenders and the overall results, based on the needs from the Public administrations.

Let's take into consideration also an important factor, that is expressing more the importance or the advantage of having public innovation brokers.

In the public sector, it's common to have not only KNOWN-UNKNOWN contexts (i.e. I know that I have a need and I need to find the best solution, that is unknown at the beginning of the process) but also UNKNOWN-UNKNOWN, since for many public institutions also the initial need is not well understood. Additionally, for many contexts where the public institution asks for solutions, we haven't KPI defined yet since we are looking for non-monetary impacts: social impacts, inclusion, social equity, mitigation of unfairness, etc, that can be guiding principles in the finding of a final solution.

There are many examples of KPI that can be applicable in the case of an Innovation Procurement Broker (IPPB), and we are listing some of them in a moment. But a first reflection is needed. In fact, we should make a distinction between the role and the objectives of an IPPB in the private sector and the differences with the objectives of a Public IPPB (IPPB) we are considering in the present document.

The first is easier to be defined, since the private market dynamics implies KPIs measuring the financial efficiency, the rate of successful tenders over the announced ones, the total savings obtained, etc. The performance of the IPPB can also be assessed towards other areas of achievements, including the oversight of total investments in innovation bids, the dissemination of innovation policies, the harvesting of needs for innovation emerging from the public administrations.

If we stick to the dual role of the IPPB as a service provider for the government (or central and local institutions) and also as a support function to policymakers, we can bring some examples from other countries outside EU, that set objectives of performance as percentages of the GDP to be invested in innovation through public tenders sustaining research, development and innovation marketability.

USA announced the will to spend $50bn (2,5% of their GDP) in R&D bids. South Korea wants to spend 5% of the public funding resources in nurturing R&D and 20% in innovation tenders. In Europe, we have targets at national and at local/regional levels[26]. Generally speaking, the percentage of public initiatives' budget allocated to innovation tenders ranges between 2% and 5%, even if some administrations announced a higher budget allocation. For instance, the city of Gand reserved 10% of the ICT funds to sustain research, development and innovation[27].

Building on our first approach discussed, we can identify 4 sets of IPPB Key Performance Indicators:

[26] https://ec.europa.eu/digital-single-market/en/news/innovation-procurement-initiatives-aroundeurope

[27] https://www.digipolis.be/sites/default/files/20140929_DO_charter%20pdf.pdf

- **Demand Harvesting**: this group measures the emersion of the demand for innovation at public level. It can be expressed as number of needs expressed through the IPPB platform;
- **Market Engagement**: it can be expressed as number of market players involved in the full cycle of the challenge;
- **Political Commitment in Innovation**: it is the ratio of funds allocated for the innovation programs over the total budget for public tenders;
- **Executive capacity**: measures the successful tenders managed by the public administrations, and indicated the efficiency of the public administration in using the innovation funds.

We can now propose an initial core set of indicators, from across the four sets of KPY listed above:

- Number of innovation procurement needs/challenges published on the IPPB portal;
- Number of public administrations that agrees the need/challenge proposed on the portal;
- Number of market players and economic operators involved in the market consultations;
- Number of market players that responded to challenges or joined a public tender process;
- Financial resources allocated on innovation procurement projects (relative and absolute values);
- Percentage of innovation procurement deals over various types of procured goods and services;
- Overall (in/direct) impacts in terms of socio-economic and environmental benefits generated.

Of course, those indicators and related measures should be further discussed and tailored on the basis of the specific practices and the extent to which those (instead of other possible ones) could be measures through time. Impacts indicators are also particularly challenging to set and actually measure, and this is well understood, but we nevertheless stress here the relevance of those.

An overview of some of those indicators and related measure is provided in the figure below, as a source of inspiration. These remain critical strategic and operational issues to be discussed internally as part of any IPPB practice.

Fig. 2.8. Overview of basic indicators and measures to be adopted for the monitoring of performance

Indicator	Measure
Number of needs to which an effective response is given	*Number of needs expressed by the public administrations and* ***identification of the call for tenders and purchase of the supply of products/services****.*
Number of economic operators involved during the entire life cycle of the challenge	• *For the state of requirements,* ***the number of adherents to the published requirements*** *is measured;;* • *The state of consultation is measured* ***by the number of operators expressing an interest in the prior market consultation*** *(registered in the consultation);* • *The status of the contract is measured by (1)* ***the number of unique visitors to the tender page, (2) the number of downloads of the tender documents*** *and (3) the* ***number of bidders****.*
Quantity of economic resources allocated for innovation procurement.	***Financial resources made available for the promotion of innovation procurement.***
Total value committed in calls for tenders for innovation	*Monitoring of the economic resources committed to the publication in Italy of calls for tenders for innovation.*
Final impacts in terms of social, economic and environmental returns of the contract	*Monitoring of social, economic and environmental impacts (based on indicators defined in the business case (specific with respect to the contract and the problem it implies - e.g. social services, employment, companies involved, environmental impacts)*

3 Recommendations for effective IPPBs

3.1 Compliance with the EU principles and directives on procurement

It is clear that the function of Innovation Procurement Broker should be carefully executed when it comes to public procurement challenges, as these are managed in a specific and strongly regulated context. Differences between public and private IPPB models should be clearly stated.

In a B2B context and generally in the private markets contexts, the need for (private) innovation brokers is widely validated and the advantages and positive impact of these intermediaries is proved. Innovation focused ecosystems are thriving thanks to open innovation paradigms, technology transfers, brokers acting at higher TRL (technology readiness level) between R&D centers and companies. When coming to the need for a G2B (government to business) innovation broker, the situation is not linear. Someone may think that a public servant should not interfere with private sector dynamics, potentially introducing a disturbance (these objections needs of course to be considered when defining the IPPB processes).

We believe that, specifically because the benefits of IPPB in the private sector are so well proven, the public sector needs to have and needs to leverage on the same advantages granted for SMEs and larger organizations. As it will be more evident in the document, the public IPPB will have positive impact not only on the specific KPIs of a procurement broker, but will impact also on the institutional approach and strategy towards economic and efficiency development of the Country (if not on the entire EU) and improves sensibly the citizens' quality of life and sustainability.

The specific regulation for Public Procurement in the EU applies and should be duly addressed. A contribution comes from the Guidance on Innovation Procurement[28], and in particular to the section 3.2 of that document. That sections says: "Innovation (procurement) brokers can help to build or strengthen the links between startups offering innovative solutions and innovative SMEs, on the one side, and public buyers, on the other side. These links are often weak and do not arise spontaneously.

Innovation broker can be any institution with the capacity and purpose to match nascent innovation with a need on the demand side. The broker can be part of the overall innovation life cycle and a driving force behind the innovation procurement.

- It can be actively engaged in funnelling ideas from potential suppliers of innovation to networks of potential public buyers of innovation, be it cities, hospitals, civil protection authorities or any other relevant public buyer. (Market push)
- Inversely, it can communicate to the relevant industry the needs of the public buyers. (Demand driven: this is the recommended approach for public procurement brokers)

Innovation brokers can also facilitate the preparation of innovative ideas for specific public procurement procedures.

Their tasks may include:

[28] Commission Notice C(2018) 3051 "Guidance on Innovation Procurement"

a) Advising public buyers on how to define their needs that could potentially be satisfied through innovation procurement;

b) Organising public buyers interested in innovation procurement into networks to share knowledge, exchange good practice and communicate to the market (e.g. market consultation, joint commitment for future innovation procurement)

c) Identifying promising innovative solutions that are suitable for matching the needs of the public buyers. Typically, such solutions have potential for commercialisation and scaling up of disruptive rather than incremental innovation. Depending on their business model, they can also facilitate access to funding and help manage intellectual property rights.

Innovation brokers should not act as sellers of unsolicited proposals to the public buyers, nor are they substitutes for public buyers. Public buyers remain responsible that the whole procedure – itself engaging with the market before the procurement and executing the procurement – is open, transparent and non-discriminatory."

3.2 Institutional and multi-level design (city, regional, national, EU)

Some considerations can be shared with respect to the potential benefits for cities of the 'innovation brokerage' practices existing at the various territorial levels: urban, (sub)regional, national and EU. It seems that these different levels might be optimal in serving different "functions" with respect to their brokerage activities. A brief overview of those is illustrated in the table below, as a source of reflection for follow-up actions by the Urban Agenda and in relation with the initiative on "Competence Centres".

Tab 5. **Opportunities for cities and possible support provided by the Innovative Public Procurement Broker at various territorial levels**

City level	(Sub)Regional level	National level	EU level
Tailored support to specific needs and challenges in a city and exists (mostly) in mid-large cities	Common support to shared needs and challenges in groups of nearby, mostly low-mid size, cities	Standard support for specific sectors in a country, for which cities (of all size) can become beneficiaries	Tailored support for specific areas of EU-wide priority of which cities could be beneficiaries

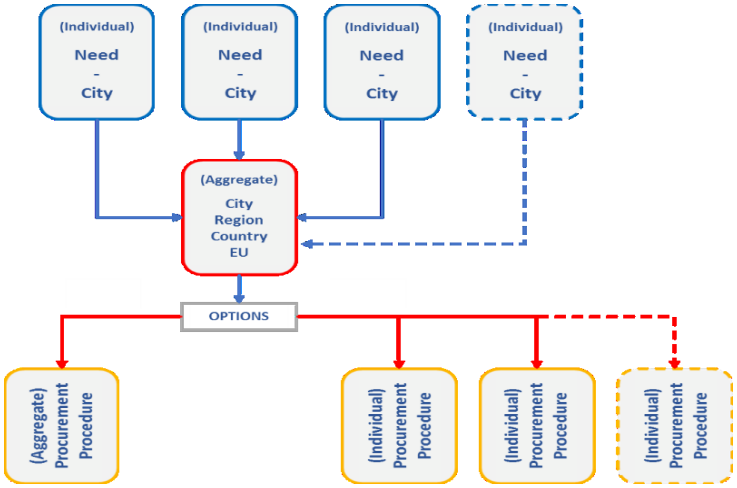
These different levels of territorial approach are all potentially valuable, depending on the type of needs, the level of critical mass in the product/services potentially required, and the level of technical capacity at disposal for individual (or groups of) urban administrations.

- For example, it may be relevant to **foster aggregation of specific needs by city councils** in order to provide more cost-efficient and effective solutions across a single large municipality.
- Similarly, many **small-sized cities may benefit from an aggregate brokerage function** to find common solutions to similar needs (for example through the support of a larger metropolitan city, regions or even country-based brokerage functions).
- If we move one step further, it could even be possible to envisage a common brokerage function for the innovation procurement of large municipalities in need of addressing complex policy needs

across the EU – for example, common climate-change, waste management, or smart-cities solutions could be discussed, assessed and procured jointly.

Aggregated EU innovative public innovation brokerage could allow to operate economy of scales and scope, building on a critical mass of expert stakeholders and financing of ground-breaking innovation for pivotal city-based solutions at the forehead of innovation. As a result of such aggregated brokerage support, in practice, several cities with similar needs may benefit from joint innovative procurement procedures or even single procedures based on common templates – see figure below.

Fig. 3.1 Options in aggregated support provided by brokers at various territorial levels



The above are aspects to be duly reflected upon when discussing developments of Procurement Competence Centres for cities, and how to aggregate territorial needs at the urban, regional national and EU levels. In this respect, it may be helpful to further investigate some of those initiatives presented in the Annex B, so to understand how these could provide concrete indications and suggestions to be streamlined across cities and countries at EU level. This analysis would also be useful for discussing possible challenges they face and which “support actions” or “framework conditions” could be fostered by the EU or other bodies to facilitate their function.

4 Practical “how to” guide to set-up an IPPB

4.1 Starting with an IPPB

A IPPB can have different appearances and approaches. Nevertheless there are a few guidelines, tips and tricks which should be taken in account for an successful start with IPPB. First we give some extra insights in a Q&A from stakeholders and experts. After that we present an step by step plan which can be used as an guide by setting up an IPPB.

4.2 Practical Q&As for implementing IPPBs practices

During one of the Public Procurement Partnership meeting a workshop on IPPB was organised. The main outcomes of the discussion with relevant stakeholders are presented here, as valuable insights to address some emerging doubts of local practitioners charged with – or interested in – the set-up of IPPB as a tool to address their innovative procurement needs.

Innovation procurement requires actions that are not clear yet, how do you compare that with ordinary procurement? In public procurement, the procurer knows the solution they want, so they know whom to address and how. Instead, in innovation procurement you might not know what exactly you want: as a result, it is difficult to know exactly whom to address and how.

Why awarding is often below threshold? It is essential to foresee a sound scrutiny to existing procurement procedure to ensure a practice which is fully compliant with the EU Directive as well as other national procedures and regulations. Legal departments require to specify that Brokering Initiatives should clearly be differentiated from procurement procedures.

How do you help local businesses? In EU practice, up to 5% of public spending is at best addressed through innovative procurement (hence a limited/risky practice). Innovation procurement should therefore address selected strategic issues. Local urban authorities would have limited initiatives in strategic procurement. The role of IPPB can therefore be two-sided: on the one hand, it supports innovation procurement capacity, on the other it sustains local innovation and provide business support to reach policy needs. It is important to consider that specific role of IPPB can be two-fold: start from aggregating and addressing existing challenges and needs, then increasingly act more strategically to foresee, anticipate and screen the potential challenges/ opportunities ahead.

Which is the best level for the procurement broker? The level of intervention depends on the specificities of the countries and regional/local needs, as well as political lead and intention. An assessment of the needed critical mass versus specificity of needs to be addressed is to be assured, so to allow for a best practical level of administrative governance where to set-up an IPPB.

With these aspects in mind we provide now a practical guide for setting up an IPPB.

4.3 Main steps to set-up an IPPB in your area

What are the main steps to set-up an IPPB? While it is essential to provide clear and simple-enough steps to set-up an IPPB to address local needs, we must recognise the elements discussed so far and particularly the need for IPPBs to reflect the institutional specificities and practices existing at any given level of public administration (small versus large cities, provinces versus regions, local versus inter-rational and cross country cooperation). It goes beyond the scope of this section to allow for a very detailed and circumstantiated approach for each of those aspect, as we aim to provide a fairly simplified and general approach, but we encourage users to duly reflect on the specific context in which they operate in order to make best use of this recommendations.

1. *Check, assess and map what already exists (innovation partnerships, projects, challenges tender docs, etc.) also by sharing practices online through websites, etc.*

In this initial step we encourage practitioners to provide an accurate assessment of local needs, challenges and existing practices in the administrative level they work, as well as existing and innovation procurement activities at higher and lower levels (metropolitan areas, local councils, etc.) so to ensure the IPPB could duly reflect and build upon such specificities – in short: avoid duplication and use the strength of existing networks.

2. *Ensure the presence of a consistent legal framework (by acknowledging the EU Innovation Procurement Directive) and act to ensure the compliance with procurement regulations.*

As a relevant second step, based on the contextual analysis, it is important to duly reflect on your internal procurement regulation, and try to understand the extent to which IPPB practise may built upon to set-up IPPB practices, including whether there are certain legal challenges to be addressed in order to make the IPPB approach fully functional – see legal insights as provided in this document.

3. *Define specific needs and assess the most optimal level of activity (critical mass versus specificities in the needs to be addressed by/across cities).*

The third important step is related to the relevant level of action of the IPPB. Should it work at the city level? Can you build upon existing good practices existing at metropolitan level? Is it worth thinking of a provincial/regional IPPB to support a number of similar needs and challenges across small municipalities? These are questions that should be addressed by reflecting on your institutional and socio-economic specificities. There is no preconceptual level of application but the IPPBs should be placed at the institutional level which best allow to build on existing practices and address local needs. In this respect it is essential to understand what the innovative procurement needs and challenges are and then reflect on the best administrative level to effectively address that – and not *vice-versa*.

4. *Assess the possible role of Competence Centres, as bodies to be charged with the IPPB "function" at individual city level or metropolitan/regional levels depending on the needs (e.g. fostering innovation and/or supporting local competitiveness).*

Once the specific needs and the best ideal areas of action for setting up the IPPB are identified, it is possible to discuss the best way so structure the IPPB as a specific organisation. At this level the questions to be addressed refer to the extent to which a new organisation body should be set-up, or whether the IPPBs could be best operated through existing bodies (e.g. procurement offices, etc). In this respect, the extent to which a Competence Centre can be set-up and have a leading role as local/regional IPPB should be discussed – see also the specific UA paper on Competence Centres.

5. Identify and set-up the best-suited set of monitoring indicators (i.e. feasible and fit for purpose).

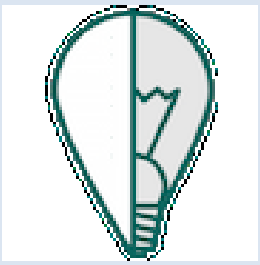
The set-up of monitoring indicator is an essential process for the IPPB, as it should allow to further specify the type of results expected (process outputs as well as overall outcomes). This is a relevant process which should allow to build on concrete measures which can be implemented through time and – possibly – expanded gradually so to include more ambitious and effective measurements. Do remind that indicators which are based on unavailable or difficult to get data remain useless.

6. Identify the most appropriate business models and related stream of financial support (public financing, revenues/fees, levies, else?

IPPBs can be activated through ad-hoc financing (e.g. EU or local/national funds) – see Annex II for some examples of that – but need to be financially sustainable to make a real impact through time. Possible financing models could be based on full public support, as well as a mix of that and levies overall investment mobilised to be retained as a source for financing the IPPBs organisation. These aspects should be duly discussed and the most feasible and effective solution identified, including an initial public support towards greater differentiation of financing streams to be collected through time.

As indicated across the previous steps, it is essential to think in ambitious terms but implement the IPPB through practical and feasible steps. This is up to each administration to decide, but clearly it helps to start from relatively narrow and well-defined challenges and needs, which would allow to focus initial efforts of the IPPB on concrete needs and valuable results. Then it is important to gradually expand the work, scope and ambition of the IPPB work so to include a wider range of stakeholders.

EXAMPLE: Coordinated Innovation Broker in the Netherlands



The Start-up in Residence program connects start-ups and scale-ups with key social and urban challenges from different public bodies in the Netherlands. (https://startupinresidence.com) It started in the Amsterdam Metropolitan Area where the program invites both Dutch and international entrepreneurs to tackle these challenges in collaboration with the local government. Their innovative solutions impact the region as well as its citizens. The program enables municipalities to procure innovations in a way that allows them an active role in the innovation process itself. This is due to the close cooperation with the start-up at every stage of the development of the required solution. Another important aspect is that the legal structure of the program allows municipalities to actually

engage the start-up if it comes up with a valid solution: there is no public tender required. After the start in the Amsterdam Metropolitan Area it has been picked up and the platform/idea is been used in other regions/cities. 5 Dutch public organisations use the platform https://intergov.startupinresidence.com/ already.

5 Conclusions and way forward

This paper aimed at reviewing the main functions of an Innovation Procurement Broker, so to identify its main specificities and assess its value for cities, as well as public procurer at country level and across the EU at large. Information annexed also provides an overview of the extent to which IPPB are currently in place across European cities, as well as possible areas for further support.

As a result, the following main aspects have emerged:

- Innovation procurement brokers provide an essential (pre)procurement function for public authorities and cities, and are instrumental in strengthening public authorities' ability of mediating between innovative procurement needs and available services providers;
- Innovation Public Procurement Brokers play in fact a particularly pivotal role in supporting the "preparatory and planning" phase in the procurement of innovation for public entities (assessment of needs, stakeholders engagement, market assessment, identification of suitable procurement procedures), by providing a specific expertise which may not be at immediate/direct disposal of the public bodies in support and cooperation with procurement offices;
- The function of Innovation Public Procurement Brokers is therefore ultimately to expand procurement practices of any public authority beyond the most commonly adopted ('traditional') routines so to provide access to, or adoption of, innovation – but innovation needs may vary from new products/services, policy delivery processes and/or markets/suppliers, and may imply a range of different challenges to be addressed;
- Approaches in addressing such needs varies, depending on the level of understanding and awareness of its direct clients as well as the level of complexity of the innovation needs and the kind of innovation services/products required – and so varies the type of support provided;
- A range of practices exists in Europe with respect to the activity of innovation procurement brokers, although often at private sectoral and industry level (e.g. medical sector and supply of innovation for hospitals), but with a growing range or experiences related to broader public procurement needs across at EU, Member State, regional and city levels;
- With respect to cities, the role of brokers in public procurement innovation is still relatively underdeveloped, with experiences often reflecting the definition of strategic needs but no clear link to the procurement procedures – the role of procurement brokers is currently limited;
- And yet the potentials for the support provided to city in maximizing the use of procurement practices to foster innovative solutions even at the policy delivery level are extremely high, with different levels of "aggregation" of urban needs which might be optimal in responding to different needs and levels of capacity at urban, (sub)regional, national and even EU levels;
- If we look at strategic challenges to be addressed at EU level but with concrete policy responses which are deeply rooted at city levels – common climate-change, waste management, digital innovation, etc. – it could even be possible to envisage a common EU brokerage function for the innovation procurement of municipalities in need of addressing such complex policy needs.

- Further support is required to spread common knowledge of the functions and benefits of procurement brokers for cities, to address the current limitation in the practices existing at city levels.

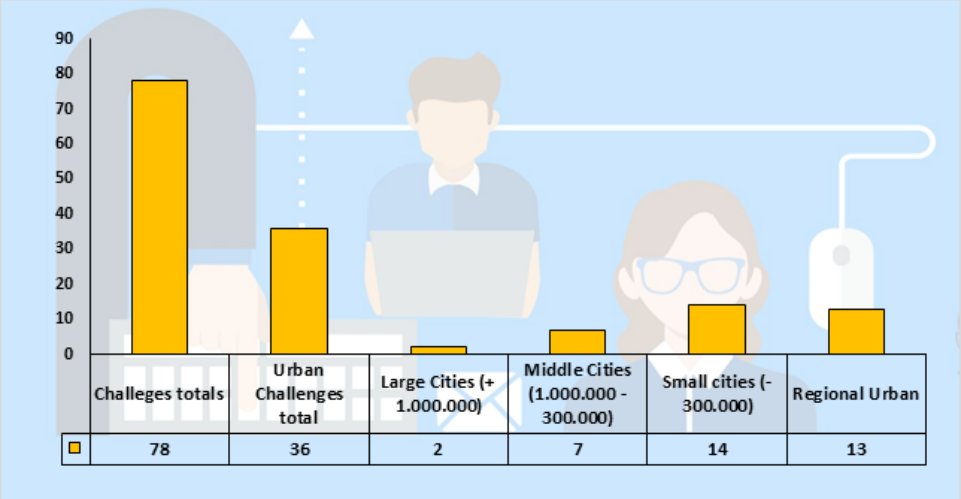
Support provided by other initiatives promoted by the Urban Agenda, including Competence Centers and Strategic Procurement, may also help in fostering the common knowledge and adoption of such essential practices throughout European cities.

6 ANNEX A: Innovation needs coming from Cities

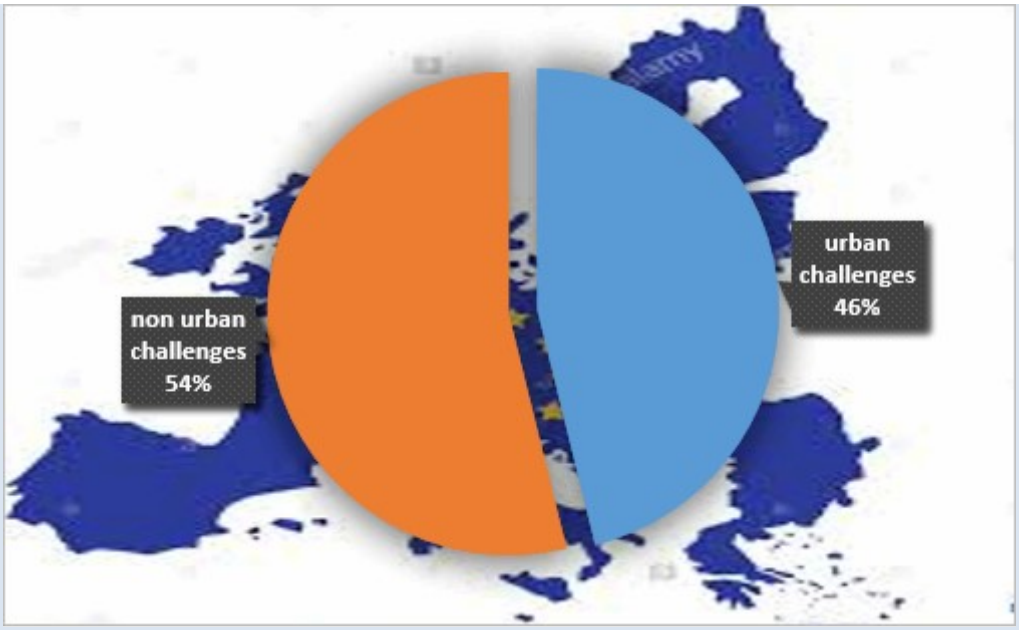
Box 1. EU level – selected 'innovation procurement brokerage' practices at urban level

Innovation Procurement Broker in Urban Areas

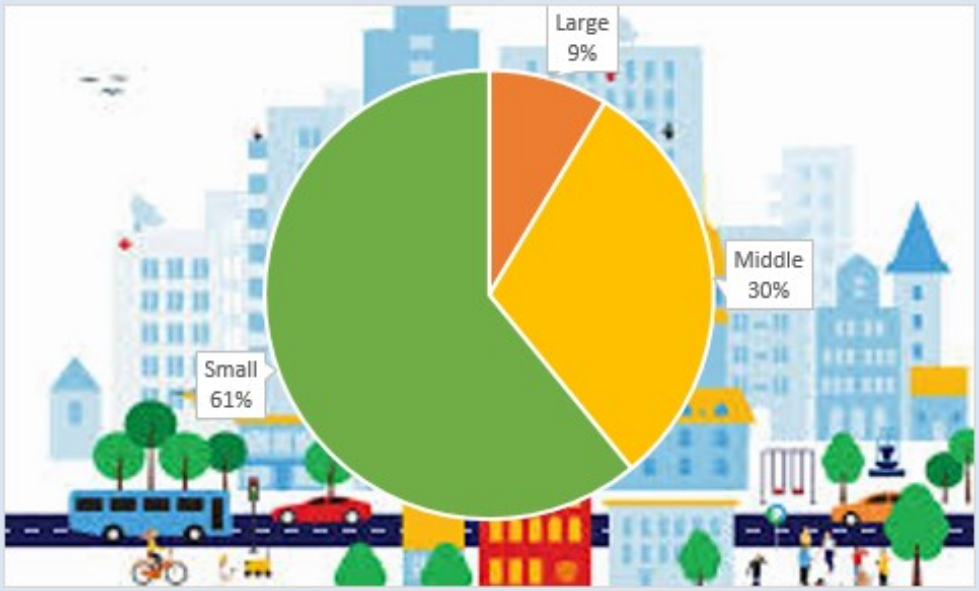
IPPBs collects public demand if innovation. Within the portal it is possible to find numerous challenges launched by public authorities. Of particular interest is the role played by urban areas which are the main actors involved.



With this first graph, we want to find the impact of innovation procurement from urban areas within the challenges of AgID. Of the 78 challenges on the an IPPB portal, 36 concern innovation for urban areas. 2 challenges concern cities with more than one million inhabitants. 7 challenges come from medium sized cities, (i.e. between one and three hundred thousand inhabitants). 14 challenges take place in small towns and municipalities with less than three hundred thousand inhabitants. Finally, in the last pillar was also reported the number of challenges concerning innovation needs that would affect the urban area of cities, but come from regional authorities.



The second graph reports at a percentage level the challenges that concern the urban and the challenges that concern other issues. As we can see, the percentages of urban challenges in the agid portal are 46%.



In the end, with this latest graphical analysis, we divide the 46% of challenges concerning the Urban sphere.. This high percentage of cities involved represents a success in the application of IPPB in urban areas. Going into detail, this graph gives us an effective division of the size of the cities that have supported a challenge to the portal of the IPPB. The percentages identify that a 30% of the challenges comes from medium-sized cities (subject of the Action Plan fro Urban Agenda). The percentage of challenges higher concerns instead municipalities or small cities, with a percentage of 61%. Finally, the challenges from cities that exceed one million inhabitants and therefore we consider "Big Size Cities" is 9%.

7 ANNEX B: Overview of practices (urban, national, EU)

7.1 Practices related to innovation brokers across the various functions

A range of practices exists in Europe with respect to the activity of innovation procurement brokers, although often at private sectoral and industry level (e.g. medical sector and supply of innovation for hospitals), but with a growing range or experiences related to broader public procurement needs across at EU, Member State, regional and city levels. With respect to cities, particularly, the role of brokers in public procurement innovation is still relatively underdeveloped, with experiences often reflecting the definition of strategic needs but no clear link to the procurement procedures. As a result, the role of procurement brokers in cities is currently limited.

Nevertheless, based on the examples collected and reviewed, some general considerations can be provided on the relation between the aims of the initiatives, (territorial) level of activity, type of stakeholders involved, as well as revenue models and sustainability through time. These are briefly illustrated in the table below.

Table 4. Cross-analysis of the main characteristics of initiative identified in a range of key features

Aims	Level of activity	Involved stakeholders	Revenue model	Sustainability
Accessing innovative products/services	Examples involve particularly sectors (e.g. health) and often promoted at inter/national level	Sectoral suppliers and authorities needing the services (typically hospitals)	No clear fee-based model seems to emerge from the analysis so far City-level Initiatives are often if not entirely "project based"[29] (often EU-funded), therefore relying on external (limited) budget National-level initiative instead seem to rely on	Sustainability of initiatives reflects the characteristics described for their "revenue model" City-led initiatives are often limited in time (project-based) National initiatives have a longer-term scope, as they are often embedded into permanent structures (National Agencies or
Identifying innovative ways of achieving policy goals	Examples are strongly promoted by cities (through Urban Lab), but also exist at regional/national level	A range of actors including authorities representing their (policy) needs, suppliers and often citizens or end-users		

[29] The initiative in Reggio Emilia explicitly mention its attempt to set-up more sustainable « revenue models » in the longer terms, but no specific advancement is visible at the time being (relatively early stage of the initiative).

Expanding the range of current suppliers	Examples are represented across all territorial levels	Actors involved are usually Small and Micro Enterprises but also other possible service providers (such as Citizens society organizations, Universities, Public Research Bodies, etc.)	more “permanent” structures (Agencies or internal Programmes) funded internally by the relevant bodies	Sectoral Programmes)

Building on the taxonomy previously described a wide range of practices could be possibly identified, although such practices are not always specifically labelled as ‘brokerage’. For the sake of efficiency and given the available timeframe, we propose to focus on some selected examples across the different approaches identified. These practices are described and assessed briefly in this paper, so as to extrapolate the main commonalities and specificities emerging from them, and to act as a source of insight and inspiration for further actions in the Urban Agenda platform. The table below illustrates an overview of the proposed examples, while further details for each are provided in this section. It must be noted that although many practices might fall in more than one single cells in the table, their positioning reflects on the most specific aspects of each compared to the other examples presented – so to ensure that all feature are covered.

Target	City	(Sub)Regional	National/Sectoral	EU
Products/Services			BE, ES, FI, NL[30]	COSME[31]
Policy/Processes	Turin[32] – IT Madrid[33] – ES	Regional Cooperation[34] – IT/FR	AT[35], IT[36], NO[37]	Marine-EO[38]

[30] Healthcare technological services – hospitals in various countries

[31] COSME’s Innovation Procurement Broker

[32] Collaboration proposals submitted by city residents for the management and requalification of local urban areas

[33] City cleaning services programme

[34] Alcotra Projects with Regional Living Labs – Including Piedmont, Liguria, Valle d’Aosta, Province of Turin, Rhône-Alpes, Provence-Alpes-Côte d’Azur

[35] Austrian Centre for Procurement Innovation

[36] Agency for Digital Italy (AGID)

[37] National Programme for Supplier Development

[38] Marine Earth Observation (EO)

Markets/Suppliers	Amsterdam[39], Reggio Emilia[40] – IT	Metropolitan Nantes[41] – FR	NL[42], FI[43]	COSME[44]

Table 2. Taxonomy of practices in the function of 'innovation procurement brokerage' at various levels

Some examples are further specified in the following chapters, as a source of further understanding.

7.2 Practices related to innovation brokerage at the EU level

A first group of 'innovation brokerage' practices are those existing at EU level. Two EU initiatives are presented in this section aiming at fostering innovation in the development of products and services for public authorities across the EU, as well as in fostering the access to public tendering of EU services for a broader range of potential innovation suppliers active in the market, such as SMEs or social enterprises. Examples are illustrated in the box below, to reflect on how EU support can foster procurement innovation.

Box 1. EU level – selected 'innovation procurement brokerage' practices

COSME's Innovation Procurement Broker

The call for an Innovation Procurement Broker tendered by COSME aims at setting up a "sustainable method for the successful facilitation of public procurement of innovation", with particular emphasis on the delivery of innovative solutions and services "related to environmental sustainability and energy efficiency within the European Single Market". To this end, the Innovation Procurement Broker will "bring together and facilitate commercial links between public buyers, suppliers of innovation (with a special focus on SMEs and start-ups), investors, and researchers". More specifically, the actions foreseen for the Broker will include the "promotion and management of two networks of stakeholders in the European innovation eco-system, the advisory role for public buyers on the definition of their actual procurement needs, the definition of innovative products or services that tackle actual needs of the public buyers, as well as recommendations and advices to strengthen the existing knowledge sharing" across all relevant stakeholders. In this context, the InnoBrokers Project[45] is funded.

Source: ec.europa.eu/easme/en/cos-linkpp-2017-2-02-innovation-procurement-broker-creating-links-facilitation-public-procurement

Marine Earth Observation (EO)

[39] Innovative urban mobility solutions supplied by start-up and citizens

[40] Open Laboratory for the identification of innovative services

[41] Corporate Social Responsibility as criteria for public procurement

[42] Erasmus Medical Centre

[43] https://www.oecd.org/governance/observatory-public-sector-innovation/innovations/page/initiativepublicprocurementpromotinginnovationinaustriapppiinitiative.htm#tab_description

[44] Ibid.

[45] http://innovation-procurement.org/fileadmin/user_upload/InnoBrokers/Innobrokers_leaflet.pdf

The Marine-EO aims at procuring the development of demand-driven EO-based services adopted on open standards by bringing incremental or radical innovations in the field of maritime awareness and monitoring. To do so, the initiative acts as an intermediary between maritime authorities (buyers) and prestigious scientific and technical organisations with significant experience in observation and maritime matters (technical advisors). Through such intermediation, the initiative is expected to: i) develop, test and validate two sets of demand-driven services; while, ii) strengthening transnational collaboration in maritime awareness sector by facilitating knowledge transfer and optimisation of resources for the public authorities participating in the buyers group; and, iii) fostering the facilitation of public-private cooperation for the sake of market visibility. By bringing together stakeholders from both supply and demand for such services, so as to observe the problem from different perspectives, the initiative will foster the development of innovative solutions in response to an increasing policy demand for strengthening Earth Observation and Copernicus capabilities.

Source: marine-eo.eu/project-overview

7.3 Practices related to innovation brokerage at Member State level

A second group of 'innovation brokerage' practices are those existing at Member State level. These are typically initiatives aiming at fostering innovation in certain sectors, such as construction or healthcare. As such, they are historically adopted by the private sector (e.g. hospitals) to keep an open dialogue with technology suppliers or are more publicly led in sectors where innovation is essential to foster competitiveness (e.g. construction). Some examples are illustrated in the box below, as cases with a longer history of practice, although in some instances they show recent developments towards new innovative models.

Box 2. Member State level – selected 'innovation procurement brokerage' practices

Preliminary market consultations fostering new technologies in healthcare

Hospitals in the Netherlands, Spain, Belgium and Finland sought the development of a highly interoperable telemedicine platform for tele-detection and tele-care of patients at increased risk of dying from sepsis. To assess the best technological features available and their cost, the hospitals announced a preliminary market consultation through a prior information notice in Tenders Electronic Daily (with the results also published subsequently online). The market consultation was conducted as a series of physical meetings complemented by an online questionnaire. This approach gave hospitals a wide-ranging insight into the current state-of-the-art, it confirmed that the budget foreseen for the procurement was adequate and revealed what additional information was required for a full understanding of the subject by procurers as well as any existing gaps in the market. The subsequent pre-commercial procurement successfully delivered a number of novel algorithms and improved risk-detection solutions in line with the specific requirement of the hospitals, which have enlarged the buyers group for a follow-up procurement to deploy these innovative solutions more widely across Europe and to stay up-to-date on the latest developments in the state-of-the-art technologies.

Source: ec.europa.eu/digital-single-market/en/news/commission-notice-guidance-innovation-procurement-published

Dialogue with cross-sectoral suppliers resulting in innovative solutions to 'traditional' needs

In 2013 the "Erasmus Medical Centre" in the Netherlands needed a beds and mattresses washing facility for cleaning 70,000 beds per year. Clean beds prevent infection-related illnesses and give both staff and patients confidence in the hygiene standards of the hospital. The medical centre was compared with a very limited number of potential suppliers for bed washing facilities and in its market analyses it found only one potential supplier that could fulfil its requirements. As a result, the medical centre started a tender procedure based on the Forward Commitment Procurement principles including outcome-based requirements, market consultation and competitive dialogue. A cross-departmental project team was set-up to examine the needs and issues at stake and a wide market consultation was launched on this basis. The selection process was designed around the innovation capabilities of those interested and less on their previous experiences with bed washing facilities. An outcome-based specification was developed based on the insights gained form the market consultation phase and with the aim to maximise the number of potential consortia that could present their ideas during the 'competitive dialogue' tendering procedure and then be shortlisted in due course. The procurer started with eight participants, two of which made it to the final bid phase. The successful bid was a solution based on high-precision cleaning robots, supplied by IMS Medical, a European SME.

Sources: publications.europa.eu/en/publication-detail/-/publication/f5fd4d90-a7ac-11e5-b528-01aa75ed71a1/language-en

National procurement platform acting as brokers for procurement of innovative policy delivery

The Agency for Digital Italy (AgID) is responsible by law of the development of major strategic research and innovation projects related to the implementation of the Italian Digital Agenda. Furthermore, the Agency can act by law as a Contracting Authority body for pre-commercial procurement on behalf of the Italian Regions and other competent administrations.

In doing so, AgID promotes an open approach to innovation, acting therefore as a broker between the needs of public administrations and the potential wide range of national and international suppliers for the required services and products. In case of highly innovative requests and policy needs, the AgID intermediates this process through on-line and off-line brokerage activities.

In this respect, with the decree law DL179/2012, the Italian government established the cooperation among AGID, MISE (Ministry for the economic development), MIUR (Ministry for the education, university and research), the Agency for Territorial Cohesion and the CDP (Funding for public initiatives) to plan, promote and execute activities fostering the public demand for innovation (pre-commercial procurement, innovation procurement).

As an outcome from the above DL, during 2016-2017, AgID has managed the National Pre-Commercial Procurement Programme in support of the Ministry of Research and University

(MIUR). The Programme accounts for 100 million euros, allocated for 30 PCP projects. In this framework, AgID acts as broker between market operators, public bodies and civil society, harmonizing all processes to produce the final outcome: PCP tender. Early figures of the Programme have shown relevant resonance with over 1000 market operators formally participating to open market consultations. Another interesting aspect regards different background of participants, with 250 big enterprises, 450 SMEs and over 200 public research bodies and universities. Lastly, participation of social associations also has constituted an element of novelty for public tenders. Moreover, this "open" approach has yielded a new model of "public demand driven open innovation", promoting networking and synergies among companies, research bodies and stakeholders.

Then, for what concerns the three published PCP tenders, 400 potential suppliers were engaged through off-line workshops, including some representatives of users of the required services (e.g. care-takers and doctors), while 9,000 operators followed the interactions online, with 1,700 of those downloading procurement requirements and about 300 being grouped into about 90 consortia applying to the PCP calls. The three tenders cover a wide range of topics belonging to very different sectors. They range from new solutions to allow remote and continuous treatment services for people with autism spectrum disorder (ASD) as well as systems to the early warning for natural disasters and rapid organization of emergency interventions.

The new government empowered this strategic plan, by allocating with a decree in January 31st 2019 €50M (fifty millions euros) to deploy public calls for "intelligent demand". By a Prime minister decree DPCM 21 February 2019, the new Three Years plan for the development of information technology in the Public Administration 2019-2021 has been approved. The Plan contains (ref. Chapter 10, section 10.1) strong recommendations for the PA to use innovation procurement processes as preferred. The Plan institutes also the National Platform for the Innovation Procurement, made of two main elements:

1. A platform for the multi-stakeholder agreement management among public administrations, for the whole procurement process chain involved entities: qualification, procurement management, funding, execution.
2. A service portal, targeting the PAs, the R&D centres and the market players.

At present, the platform is managing agreements involving AGID, MISE, MIUR, the conference of Regions, Confindustria (a syndicate for the larger industries in Italy), the Agency for Territorial Cohesion, Puglia Region, Campania Region, Ugo Bodoni Foundation.

AGID set and coordinates the Competence centre for the Innovation Procurement, supporting every public administration especially in the qualification of the challenge, the harvesting of emerging needs and the brokerage innovative solutions. The PAs are supported also in the strategic planning and budgeting of initiatives in the field of innovation procurement.

In July 2019, AGID and MISE signed a five years agreement to foster the execution and the adoption of "Intelligent Demand public calls".

The role of the Agency is therefore strategic in allowing national and territorial authorities in engaging with a wide range of possible new and innovative suppliers to respond to their specific policy needs.

Source: *www.agid.gov.it/it/agenzia/programmi-nazionali/innovazione-del-mercato*

Matchmaking online platforms allowing access to new suppliers

The Austrian Centre for Procurement Innovation has launched a Matchmaking Platform sharing online information, including contact details, on a wide range of different innovative products and services, which are evaluated by independent experts and ready for use by the public sector. The platform also gives public buyers the option of discussing their latest challenges in order to consult the market on new ideas and concepts. In 2018, more than 100 innovative solutions in product categories such as IT, energy, mobility, facility management or health are online and enable suppliers to get in touch with public buyers. In the meantime, over a dozen public buyers have published the challenges they have faced in fields including automation, marketing & PR, sensor technology and facility management. They have received more than 230 different ideas from the market.

Source: innovationspartnerschaft.at and www.ioeb-innovationsplattform.at/challenges/

Public procurement fostering innovative solution to address relevant policy issues

The Norwegian National Programme for Supplier Development is set up to accelerate innovations and development of new solutions through the strategic use of public procurement, while at the same time contributing to new market opportunities for these innovations. The initiative is the result of a joint collaboration by three significant entities with unique strengths, networks and focus areas and representing both public and private sectors – the Agency for Public Management and eGovernment (Difi), the Norwegian Association of Local and Regional Authorities (KS), the Confederation of Norwegian Enterprise (NHO), the Innovation Norway Agency (IN) and The Research Council of Norway (NFR). The initiative acts as a broker amongst several joint procurement initiatives in the areas of health, digitalisation, climate change and brings public buyers together to set a common agenda to confront similar procurement innovation challenges. The involved bodies are supported to identify joint needs to be addressed by innovative solutions and engage market operators and relevant suppliers in a strategic dialogue. As a result, the initiative established larger potential markets for new solutions and discussed the possible challenges to be addressed through joint procurement processes, therefore offering greater potential for serial production, economies of scale and a much-needed market predictability in areas of innovative solutions.

Source: innovativeanskaffelser.no/about/

7.4 Practices related to innovation brokerage at the (sub)regional level

A third group of 'innovation brokerage' practices are those existing at the (sub)regional level. These are initiatives promoted at various levels, either through associations of cities, or partnerships amongst regions or even activities specific to certain territories. In some cases, these initiatives seem to increasingly focus on the specific needs of certain territories and on how to use brokerage approaches to define innovative ways of procuring public goods and services, in line with policy

objectives in those territories. Some examples are illustrated in the box below, with a diverse range of possible scopes and structures for this function.

Box 3. Sub-Regional level – selected 'innovation procurement brokerage' practices

Regional Living Labs as platforms for intermediation between authorities, end-users and suppliers

The Alcotra Innovation strategic project was funded under the Alcotra Programme in the scope of the European territorial cooperation objective, focusing on the experimentation of Living Labs, a working method encouraging user driven actions, open innovation through Private-Public-People Partnerships in which stakeholders co-create new products, services, business models or technology applications. Experimentations through Living Labs were carried in four strategic domains: Intelligent Mobility, Smart Energies, e-Health, and Creative Industries. Every regional Living Lab or the supporting regions have evaluated the opportunity to launch a call for proposals (or a tender for public procurement, if feasible) focusing at the development/pilot deployment of an innovative solution able to satisfy local needs of either technical or socio-economic nature. In this respect, the Living Lab approach was adopted as a method for engaging with beneficiaries of such potential innovations (citizens and end-users). In this context, priority in the awarding of procured goods and services should be assigned to proposals formulated by local actors (regional Living Lab stakeholders) – always taking into account the principles of non-discrimination and parity of access that are mandatorily enforced within any public procurement procedure.

Source: alcotra-innovation.eu/livingLabs/dwd/Alcotra_Innovazione_Handbook_2013.pdf

Fostering Corporate Social Responsibility criteria for accessing to public procurement

The Metropolitan Area of Nantes (Nantes Métropole) and the City of Nantes developed a responsible public procurement strategy which acts as a powerful lever to promote global companies Corporate Social Responsibility (CSR) towards the region and its wealth of human, social and environmental resources. In this context an initiative aiming at promoting CSR criteria for responsible public procurement, so as to encourage companies to seek a competitive performance through the development of responsible purchasing in public procurement has been established. Based on shared criteria, the initiative sets a grid of indicators to measure the CSR performance of public procurement candidates. Promoted by the Nantes section of the Young Leaders Centre (CJD), the City of Nantes, Nantes Métropole and Audencia Nantes School of Management, the initiative aims to allow the public purchase to take into account a whole range of areas of sustainable development, through the analysis of how companies respond to public procurement calls assume their responsibilities in terms of social, environmental, economic, territorial and governance fields.

Source: rse-nantesmetropole.fr/agir/activites-responsables/mettre-en-oeuvre-des-achats-responsables/politique-achats-responsables

7.5 Practices related to innovation brokerage at city level

A fourth and final group of 'innovation brokerage' practices are those existing at city level. These initiatives represent a broad range of aims and approaches, but they share a focus on identifying the specific needs of local citizens and the support in achieving local policy goals, when defining innovative ways of procuring public goods and services. Some examples are illustrated in the box below.

Box 4. City level – illustration of selected48 'innovation procurement brokerage' practices

Urban labs to identify the specific features of city management support services to be procured

'Citizéntrica' is a pilot cooperation programme promoted by the Spanish Ferrovial Services and the City Government of Madrid to improve the local street management services. The programme allows the set-up of a public-private partnership to identify how the most promising new technologies can be incorporated in the city management service contracts. Citizéntrica applies a methodology based on research and experimentation, structured through an 'urban lab' composed of the following elements: i) understanding the citizens' perspective -citizens' opinions gathered via face-to-face interviews to identify key issues for improving citizen satisfaction with the cleanliness of their urban environment; ii) analysis of international best practices in innovative street cleaning programmes; iii) application of new technology solutions through ad-hoc procurement contracts. The programme is currently implemented in the Chamberí district to pursue new solutions, technologies and approaches for a clean city.

Source: ferrovial.com/en/projects/street-cleaning-in-madrid-citizentric

'Collaboration pacts' amongst citizens and city administrations to co-manage urban commons

A number of 'collaboration pacts' are promoted in the City of Turin for shared management and requalification interventions on the *urban commons*[46], as agreed upon during an initial co-design phase. The 'pacts' are contractual agreements through which the City Government of Turin and the active city inhabitants define the procedures for the collaboration, and the active role of citizens in fostering support services in line with policy objectives set by the City Municipality. On this basis, active city inhabitants and the city administration recognise the urban commons as functional to the exercise of fundamental human rights, to the individual and collective wellbeing, to the interest of future generations, and act jointly to guarantee and improve their collective fruition, sharing the responsibility with the city administration of their care, shared management or regeneration. The 'pacts' are defined and implemented through the support of the the CO-CITY project, financed by the Urban Innovative Actions (UIA) Programme[47], promoted by the European Union and realized in partnership with the University of Turin, ANCI (National Association of Italian Cities) and Fondazione Cascina Roccafranca. On such basis, 54 Collaboration Proposals were approved by the City Government of Turin and accessed the co-design phase that will lead to the implementation of the projects presented under the categories identified by the Co-City project

[46] http://wiki.commonstransition.org/wiki/Bologna_Regulation_for_the_Care_and_Regeneration_of_Urban_Commons

[47] The EU UIA Programme aims to support European cities initiatives to tackle urban intricacies and challenges, experimenting innovative tools

(periphery and urban cultures, underused service platforms and care of public spaces). The projects approved by the City Government will take place in different areas of Turin, with a particular attention to the suburbs and to the most deprived areas where the rehabilitation of buildings and underused spaces can contribute to create new opportunities of employment and social inclusion.

Source: *www.uia-initiative.eu/en/city-turin-approves-collaboration-proposals-sent-residents-codesign-phase-starts*

Fostering the role of start-ups in providing publicly procured services

The programme 'Start-up in Residence' enables the city of Amsterdam to fund innovative solutions pitched by start-ups wishing to address societal needs identified by the city. The development of products and services was done in close partnership with Amsterdam's administration and in full transparency. This ensured that the developed products and services were in line with the needs of the City. In turn, Amsterdam reserved the right to buy the developed products and services for up to three years after initial delivery either as a launching customer or as one of the investors in the business. Typically, the solutions that were procured addressed concrete, everyday issues that the citizens of Amsterdam encountered, for example to reunite dispossessed bicycles with their legal owner or organising community action. The benefits of innovation in these cases were captured also through an effort to simplify the procurement documentation while ensuring that it complies with the local regulatory framework. A crucial element in this example was a sustained effort to build partnership between a large public procurer and suppliers of innovative solutions. Another initiative – *'Challenge: Amsterdammers, make your city!'* – provides social innovation vouchers for innovative, bottom-up projects, and a social innovation programme to guide and coach participants in creating a sustainable learning ecosystem of Amsterdam innovators. Innovative '*city-makers*' – as the initiative defined public initiatives, social enterprises, start-ups, neighbourhood associations or individuals with an interesting project – can contribute to a publicly-financed programme and are included in in the network of the Amsterdam Economic Board and Chief Technology Office.

Source: amsterdam.nl/wonen-leefomgeving/amsterdam-innovatie/european-capital/challenge/startupinresidence.com/Amsterdam

Engaging with local stakeholders in the definition of municipal services' requirements

The Collaboration Laboratory (Collaboratory) in Reggio Emilia is a participatory planning initiative promoted by the Municipality and the University of Modena and Reggio Emilia with the technical support of LabGov-Kilowatt. Aim of the initiative is to provide the main features for an Open Laboratory to identify innovative solutions procured by local authorities, so to address local needs as identified through exchanges with citizens, members of local communities. The Open Laboratory will act as a broker for the definition of local needs and possible solutions – in the broader sense of products, services, technologies and public delivery models – by engaging with different subjects and skill-sets. An initial co-planning phase has helped to define the vision, mission and organisational model of the Open Laboratory while testing the methodology for collaboration practices in the city. Launched as a pilot public-funded project, the ambition of the Open Laboratory is to become self-sustainable over time.

Source: co-reggioemilia.it/cosa/

7.6 Cross-analysis of the main features in the practices presented

An overview of the specific features across the selected experiences presented so far is provided in the table below, to allow a cross-analysis of main similarities and differences across the various cases. Such overview is provided by highlighting key aspects such as the level and purpose of the initiative, the body in charge of the initiative, the stakeholders involved, the actual or foreseen outputs and outcomes, its duration and the revenue model. These features are reviewed in the next conclusive section, as a basis for a brief overview of opportunities, challenges and ideas for next steps for the Urban Agenda. Again, urban examples are limited and often focussed on the specification of needs rather than the “full cycle” of support up to the identification of procurement procedures. This analysis identifies a “gap” in this area for urban procurement and the need to foster greater and better know-how on this matter, which is also a goal for this paper.

Table 3. Cross-analysis of the main features in the practices presented

Features	Madrid	Amsterdam	Reggio-Emilia	Turin	'Alcotra' Regions	Metropolitan Nantes	Healthcare BE/ES/FI/NL	Austrian Procurement Centre	Agency for Digital Italy	Norway Supplier Development	COSME	Marine-EO
Level	Urban	Urban	Urban	Urban	Inter-regional	Metropolitan	National (Sectorial)	National	National	National	Cross-EU	Cross-EU (Sectorial)
Purpose	New service delivery	New service delivery and new suppliers	New policy intervention	New service delivery and new suppliers	New policy intervention	Sustainable procurement criteria	New service technology	New service technology	Multiple sectors	Multiple sectors	New service technology	New service technology
Type of body	Lab	Lab	Lab	Project	Lab	Project	Internal services	Agency	Agency	Programme	Contractor	Consortium
Stakeholders involved	Businesses Citizens Authorities	Businesses Citizens	Businesses Citizens/CSOs Authorities	CSOs Citizens Authorities	Businesses Citizens Authorities	Authorities	Suppliers	Suppliers Authorities	Suppliers End-users Authorities	Suppliers End-users Authorities	Suppliers	Suppliers Researchers
Outputs and outcomes	Service provisioning	Service provisioning	Services specification	Service provisioning	Services specification	Procurement indicators	Service provisioning	Service provisioning	Specification Provisioning	Specification Provisioning	Service provisioning	Service provisioning
Duration of the initiative	Project-based	Project-based	Project-based (permanent in longer-term)	Project-based	Project-based	Project-based	Permanent	Permanent	Permanent	Permanent	Project-based	Project-based

Revenue model	Private funds	EU Grants	EU Grants (fees in the long-term)	EU Grants	EU Grants	Public Grants	Self-financed	Central State Transfer	State Transfer, EU Grants	Public Grants	EU Grants	EU Grants