




**INNOVATION
PROCUREMENT
BROKERS**

INNOVATION PROCUREMENT BROKER: BUSINESS MODEL

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Abstract	The Innovation Procurement Broker (IPB) business model illustrates the role of Innovation Procurement Brokers as facilitators between public buyers and solution suppliers. It exemplifies generic tasks of an IPB and their potential modifications for realisation under actual conditions at the national and European level.
Keywords	Innovation Procurement Broker, Business Model
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Executive summary

The main result of the InnoBroker project is the establishment of an Innovation Procurement Broker (IPB) business model. It is based on the generalized experiences of five innovation procurement brokerage pilot schemes across Europe executed during the InnoBroker project (Andalucía/ES, Greater Copenhagen/DK, Ireland, North Rhine-Westphalia/DE, and Upper Austria/AT). Thereby, more than 20 public buyers and more than 100 suppliers have been involved (suppliers including 13 start-ups and 30 SMEs) and the degree of innovation has been proved to be high (new for buyers as well as for suppliers).

The replicability of the IPB business model is given by three main features. First, it is generalized in a way that it can be adopted under specific brokerage conditions and can be taken up by diverse entities such as government owned agencies, private enterprises or public-private-partnerships; acting as a stand-alone-broker or being hosted by an entity offering IPB support as one service line among others. Second, although generalized, the IPB business model is detailed concerning the elements of a (possible) IPB service portfolio as well as concerning the tasks, methods & tools related to each of the nine portfolio elements. Third, the added value of an IPB is indicated on the basis of the analysis of costs and benefits.

The logic of the IPB business model starts with (i) customers and therefore core beneficiaries; i.e. buyers and suppliers. Since IPBs should neither act as sellers of innovations nor as substitutes for public buyers, the IPB scope is confined to (ii) roles such as bridging between unmet needs on the buyer side and possible innovative solutions on the supplier side, facilitating the realization of innovation procurement cases, and monitoring the achievement of innovation. All these contribute to the (iii) boosting of innovation procurement eventually delivering better services for citizens at optimal costs while helping to solve societal challenges and spur markets towards innovation (extended beneficiaries). The (iv) Business Model Canvas provides guidance how to design and implement innovation procurement brokerage by highlighting the (v) service portfolio as the IPB's key activity: thereby always bearing in mind that each (vi) adoption of the IPB business model will be based on well-considered selections of the full range of options presented here, such as the selection of certain customers, the selection of certain services, or the selection of certain revenue streams.

Finally, it is recommended to exchange the InnoBroker learnings with other ongoing initiatives (national, European, international), to continue “proof of concept” of the IPB business model in other countries/regions (adaptive replication), and to contribute to the establishment of an European IPB network which eventually will become an European IPB association.

1. Introduction

In the last decade, the potential for demand-based instruments of innovation policy has been increasingly recognised as a way of encouraging innovation and accelerating the uptake of new technological developments. The rationale for demand-side innovation policies is to stimulate innovation in areas where societal and environmental needs are pressing and where government action can complement market mechanisms. Public procurement is considered as one of the most important demand side policy levers available.

However, public authorities and suppliers are facing several barriers in undertaking innovation procurement such as the lack of sustainable and innovative products and services on the market, the lack of legal and procurement expertise in applying innovation and the lack of time and resources for pre-procurement work and market research. In short, there is a need for matching needs of public buyers with innovative solutions of suppliers and the potential for pre and early market engagement to address the above barriers. An Innovation Procurement Broker (IPB) could serve as a bridge between buyers and suppliers and provide support to both sides in various phases of the innovation procurement cycle.

InnoBoker project overview¹

The InnoBroker project aimed at the establishment of an Innovation Procurement Broker (IPB) business model. The IPB business model results from the generalized experiences of five innovation procurement brokerage pilot schemes across Europe executed during the InnoBroker project.

- Thereby, more than 20 public buyers and more than 100 suppliers have been involved (suppliers including 13 start-ups and 30 SMEs) and the degree of innovation has been proved to be high (new for buyers as well as for suppliers).
- The innovation procurement brokers have been: AAC Agencia Andaluza del Conocimiento (Andalucía/ES); GATE 21 (Greater Copenhagen/DK); OOE Land Oberösterreich (Upper Austria/AT); PTI Procurement Transformation Institute (Ireland); and ZENIT Zentrum für Innovation und Technik (North Rhine-Westphalia/DE).

Together with the involved public buyers, eight unmet needs have been identified by the five brokers. As a result of matching these needs with possible innovative solutions, the brokers received all together 134 expressions of interest from various European countries, and beyond that from India, Serbia, Singapore, South Korea, Taiwan, Turkey, and the Ukraine.

IPB business model development

The development of the IPB business model started with a first indication of tasks which might be necessary to conduct brokerage. All project partners have been involved in this initial step as well as in the succeeding ones. For each of these tasks a short description was provided. To

¹ See for details: InnoBroker project deliverables, available at <https://innovation-procurement.org/innobrokers/>.

support mutual learning from the early beginning, a mapping and documenting of the existing brokerage services of InnoBroker partners was provided. After a first round of fine-tuning the IPB tasks, a comparison of the brokerage approaches used within the InnoBroker project was outlined (midterm). This was again followed by fine-tuning the tasks and clarifying the IPB role.

An important issue of the project was the provision of input for the final analysis of costs. For the analysis of costs, the brokerage partners kept records during the complete project duration of hours and other resources (for travel, room rent etc.) used. For the analysis of the benefits, a comprehensive list of added value by the activities of the brokers was elaborated. This list was then used in a buyer survey (shortly before the end of the project) and provided empirical evidence on the value added.

The IPB business model was outlined by following the Business Model Canvas from Osterwalder/Pigneur along nine building blocks: customer segments, value propositions, channels, customer relationships, revenue streams, key resources, key activities, key partnerships, and cost structure. The Business Model Canvas provides guidance on how to design and implement innovation procurement brokerage by highlighting the service portfolio as the IPB's key activity. It consists of nine service elements: procurement promotion, need identification, innovation procurement strategy development, market analysis, matching of need and innovative solutions, financing identification, procurement upscaling, tender-procedure support, and benefit demonstration.

Another important issue concerns the replicability of the IPB business model. It is given by the generalization of individual brokerage experiences combined with detailing the elements of the IPB service portfolio concerning the tasks, methods and tools. Therefore, the model can be adopted under specific brokerage conditions and can be taken up by diverse entities such as government owned agencies, private enterprises or public-private-partnerships; acting as a stand-alone-broker or being hosted by an entity offering IPB support as one service line among others. However, it has to be clear that each adoption of the IPB business model will be based on well-considered selections of the full range of options presented here, such as the selection of certain customers, the selection of certain services, or the selection of certain revenue streams.

Structure of the report

The report is structured in the following sections: After the introduction (chapter 1), the IPB scope is clarified by the definition of roles (chapter 2) and the IPB value is indicated per service element in relation to the phases of the innovation procurement process (chapter 3).

On this basis the tasks, methods and tools of each element of the service portfolio will be described in detail (chapter 4) and will be used as a central building block for the outline of the Business Model Canvas (chapter 5). Further details backing the IPB business model can be found in the two annexes ("Analysis of costs and benefits", "Tools").

The report ends with an outlook and recommendations for future IPB at European level (chapter 6).

2. IPB Scope: Definition of roles

In this section, the scope of an IPB will be outlined. It starts by explaining the IPB's bridging role between unmet needs on the buyer side and possible innovative solutions on the supplier side, followed by the role of facilitating the realization of innovation procurement cases, and the role of monitoring the achievement of innovation.

2.1. Bridging role between need and solution

The central role of a broker is to bridge between two other actors^{2,3}. In the case of innovation brokerage this means bridging between buyers and suppliers, respectively between unmet needs of buyers and possible innovative solutions in the form of “works, supplies or services for consideration by means of a public contract”⁴ offered by suppliers.

- Concerning buyers, they are defined as public body (i.e. “public authority”, “body governed by public law”, “contracting authority”)⁵ with a need for an innovative solution.
- Concerning suppliers, they are defined as “economic operators”⁶ offering the execution of innovative works, the supply of innovative products or the provision of innovative services. Thus, not only private companies (especially SMEs, start-ups), but also any persons and/or entities which offer innovative solutions on the market (whether public or private, whether or not they are ‘legal persons’) may be involved.

The IPB model presented here focuses on public buyers. However, innovation procurement brokerage can be offered for private buyers as well (but this has not been considered in the InnoBroker project and may be subject of further activities).

In fulfilling its bridging role, the IPB is raising awareness for the opportunities of innovation procurement, contacting public buyers proactively to intensify their mobilisation, supporting them in need identification and specification, and linking them with suppliers and experts.

The IPB's bridging role is depicted in Figure 1. It highlights the necessity for an IPB to deal with a differentiation on the demand as well as the supply side. That is, the generalized IPB business model distinguishes between “core beneficiaries” which are the direct customers, and “extended beneficiaries”, related to and benefiting from the activities of the core beneficiaries.

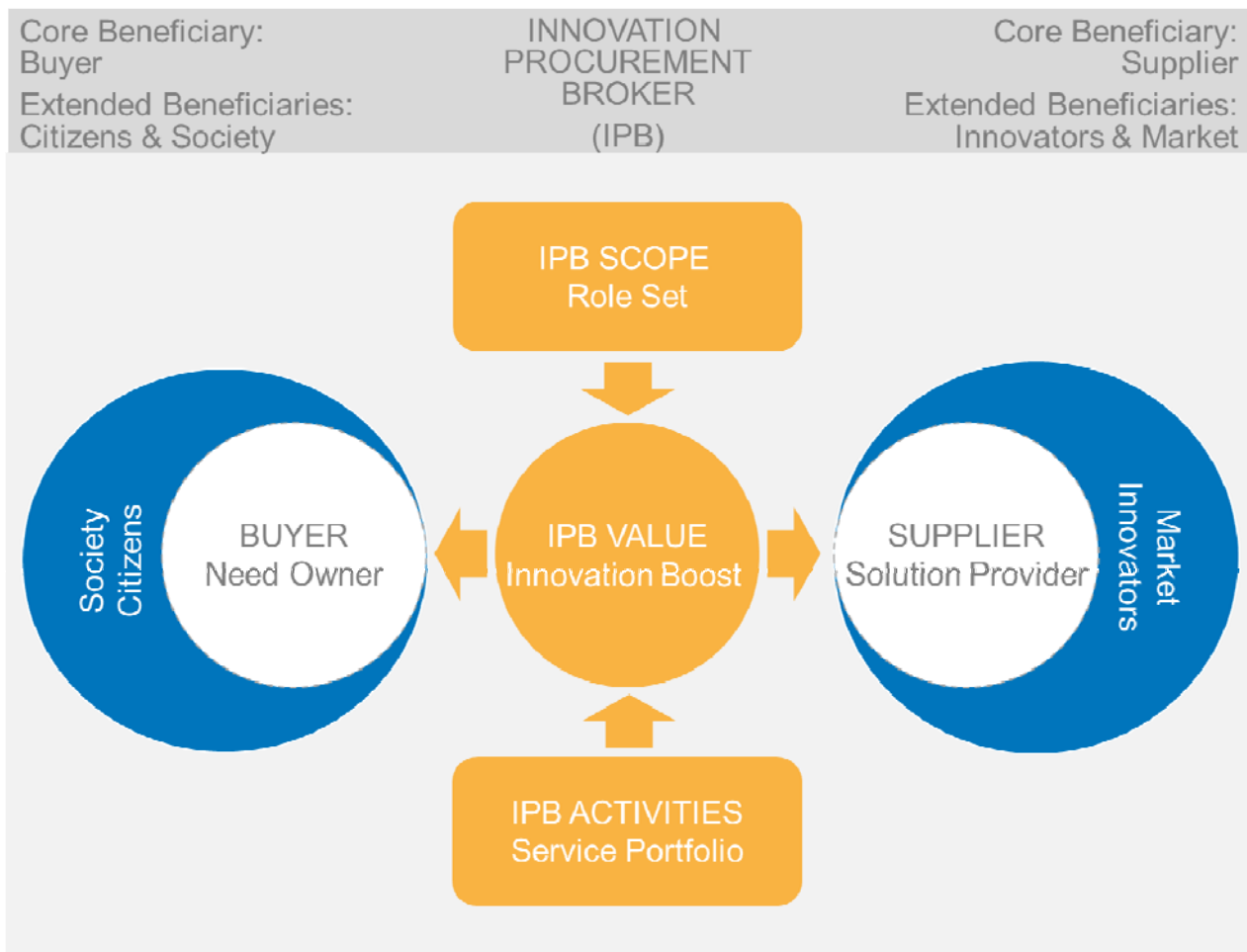
² Stovel K., Golub B. & Meyersson-Milgrom EM. (2011) Stabilizing brokerage. PNAS 108: 21327-21332.

³ Halevy, N., Halali, E. & Zlatev, J. J. (2019) Brokerage and brokering: An integrative review and organizing framework for third party influence. Academy of Management Annals, 13(1), 215-239.

⁴ OJEU (2014/L/94-24) Directive 2014/24/EU: Public procurement. Official Journal of the European Union. Brussels. p.65.

⁵ OJEU (2014/L/94-24: 66).

⁶ OJEU (2014/L/94-24: 67).



Core beneficiaries: customers and therefore core beneficiaries are buyers and suppliers

Extended beneficiaries: on the demand side, citizens benefiting from better services, and the overall society benefiting from the achievement of societal goals (e.g. SDGs, missions); on the supply side, innovators (knowledge providers in the broader sense such as researchers, technical/legal experts, funding agencies, clusters/networks, business/innovation agencies, incubators, politicians and lobbyists) related to a solution provider and the overall market (sector)

Buyer: contracting authority; need owner unit (e.g. team, department, management board) must be distinguished from the procurement unit (usually a procurement department) which acts as the extended arm of the need owner in finding an innovative solution for the owning unit's unmet need

Supplier: economic entity providing a solution tailored to the unmet need of one or more need owner/s; often cooperating with research knowledge providers (innovators)

IPB scope: bridging between unmet needs and possible innovative solutions; facilitating the realization of innovation procurement cases; monitoring the achievement of innovation

IPB value: boosting innovation to achieve (i) added value realised as positive impact on core beneficiaries (innovation procurement benefits) as well as in (ii) added value realised as positive impact on extended beneficiaries (social and economic benefits)

IPB activities: service portfolio consisting of nine service elements

Figure 1: Generic innovation procurement broker (IPB) business model

The basic differentiation on the demand side considers public buyers as “core beneficiaries” and individual citizens and the overall society as “extended beneficiaries”. This follows the rationale that public entities do not exist for their own sake but are mandated of delivering high quality

public services for citizens^{7,8,9,10}. Beyond that public entities are expected to contribute to the realization of overall societal missions such as the SDGs¹¹ and the European missions^{12,13,14}. Both dimensions – citizens/micro-level and society/macro-level – require the procurement of innovative solutions as one means among others¹⁵. A further differentiation on the demand side acknowledges that the public buyer is one entity from a legal perspective, but that it consists of different parts from an organizational perspective. As an internal differentiation, a public buyer's need owning unit (e.g. team, department, management board) must be distinguished from the procuring unit (usually a procurement department). Thereby the procuring unit acts as the extended arm of the need owning unit in finding an innovative solution for the owning unit's unmet need.

A basic differentiation on the supply side considers suppliers as “core beneficiaries” and research knowledge providers (innovators) and the overall market as “extended beneficiaries”. The “core beneficiaries” are companies (especially SMEs and start-ups) or other entities delivering innovative works, supplies or services. A further differentiation acknowledges that a provided innovative solution is often based on previous or simultaneous or cooperative activities of research knowledge providers (innovators in broad meaning such as such as researchers, technical/legal experts, funding agencies, clusters/networks, business/innovation agencies, incubators, politicians and lobbyists). Finally, the overall market may benefit from a clear innovation signal boosted by the purchasing power of public buyers^{16,17,18}.

2.2. Facilitating role within procurement cycle

To assign the facilitating role of the IPB within the procurement cycle, it has to be acknowledged that innovation related procurement is a comprehensive undertaking going beyond standard procurement routines¹⁹. That is, the preceding and the follow-up phases matter at least as much

⁷ EC (2007/COM/799) Pre-commercial procurement: Driving innovation to ensure sustainable high quality public services in Europe. European Commission. Brussels.

⁸ EC (2014/COM/339) Research and innovation as sources of renewed growth. European Commission. Brussels.

⁹ ERAC (2015) ERAC opinion on innovation procurement. European Research Area and Innovation Committee (Task Force Members: Laatsit M./rapporteur, Adolphe D., Beley B., Buchinger E., Ortiz Pajares M., Garrido M., Kalytis R., Pavlaković I., Rajalo S., Svendsen L., Vermeulen H., Vilén K., Voort L., Putten M.). Brussels.

¹⁰ EC (2018) Guidance on innovation procurement. European Commission. Brussels.

¹¹ SDGs Sustainable development goals. The 2030 Agenda for Sustainable Development focuses on 17 SDGs, each calling for action by all countries in a global partnership. They aim at ending poverty, improving health and education, reducing inequality, and spur economic growth while tackling climate change and preserving oceans and forests. See: UN (2015) Transforming our world: The 2030 agenda for sustainable development. United Nations. New York.

¹² The five proposed missions for Horizon Europe at the end of June 2020 are: conquering cancer; accelerating the transition to a climate prepared and resilient Europe; regenerating our ocean and waters; 100 climate-neutral cities by 2030 - by and for the citizens; caring for soil is caring for life https://ec.europa.eu/info/horizon-europe-next-research-and-innovation-framework-programme/missions-horizon-europe_en [2020-07-10].

¹³ EC (2017) Towards a mission-oriented research and innovation policy in the European Union: An ESIR memorandum. European Commission. Brussels.

¹⁴ Mazzucato, M. (2019) Governing missions in the European Union. European Commission. Brussels.

¹⁵ Procurement of innovative solutions does not substitute in-house innovativeness of public entities but should be part of it.

¹⁶ EC (2007/COM/860) A lead market initiative for Europe. European Commission. Brussels.

¹⁷ EC (2016) Innovation procurement: The power of the public purse. European Commission. Brussels.

¹⁸ EC (2018) Guidance on innovation procurement. European Commission. Brussels.

¹⁹ The empirical basis for these perspective on innovation related procurement is derived amongst others from (i) various innovation related procurement examples in Austria and Finland; (ii) the modernization of the Austrian Mint's

as the execution of the procurement process in the narrower sense. It was a major learning of the InnoBroker project that the facilitating role of the IPB is requested especially in the preceding and the follow-up phase.

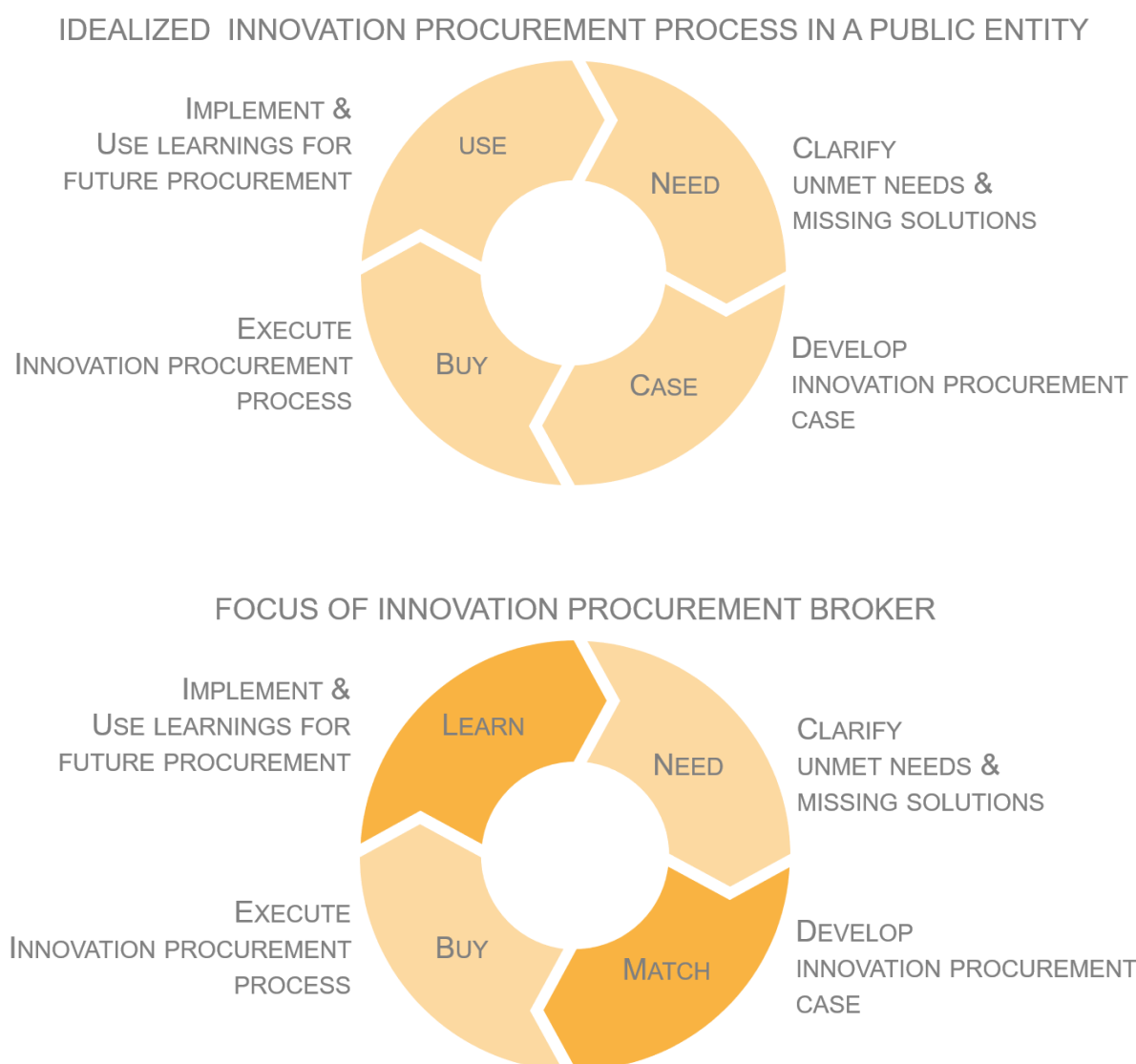


Figure 2: Highlighting the acting focus of the IPB in an idealized innovation procurement process in a public entity

Sources: Adopted from the INNOBOOSTER project (DG GROW)²⁰ and the MLE on Innovation Procurement (DG RTD)²¹

wastewater facility which received the European Procurement of Innovation Award 2015; (iii) the joint procurement project INNOBOOSTER (co-financed by DG GROW and finalized in 2016); (iv) several PCP projects and learnings and insights from the innovation related procurement workshops within the INNOVATIA conference in Vienna 2016 in which more than 50 public procurers participated; (v) the Mutual Learning Exercise (MLE) on Innovation Procurement (2017-2018 organized by DG RTD).

²⁰ Buchinger, E., Schieg, A., Unger, J. & Ylipalo, S. (2017) Towards optimal public procurement of innovation: Case based success & failure learnings. INNOBOOSTER Consortium. Vienna-Helsinki-Linz.

Thereby, preceding phases means the clarification of unmet needs as well as the development of an innovation procurement case; procurement process in the narrower sense means the activities from the publication of the contract notice to the contract closing (contract award notice; purchase, leasing or other contractual forms)²²; follow-up phase means the implementation of the awarded work/supply/service and the use of the learnings for future procurement. Thus, an idealized innovation related procurement cycle²³ can be depicted as a 4-phase process (Figure 2).

An innovation procurement broker needs to understand the “public sector rationality” of providing services for citizens and being subject to public administration rules and regulations and the entire public procurement of innovation process. However, on the basis of the InnoBroker pilots it became clear that the facilitating role of an IPB is especially desired from the public buyers’ perspective in two of the four phases (Figure 2): in helping to develop an innovation procurement case which includes a market scan and a follow-up bridging between needs and innovative solutions (match), and in promoting innovation procurement to motivate public buyers to engage and use experiences derived from good practice cases presented to them respectively their own past innovation procurements (learn).

2.3. Monitoring role for innovation achievement

Innovation procurement requires the indication of the existence of innovation. Beyond that the determination of the degree of innovation is necessary to be able to monitor innovation achievement.

Within the EU Procurement Directive, the following definition can be found: “‘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”²⁴.

Following this definition and based on various innovation procurement measurement experiences^{25,26,27,28,29,30,31} a qualitative measurement tool has been developed within the

²¹ Buchinger, E. (2017) Capacity building for innovation related procurement: evidence and lessons learned (MLE Mutual learning exercise on innovation related procurement). European Commission DG RTD | Horizon 2020 Policy Support Facility. Brussels.

²² Procurement process in the narrower sense includes the preparation of tender documents with the definition of selection criteria, award criteria and their weighting; the ensuring that compliant tenders are received and selected according to the rules and criteria established in the tender dossier; and the evaluation of tenders. See OJEU (2014/L/94-24) | EC (2015) Public procurement guidance for practitioners. European Commission. Brussels.

²³ The term “procurement cycle” is adopted from the OECD where the “entire procurement cycle” is understood as integrating “public procurement with other elements of strategic governance such as budgeting, financial management and additional forms of services delivery”. OECD (2015) OECD Recommendation of the council on public procurement. Organisation for Economic Co-operation and Development. Paris. p3.

²⁴ OJEU (2014/L/94-24: Art2(22)).

²⁵ Familiari, G., Brignani, N., Gramillano, A., Levarlet, F., Valenza, A., Ypma, P., Bill, H., Simpson, J., Kapff, L. & van der Peijl, S. (2014) Quantifying public procurement of R&D of ICT solutions in Europe. European Commission. Brussels.

InnoBroker project to indicate the degree of innovation of the proposed solutions (see for the tool Annex 2). This measurement tool was applied in a survey with 11 public buyers of the InnoBroker project with quite positive results.

- All buyers answered “yes” to the question “Is the needed solution new to the public body’s organization?”
- About half of the buyers answered “yes” to the question “Does the public body expect that the needed solution will require follow-up innovation in their organization?”
- Almost all buyers answered yes to the question “As far as the public body knows, is the needed solution new to suppliers?” (The remaining buyers did not have enough knowledge to answer.)
- Two thirds answered “yes” to the question “Is the solution new for the local, national, European (global) market according to the specific buyer(s)?” (The remaining buyers answered e.g. “believe yes”, “probably yes” or “seems no”.)

Concerning the supplier side, the results of the Enterprise Europe Network (EEN) technology request (see for this tool Annex 2) as quite positive as well.

²⁶ Buchinger, E. & Rammer, C. (2015) Public procurement as an instrument of innovation policy. In BMWFW und BMVIT (Eds.), Austrian research and technology report 2015. Vienna: Federal Ministry of Science, Research and Economy (BMWFW), Federal Ministry for Transport, Innovation and Technology (BMVIT), 129-144.

²⁷ Appelt, S. & Galindo-Rueda, F. (2016) Measuring the link between public procurement and innovation. OECD. Paris.

²⁸ Essig, M. & Schaupp, M. (2016) Ermittlung des innovationsrelevanten Beschaffungsvolumens des öffentlichen Sektors als Grundlage für eine innovative öffentliche Beschaffung. FoRMöB Forschungszentrum für Recht und Management öffentlicher Beschaffung der Universität der Bundeswehr München. Neubiberg.

²⁹ Buchinger, E. & Schiefer, A. (2017) Policy note: Monitoring & measurement of innovation procurement in Austria. AIT. Vienna.

³⁰ Jaakson, P. (2017) Innovation procurements: Monitoring and proportion in all procurements in Estonia in 2015. Ministry of Economic Affairs and Communications of the Republic of Estonia. Tallinn.

³¹ Zabala-Iturriagagoitia, J. M. (2018) Monitoring, evaluation and impact assessment of innovation related procurement. European Commission. Brussels.

3. IPB Value: Boost of innovation procurement

Boosting of innovation procurement will result in (i) added value realised as positive impact on buyers and suppliers as core beneficiaries (innovation procurement benefits) as well as in (ii) added value realised as delivering better services for citizens at optimal costs while helping to solve societal challenges and spur markets towards innovation (extended beneficiaries; social and economic benefits).

Concerning the innovation procurement benefits, the IPB create the following general value-complex.³²

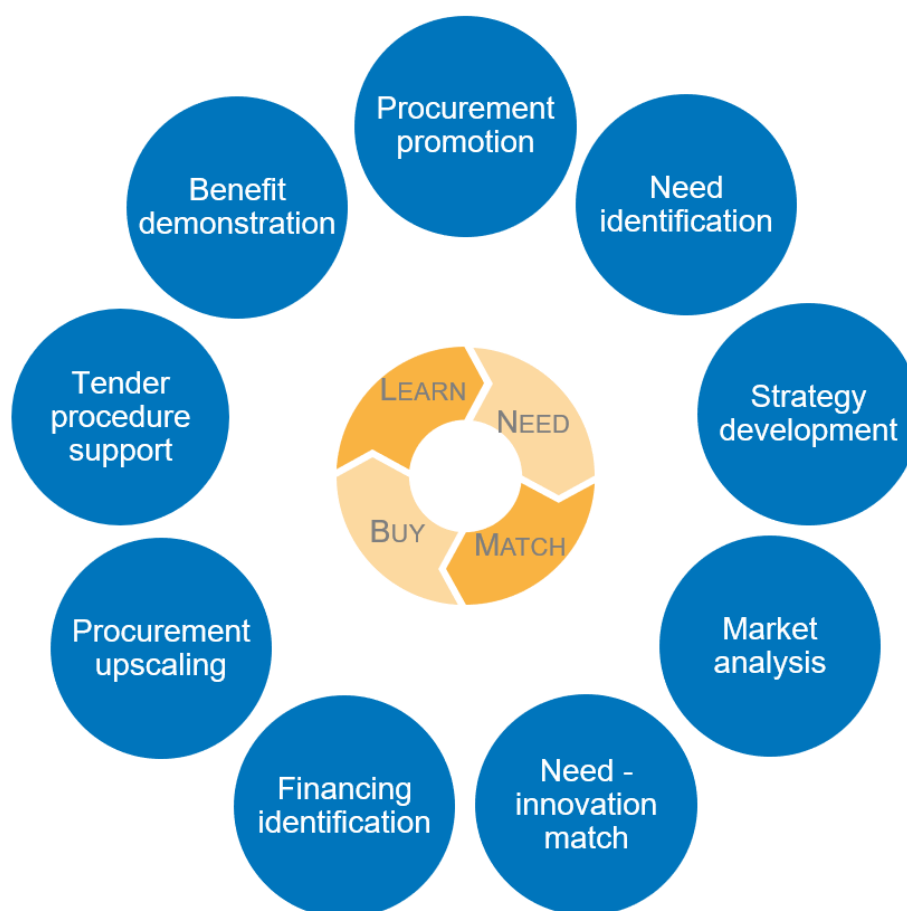
- The IPB mobilizes public buyers to conduct innovation procurement;
- increases the effectivity of innovation procurement
 - (e.g. shortening time-span, reducing search costs, mitigating risk aversion, increasing fit of buyer-supplier matching, increasing the degree of innovation);
- and scales up for European value
 - (e.g. reducing barriers to access European market, increasing chances for SMEs/start-ups to access public procurement).

Beyond that the IPB creates specific value from the individual services. Figure 3 indicates the respective elements of the IPB service portfolio, whose tasks are outlined in detail in section 4. In the following, the specific value creation is described per service element in relation to the innovation procurement process phases.

3.1. Clarify unmet needs and missing solutions

Identifying unmet needs of a public entity and refining them is a central IPB activity. Identifying “real needs” aims thereby at ensuring that what is purchased meets the public buyer’s requirements. Without a real need and the buyer’s genuine commitment to it, the public authority is prone to drop the innovation procurement project at some point of the process. These needs may originate from different sources such as: (i) specific needs concerning a public entity’s process (e.g. cost saving, organisational modernisation); (ii) specific needs concerning a public entity’s services (“better services for citizens”); (iii) adapting to advances in scientific and technological development (e.g. innovations in ICT); (iv) policy requirements (European, national, regional, sectoral).

³² See for the assessment of IPB values through buyers the tool “IPB values” in Annex 2 and the survey mentioned below.



Procurement promotion: raise awareness; train and educate; develop/maintain networks; recruit public buyers

Need identification: clarify conditions for an innovation procurement case; identify and specify needs; explore the market and refine the need statement; design innovation procurement case

Strategy development: facilitate strategic embedding in buyer's organisation; outline costs and benefits

Market analysis: conduct market scan and assess results; engage with knowledge providers and potential suppliers; identify the degree of innovation of the solution

Need - innovation match: launch innovation request; prepare preliminary market consultation; support finding solutions

Financing identification: identify funding instruments; suggest a financing strategy for the innovation procurement case; support proposal development

Procurement upscaling: promote innovative solutions for joint and multiple procurement; foster joint and multiple procurement at regional, national, or European level

Tender procedure support: support clarification of IPRs; support choice and conduct of procurement procedures and approaches; support dissemination of call for tender

Benefit demonstration: disseminate good practice examples; give demonstrations

Figure 3: Elements and tasks of the service portfolio of the generic IPB business model

IPB value creation related to the service element “Need identification”

Initially the IPB can act as a creative mind for the buyer to open potential doors to innovation procurement. For example, a public entity may not be fully aware of a need and requires a more

detached perspective in order not to continue the same way of thinking that can lead to the same product or service with each contract renewal. The innovation broker provides value by stimulating a different way of thinking within the public authority. Through the intervention of an innovation broker, specific needs of public authorities may arise in two ways. Either the innovation broker approaches the public buyer with an innovative solution, or a public buyer works on specifying a need with the support of an IPB. A broker can help public buyers to understand different approaches for need identification and how they can define and specify their requirements accurately, before finally engaging with the market and going through the procurement phase. It is practically “holding the buyers’ hands” as they go through the live process and training them as they proceed. It is here where the broker can also help the public authority to eliminate procurement ideas that do not add value or contribute to real needs. At this point in the process, the public authority aims to refine the need and specify the requirement of the innovative solution. The public authority can do this internally or with support of the innovation broker.

- Value: Focusing the identification of needs; bringing new ideas, approaches and understanding of innovation to the buyers; guiding the buyer through the need specification process step-by-step and ensuring that innovation procurement is not done for the sake of innovation, but that the market challenge reflects real needs.

3.2. Design innovation procurement case

The InnoBroker project showed that the development of an innovation procurement case is of special value to the public buyers. This phase comprises the following five IPB service elements and their specific values.

IPB value creation related to the service element “Strategy development”

The IPB can support the development of a specific innovation-related procurement strategy as part of the public entity’s overall strategy. This approach is especially an issue when aspects are relevant such as a significant financial procurement volume (i.e. early-stage budgeting), a high and therefore risky innovation degree (i.e. testing, certification may be required), or procurement with a potentially long implementation timeline. Beyond that, some cases may require a political backing which has to be considered in innovation procurement strategy development.

- Value: Timely integration of the strategic dimension – within the buyer’s organisation and if necessary, with policy makers – into the innovation procurement process.

IPB value creation related to the service element “Market analysis”

Screening the market and engaging with suppliers is a time-consuming task and needs an understanding of the market. Buyers are often reluctant or unable to speak directly with suppliers in the pre-procurement phase because of the specific legislative conditions. Similarly, even though companies are willing to do business with public bodies as a customer segment, they shy

away when getting involved in the rigid system of public contracts and encountering requirements they cannot meet.

Market searches, such as desk-based research, networking, engaging regional, national and/or international online platforms, can be carried out by the brokers, however to differing degrees. Buyers and suppliers can be linked up in a workshop facilitated by the broker. Brokers may facilitate finding potential suppliers at European level through the Enterprise Europe Network. They support the buyers in writing the profile of requirements and pre-screen prospective supplier solutions based on the specific needs of the buyers.

- Value: Get a comprehensive market overview and broaden the buyers and the supplier's opportunities to move towards the best fitting innovative solution.

IPB value creation related to the service element “Need – innovation match”

The IPB, through personal and organisational networks and other contacts, can bring together buyers with suppliers. Buyer-supplier dialogue usually takes the form of a workshop to discuss the needs and explore potential solutions. The innovation broker can act as a facilitator of the process, providing a mediation role, as well as offering their expertise in specific topics and facilitate challenges, and public-private innovation contracts. The broker may provide a methodology for market dialogue that ensures transparency (as specified in the procurement law under Art. 41 “prior involvement of candidates or tenderers”), that the relevant points are discussed, and that the data is captured.

- Value: Broaden the possibility of buyers to get access to suppliers and innovative solutions, and initiate supplier-supplier interaction (as a basis of a bidding consortium) in case it is difficult for one supplier to provide an appropriate solution

IPB value creation related to the service element “Procurement upscaling”

Procurement upscaling can take place at regional, national or European level. The IPB can bring together public buyers with similar needs whereby the IPB can promote innovation ideas and/or each of the public buyers may benefit from the exchange of their experience. Beyond that the IPB may be able to motivate several public buyers with comparable needs to undertake a joint procurement.

- Value: Clustered public buyers' purchasing power can better spur the market towards innovation.

IPB value creation related to the service element “Financing identification”

While some public buyers have a sufficient budget for innovation procurement once the top management is convinced that it contributes clearly to the organizations mandate, strategy and goals, others need external financing to be able to create an innovation procurement case. The IPB can help to identify financing opportunities at regional, national or European levels.

- Value: Information about existing funding opportunities (possibly find synergies between different funding sources) and knowledge of how to exploit these funding opportunities for innovation procurement.

3.3. Execute innovation procurement process

The execution of the innovation procurement process following the procedures and approaches specified within the procurement law falls not into the tasks of an IPB. However, the IPB can support its preparation and execution.

IPB value creation related to the service element “Tender procedure support”

Some public buyers – often bigger ones – are fully aware of innovation friendly procurement procedures and approaches specified in the procurement law. Others – often smaller ones – avoid “preliminary market consultation”, “competitive procedure with negotiation”, competitive dialogue, innovation partnership and pre-commercial procurement because they lack information or perceive these procedures/approaches as too risky. The IPB can help them to better understand the options given by law and to select the right one for their specific innovation procurement case. Beyond that the IPB can support the execution of the chosen procedure/approach if appropriate by supporting the definition of technical specifications (e.g. definition of performance requirements and/or functional requirements, clarification whether a transfer of IPRs will be required), the definition of the award criteria and their weighting, and the evaluation of the submitted tenders. If appropriate the IPB may provide a link to legal experts and support the dissemination of the invitation to tender towards suppliers e.g. via newsletters, existing networks (clusters) and forums (Innovation Procurement Brokers Network group), and relevant Enterprise Europe Network sector-groups.

- Value: Informed decision on the appropriate procurement procedure/approach and optimal innovative solution through wider dissemination of the call for tenders.

3.4. Implement and use learnings for future procurement

Showing the benefits of innovation procurement may be both the beginning and the ending of an innovation procurement process.

IPB value creation related to the service element “Benefit demonstration”

Since innovation procurement usually requires more effort and skills compared to routine purchase (more time, more knowledge, more staff or external expertise, e.g. for identifying/defining needs, formulating technical/functional specifications, executing negotiations/dialogues, managing tender comparison and evaluation), a significant amount of explicit as well as tacit knowledge may be accumulated during all phases. An IPB can share the related learnings within and between public entities. The IPB can support by giving feedback in workshops and individual consulting or help to install and to be part of, for example, a sounding board that is active throughout the entire innovation procurement cycle. If appropriate, the broker

can support the buyer to set-up a monitoring system. Beyond that, the broker can support possible buyers' internal follow-up innovation such as organisational restructuring or staff qualification.

- Value: IPB as a knowledge hub for innovation procurement that a public body can access easily.

IPB value creation related to the service element “Procurement promotion”

Since the nature of public procurement is inherently conservative and risk-averse (safety standards, bureaucracy, avoidance of law-suits etc.), procurement and innovation are often seen as antagonists. Beyond that innovation procurement may require more effort compared to routine procurement whereas procurement departments are usually oriented towards cost-saving as an economic necessity. Therefore, the promotion of innovation procurement through an IPB is necessary to mobilize public buyers.

- Value: Increase of the number of public buyers conducting innovation procurement.

4. IPB Activities: Portfolio of services

The Innovation Procurement Broker Business Model consists of a comprehensive set of service elements that can all be implemented by an Innovation Procurement Broker (IPB). However, depending on the institutional embedding of an IPB under “real world” conditions, an IPB may not cover the entire portfolio of service elements, but may focus on a selection of the elements. Furthermore, a particular buyer may require only certain services and may therefore use the broker’s services selectively. It is important to note that for both parties (broker, customer) it is “always a CAN and never a MUST” to decide which service or bundle of services will be implemented by an IPB.

Although public buyers can carry out all tasks of an innovation procurement process, the question arises whether they will actually do the tasks themselves. As many of the pilot procurement cases in InnoBroker have shown, public buyers often need someone to “let the snowball roll for them”, someone to push forward what the buyers do not prioritise in their daily routines, and someone to motivate, accompany and guide them along the innovation procurement process – either along parts of it or along the entire cycle.

Nine service elements have been identified in the InnoBroker project, ranging from procurement promotion to market analysis to benefit demonstration (see Figure 3 “Elements of the service portfolio of the generic IPB business model” and the following elaborations). It is important to be aware of IPB service conditions such as order and selection.

- **Order:** It is not necessary to perform the services in a particular order. Instead, for each individual innovation brokerage case the order of services follows the situational context of the stakeholders involved (buyer, supplier, broker etc.) and may have back and forth loops.
- **Selection:** Often only certain service elements are requested by the IPB’s customers. While some buyers may require help in need identification and refinement, others will be interested in outsourcing the conduct of market analysis and still others may see a necessity for support in conducting the law-specified procurement procedures. Suppliers may generally be interested in being considered in market analysis, in need/innovation matching and in getting access to the tender procedure.

In the following, IPB tasks associated with the nine service elements are described in detail. However, it should be noted that, although considerable efforts have been made to extract a wide range of IPB tasks and potential ways and methods of implementing them from the pilot cases of innovation procurement brokerage, additional tasks or approaches to task implementation may be required under certain conditions in real situations. Consequently, the following description of tasks can only be exemplary, but never exhaustive.

4.1. Service element: Procurement promotion

To attract public buyers and suppliers of innovation to a business cooperation, the IPB must, on the one hand, make buyers and suppliers aware of the possibility of public procurement of innovation and its benefits. On the other hand, the IPB must impart them how the IPB can support buyers and suppliers and guide them through the process of innovation procurement, which includes all steps from need identification until tendering. The promotion of innovation procurement and the IPB services includes tasks such as awareness raising and training for innovation procurement as well as networking activities that may eventually lead to customer acquisition.

Task: Raise awareness and promote innovation procurement

Raising the awareness of as many public buyers and potential suppliers of innovation as possible of the opportunities offered by innovation procurement and an IPB is crucial to attract sufficient interested parties for the IPB business model to work. The IPB promotes public procurement of innovation and brokerage services by organising thematic events for buyers and suppliers and conducting other appropriate outreach activities to distribute general information about procurement options, opportunities and barriers of innovation procurement and how the IPB can mitigate some of the challenges. The IPB also exemplifies good practice and award-winning cases and provides information about financing instruments and opportunities (including awards), and access to new networks. The IPB will also illustrate to the buyers how they can contribute to the regional/national innovation strategy, and how a public body may act as an innovation driver (as a role model for other buyers) and thereby become a reference to others. The broker can use such events to introduce specific themes or topics (e.g. almost market-ready innovations) for innovation procurement to spur the development of procurement cases among event participants. An IPB might occasionally carry out awareness-raising actions for individual buyers.

It is important for the IPB to manage the expectations of the potential customers and to make clear to them that an IPB is a professional innovation broker who facilitates procurement processes. An IPB is neither a mere legal counsellor nor a traditional consultant for identification and writing of technical specifications on an hourly rated basis. Instead, the broker must set that stage for what a broker can do and which services or assistance to daily work he or she can provide. The broker should also bring in early the costs expected for brokerage activities, as some buyers might not have a budget available and are obliged to bring it in the next year's budget.

Information days and workshops are suitable instruments to recruit new customers and to do marketing for the IPB services.

Methods & Tools: Organisation of events (information and consulting days, roadshows, workshops, breakout groups during relevant procurement events for buyers and/or suppliers); networking; use of various dissemination channels (website, newsletters, social media) and

promotional material (flyers, concept note on specific methodology and services provided by the broker, etc.)

Task: Train and educate

The IPB hosts training workshops and capacity building activities on how to conduct innovation procurement for buyers and suppliers focusing on public procurement of innovative solutions (PPI), pre-commercial procurement (PCP) and other legally prescribed procedures (e.g. competitive dialogue, negotiation, prior market consultation). In addition, the IPB showcases good practice examples and prepares settings where buyers can learn from each other's experiences concerning public procurement.

Methods & Tools: Organisation of training sessions and capacity building activities; preparation of training material; templates for documentation and sharing of lessons learned from previous/ongoing procurement cases

Task: Develop and maintain networks

The IPB develops and maintains networks of buyers and suppliers as a preliminary step for matchmaking activities. Ideally, the IPB can already draw from existing personal and organisational contacts and expand the network. While the core of the network are mainly buyers and suppliers, other stakeholder groups involved in public procurement also need to be included in the network, e.g. knowledge providers. Networks should go beyond national contacts and cover the whole geographical scope of a broker's business activities.

Methods & Tools: Networking (maintenance and expansion of personal contacts and contacts of the brokerage organisation); strategic networking (managerial level up to top level management with decision-making powers including the public political level such as technical directors, executive directors)

Task: Recruit public buyers

For the IPB business model to work, an IPB needs to recruit interested buyers. For joint procurement or participating in a funded procurement project, potential partners (experts, intermediaries) and other buyers need to be found. It is important to identify the "right" professionals or "right" staff members of a buyer organisation in terms of their drive (e.g. whether they are willing to innovate) and their responsibility and decision-making power (e.g. whether they can make binding decisions). The IPB must clarify at an early stage whether a planned procurement case fits timewise into the innovation procurement requirements of the public authority.

Recruiting of buyers for brokerage may occur through participation in events, forums, networking activities and the like. Brokerage may start with an unmet need by a public buyer ("pull"), or with an innovative solution brought in ("push") by suppliers or intermediaries (business agencies, incubators, etc.). In the latter case, meetings including buyers and suppliers with a focus on a specific theme or specific sector can be the starting point for an innovation procurement case. In

such a setting, mission-oriented goals such as environmental goals can easily be linked to procurement goals.

Before innovation procurement brokerage starts, the IPB often needs to mitigate reservations of buyers towards public procurement of innovation (more complicated and time-consuming procurement process, higher costs, unclear outcome, etc.) and invalidate potential “fear of innovation”, as it often takes more effort to come to tangible results (solutions for unmet needs).

Methods & Tools: Networking; attending/organising procurement and other relevant events; search for innovative technological developments with potential for innovation procurement

4.2. Service element: Need identification

To start an innovation procurement case, a buyer must have a real and concrete need for innovative solutions that fits into the buyer’s procurement portfolio and cannot be bought off the shelf. A first market scan provides information about the state-of-the-art of the market in relation to the need, potential solutions that the market could offer and whether the need statement should be refined.

Task: Clarify the general conditions for an innovation procurement case

Before the innovation procurement case is started, the IPB needs to define the baseline for brokerage, e.g. scope of the brokerage activities, the buyer’s primary and secondary targets, procurement volume, costs of brokerage, etc. In addition, the IPB will clarify the strategic dimension and organisational embedding of the intended procurement case within the public authority, if required (see section 4.3). Initial discussions should always include managerial staff from both the need owning and the procurement departments, and ideally also members of the top management. Bringing together different experts from the buyer organisation in cross-departmental meetings/workshops (need owners, procurers, financial and legal experts, etc.) throughout the procurement case can have a positive impact on both the overall procurement process and success, as such mixed teams can deal with, mitigate or even eliminate potential stumbling blocks from the outset.

If there is no obvious need for innovation procurement at the beginning, the procurement portfolio should be analysed to identify key areas of focus for innovation procurement. Furthermore, the IPB should ensure that secondary target(s) (e.g. sustainability, digitisation) are also taken into account from the beginning on. If the buyer does not have or is not aware of any secondary targets, the IPB can propose options for secondary targets based on the procurement portfolio, e.g. sustainability or recyclability of the procured product.

Methods & Tools: Continuous dialogue with the buyer (personal/online meetings); scoping workshop

Task: Identify and specify needs

The IPB supports the buyer in identifying real needs for innovative solutions by facilitating structured and goal-oriented discussions (e.g. in meetings or workshops), by encouraging and

introducing new ideas, approaches and understanding of innovation, always keeping the buyer's perspective in mind. If necessary, the IPB helps to assess the relevance of the identified unmet needs for innovative solutions and align them with the buyer's overall procurement strategy. The IPB guides the buyer step by step through the process of need specification and provides support in the preparation of the "first need statement" (for internal presentation and/or initial consultation of the market and other stakeholders). Specification of needs includes the refinement of the need, the definition of success criteria for procurement and the clarification of the aspired or at least achievable degree of innovation. This can be done in an analysis workshop, for example.

For some buyers need identification is not an issue, as they have a very clear and detailed idea of their needs and the desired solution from the very beginning. These buyers often only lack contacts to the market (solution providers) for starting an innovation procurement case. A buyer can learn in this initial phase that, for example, a market consultation is a legally permitted and even required procedure.

Methods & Tools: Meetings/workshops (to identify and specify needs; with and without end-users and other stakeholders); interviews with end-users; template for needs check/assessment (e.g. for defining the problem/need, available budget, expected benefit to the buyer/industry/society; see for this tool Annex 2), template for workshop design, template for post-workshop report (see for this tool Annex 2); template for need statement

Task: Explore the market and refine the need statement

The IPB conducts a first market scan (anonymous market research) to obtain a comprehensive overview of potential solutions offered by the market in relation to the buyer's need. Based on the results of this analysis, the buyer may validate the need and, if required, adapt the need specifications guided by the IPB. Finally, the IPB refines the need description for the market consultation ("second need statement") to ensure sufficient interest and response from potential suppliers. The IPB helps to make sure that innovation procurement is not done for the sake of innovation, but that the market challenge reflects a real need of the buyer.

Methods & Tools: Desk research, consultations with end-users and experts

Task: Design innovation procurement case

The IPB supports the buyer in designing the procurement case by suggesting topics for innovation solutions developing an initial project idea to be discussed with the buyer. The project outline also indicates the project costs and the resources required by the buyers and whether these are available within the project time frame.

Methods & Tools: Workshop/meetings for presenting and discussion of the project outline; template for project outline

4.3. Service element: Strategy development

Every buyer should clarify the strategic dimension of innovation procurement before starting an innovation procurement case. An early and in-depth cost-benefit analysis can help to decide whether it is reasonable to launch a planned innovation procurement case. At the same time, such an analysis can provide arguments as decision support for decision-makers in the buyer's organisation.

Task: Clarify the strategic dimensions of the procurement case within the buyer's organisation

The IPB clarifies the strategic dimensions of the planned innovation procurement case within the buyer's organisation and supports the buyer in developing an innovation procurement strategy. This includes clarifying how the public buyer wants to be a part of the solution, e.g. by introducing new policies or activities to manage change. The IPB identifies key players in the procurement process, interaction paths between different departments and can facilitate the internal coordination between the need owning department, the procurement department and top management

Methods & Tools: Moderation of discussions/meetings with various representatives of the buyer's organisation; strategy roadmap/report for the buyer

Task: Analysis of costs and benefits of procurement case for the buyer

A cost-benefit analysis of unmet needs can provide the economic justification for whether or not to start an innovation procurement and help the buyer to prioritise needs according to their benefits and costs. The IPB supports/moderates the internal discussion of the buyer in terms of (i) direct benefits (e.g. cost savings, increased resource efficiency, higher quality of public services); (ii) indirect benefits (e.g. contribution to societal goals) and (iii) expected costs. The IPB can stimulate the discussions by compiling in advance a list of possible benefits and cost items and by providing comparable references of successful cases of previous procurements (national or international). These can be used as convincing arguments to obtain approval for a mandate to carry out innovation procurement from higher hierarchical levels and, where appropriate, approval for additional budget to cover costs incurred by developing innovative solutions.

Methods & Tools: Moderation of internal discussions of buyer organisation about costs and benefits; cost-benefit analysis of the procurement case

4.4. Service element: Market analysis

A good knowledge of the market and the ability and skill to use the basic tools for market search are a prerequisite for finding the right supplier for the right solution. A market analysis provides a state-of-the-art analysis of the market environment in the area of the planned innovative solution in order to investigate whether and to what extent solutions are already available or soon on the

market that can meet the need. This phase often includes first direct contacts of the IPB with relevant market parties and the assessment of the degree of innovation of a proposed solution.

Task: Conduct market scan and assess results

The IPB scans the market for existing/upcoming innovations and searches for suppliers dealing with the buyer's unmet need. This may serve as a starting point for direct contacts with suppliers. The desk-based market search requires relevant technological knowledge and includes a search for scientific/technological literature, patents, standards, registered intellectual property, new product developments in projects, companies, and relevant networks and forums. In addition, market events, trade shows and fairs can also provide insight in new developments. The results of the market scan are compiled and assessed, thus indicating a shortlist of identified potential solutions and solution providers sorted according to their relevance for the buyer. The IPB is acting here as a second opinion and quality control for the public body. The results form the basis for deciding whether or not an innovation procurement is necessary (e.g. if there is already a solution on the market) and the type of procurement procedure and approach to be followed.

Methods & Tools: Desk research for market analysis (online market search via platforms and databases such as the Enterprise Europe Network (EEN (see for this tool Annex 2)), IPlytics (see for this tool Annex 2), Spotfolio, Statista; databases for scientific literature, patents), drawing information from networks of relevant private companies and start-ups, clusters, trade directories, technical groups, EU projects related to the theme in question; template for report on market scan findings

Task: Engage with knowledge providers and potential suppliers

As desk research cannot answer all questions about the opportunities offered by the market, the IPB ensures early interaction with potential suppliers and other relevant stakeholders, i.e. innovators in broad meaning (i.e. knowledge providers) such as researchers, technical/legal experts, funding agencies, clusters/networks, business/innovation agencies, incubators, politicians and lobbyists which public institutions may not be able to do (or may be reluctant to do). Engagement with suppliers and other stakeholders may include the following forms: meetings or interviews with the above-mentioned stakeholders, visits of trade fairs, organisation of market engagements events.

Methods & Tools: Meetings, interviews, organisation of market engagement events, workshops, visit of fairs

Task: Identify the degree of innovation of the solution

The IPB identifies the degree of innovation of the potential solutions and the impact of the innovation on the buyer's organisation and management. The degree of innovation defines how "new" an innovative product or service is. It is often an indicator for the complexity of a proposed solution. IPR search can help to clarify how novel the innovative solution is.

Methods & Tools: IPR search, tool “measurement of innovation” for identifying the degree of innovation (see for this tool Annex 2); tool innovation opportunity assessment (see for this tool Annex 2)

4.5. Service element: Need – innovation match

As soon as a thorough understanding of the market and the possible innovative solutions is achieved, the IPB can work on the need-innovation match and assist the buyer’s selection of feasible solutions. The public buyer together with the IPB will ensure that the whole process of need-innovation match prior to the procurement is open, transparent and non-discriminatory.

Task: Launch innovation request

The IPB can launch an innovation request addressing the unmet need of one or more public entities. Platforms for innovation requests exist in individual countries such as in Austria³³, but for the international level a technology request profile published for example in the Enterprise Europe Network (EEN) Partnership Opportunities Database will have a wider reach. The EEN Marketplace offers the opportunity to reach innovative companies and start-ups worldwide.

Methods & Tools: Use of online platforms for innovation request and obtaining feedback from potential suppliers, contacting the EEN local contact point

Task: Prepare preliminary market consultation

Based on the knowledge concerning the market for innovative solutions (e.g. derived from the IPB’s market analysis) a preliminary market consultation can be prepared. The IPB serves here as a central communication hub and suggests which independent experts (knowledge providers; innovators in the broader sense (such as researchers, technical/legal experts, funding agencies, clusters/networks, business/innovation agencies, incubators) and/or market participants should be included. In this way, the IPB expands the buyer’s opportunities to gain access to suppliers that the buyer did not know before. To this end, the IPB uses and develops existing networks of public buyers from different sectors (health, mobility, energy, etc.) and of suppliers (including supplier clusters from different sectors).

Methods & Tools: Maintenance of a stakeholder database with brokerage/matchmaking capabilities; template for guiding questions to suppliers and comparison of answers; presentation materials for dialogue with suppliers; template for workshop minutes

Task: Support finding solutions

If a buyer can choose between several types of promising solutions, the IPB prepares a comparative overview of these solutions (e.g. matrix, SWOT analysis) to help buyers to choose the best solution. If necessary, the IPB will also order “tests” or small-scale products of the potential solutions (e.g. different types of textiles to touch and feel). If it is difficult or even

³³ <https://www.ioeb-innovationsplattform.at/challenges/>

impossible for a single supplier to provide the desired solution to the buyer's need, the IPB may bring together several suppliers as a bidding consortium.

***Methods & Tools:** SWOT analysis of potential innovative solutions; template for comparing the potential solutions*

4.6. Service element: Financing identification

When public buyers lack the financial resources to implement an innovation project, they are dependent on external financing. The IPB identifies possible sources of financing and works out a financing strategy together with the buyer. If the financing of the innovation procurement case can be ensured through participation in publicly funded projects, the IPB can also offer support in the development of project proposals.

Task: Identify funding instruments

The IPB identifies financing opportunities for buyers at regional, national and EU level (e.g. calls for PPI or PCP projects³⁴), including awards when combined with a cash prize. When preparing the innovation procurement case (see section 4.2), internal presentation might result in additional finance from the buyer's organisation (investment money to access). Due to the Covid-19 pandemic, the search for viable alternative financing sources for procurement cases is a particular concern of many buyers, while for other buyers, financing conditions for new programs have improved.

***Methods & Tools:** Desk research (scan for regional, national funding options on funding and other platforms such as Innovation Procurement Platform³⁵, Innovation Procurement Brokers Network³⁶, funding and tendering portal of the European Commission³⁷, Enterprise Europe Network³⁸); personal contacts to funding organisations*

Task: Suggest a financing strategy for the innovation procurement case

The IPB bridges the buyer's lack of knowledge about financing possibilities, which enables the buyer to better exploit existing funding opportunities for public procurement of innovation. The broker provides the buyer with information about existing funding opportunities and may identify synergies between different sources of funding.

***Methods & Tools:** Desk research to identify funding opportunities*

Task: Support proposal development (and project reporting)

The IPB may be asked to support the preparation of a project proposal if the financing is provided by participating in a publicly funded project (e.g. H2020, ERDF). This can include

³⁴ <https://ec.europa.eu/digital-single-market/en/news/calls-eu-funding-opportunities-pre-commercial-procurement-and-public-procurement-innovative>

³⁵ <https://innovation-procurement.org/>

³⁶ <https://procurement-forum.eu/group/1866535/innovation-procurement-brokers-network>

³⁷ <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/home>

³⁸ <https://een.ec.europa.eu/>

assistance in finding partners (if required) and support for the preparation of the documents by helping to fill in the forms from the application phase to the final project report.

Methods & Tools: Desk research (partner searches on platforms such as Innovation Procurement Platform³⁹, Innovation Procurement Brokers Network⁴⁰, funding and tendering portal of the European Commission⁴¹, Enterprise Europe Network⁴²); personal contacts with NCPs; individual meetings with public buyers

4.7. Service element: Procurement upscaling

The need for quality/efficiency improvement of a buyer is often shared by other potential public buyers. In such a case, innovative solutions can be developed that are scalable and interoperable to meet the needs of several buyers. The upscaling of innovation procurements offers savings potential for buyers (economies of scale) and a broader market launch for the supplier. The IPB can support this by promoting innovative solutions for joint and multiple procurements and by identifying buyers with similar needs.

Task: Promote innovative solutions for joint and multiple procurement

To upscale a procurement case, identified needs of public buyers and new ideas for innovative solutions are disseminated through innovation procurement networks/platforms at regional, national or European level and through other relevant communication channels in order to make them publicly known to other interested parties.

Methods & Tools: Use of relevant networks/platforms⁴³ for pitching ideas; networking with other brokers to pitch ideas for scaling up

Task: Foster joint and multiple procurement

To foster joint procurement between buyers (collaboration in procurement cases between different public authorities to share costs), the IPB seeks buyers with similar needs. For this purpose, the broker searches relevant networks to find out whether other buyers have similar or even the same needs. The broker groups together buyers with similar needs at regional, national, or European level and establishes contact between the different actors as a basis for possible joint procurement. In all his/her activities to foster joint procurement, the IPB must proceed with caution so as not to exert pressure or even overwhelm individual buyers. Collaboration with local joint-procurement groups and with official state departments of procurement and competition is advisable. In case of multiple procurement (several buyers procure the same innovative product or service), the IPB promotes the successful procurement case of an individual buyer among other buyers.

³⁹ <https://innovation-procurement.org/>

⁴⁰ <https://procurement-forum.eu/group/1866535/innovation-procurement-brokers-network>

⁴¹ <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/home>

⁴² <https://een.ec.europa.eu/>

⁴³ E.g. Innovation Procurement Platform <https://innovation-procurement.org/>; Innovation Procurement Brokers Network (<https://procurement-forum.eu/group/1866535/innovation-procurement-brokers-network>);

Methods & Tools: individual meetings with public buyers, use of relevant networks / platforms

4.8. Service element: Tender-procedure support

The IPB may provide advice on the conduct or design of public procurement procedures, and the preparation and management of procurement procedures on behalf and for the account of the contracting authority concerned.

Task: Support clarification of Intellectual Property Rights (IPRs)

Public procurement of innovation entangles investment by buyers and suppliers/service providers into a new idea. As all parties involved will want to recover their investment, they could enforce intellectual property rights (IPRs). The IPB identifies and clarifies IPR issues in relation to the innovative solution to be procured and develops an IPR strategy with the buyer that captures the benefits of the innovation that are most important to the buyer and that takes into account future applications of the product/service. For example, IP remains with the creator (usually the supplier), while the public buyer obtains a benefit such as some form of licence, additional usage rights, access to data, or joint ownership agreements for any developed innovative solution.

Methods & Tools: Patent/licence analysis; technical specifications check (i.e. technical specifications may also clarify whether the transfer of IPRs will be required)

Task: Support choice and conduct of procurement procedures and approaches

Certain procurement procedures defined in the EU Procurement Directive⁴⁴ may be instrumental in innovation procurement; especially “competitive procedure with negotiation”, “competitive dialogue”, and “innovation partnership”. From the Directive’s list of “conduct of procedure”⁴⁵ the following may support innovation procurement: “preliminary market consultation”; “prior involvement of candidates or tenderers”; “technical specifications” (in terms of performance or functional requirements); “test reports, certification and other means of proof”; “variants”; “division of contracts into lots”; and “design contests”⁴⁶. Additionally, pre-commercial procurement (PCP) is addressed in the Directive as a “series of procurement models” specified the respective EU Commission document⁴⁷.

The IPB advises on the appropriate choice of these procedures and approaches and helps to comply with the principles of the “Treaty on the Functioning of the European Union”: i.e. equal treatment, transparency, non-discrimination, proportionality, non-distortion of competition. To be able to provide this advice the IPB should either be a proven legal expert in public procurement of innovation, or the IPB organizes the inclusion of a legal expert (e.g. a law firm).

⁴⁴ See (OJEU, 2014/L/94-24; 2014/L/94-25) especially Article 25ff.

⁴⁵ See (OJEU, 2014/L/94-24) especially Article 40ff.

⁴⁶ Specified in the Procurement Directive under “Particular procurement regimes”, Article 78ff.

⁴⁷ EC (2007/COM/799) Pre-commercial procurement: Driving innovation to ensure sustainable high-quality public services in Europe. European Commission. Brussels.

The IPB supports the buyer in identifying, defining and developing technical specifications of the intended solution and methods to measure the specifications (e.g. definition of performance requirements and/or functional requirements, clarification whether the transfer of property rights will be necessary), in defining the award criteria and their weighting, and in evaluating the submitted tenders.

Beyond that the IPB will assist in establishing a “risk profile” and assessing the “risk appetite” of the buyer (e.g. a low weighting of price and a high weighting of quality is riskier and costs more than high weighting on costs and low weighting on quality) and will take the risk profile into account in the new criteria and weights.

Methods & Tools: Use good practice collection(s) to demonstrate the pros and cons of innovation procurement procedures and approaches

Task: Support dissemination of call for tender

The IPB supports the targeted dissemination of the call for tenders to potential suppliers e.g. via newsletters, social media, existing networks (clusters), and relevant Enterprise Europe Network - sector-groups and e-procurement platforms. The IPB supports the preparation and execution of information notices, contract notices, and contract award notices.

Methods & Tools: Dissemination of call for tender (e.g. via newsletter, Enterprise Europe Network, TED, local/regional/national procurement platforms/e-tendering); template for call for tender; template for criteria and technical specifications; template with overview on legal procedure choice (for selection of the suitable legal procedure)⁴⁸

4.9. Service element: Benefit demonstration

Lack of experience and limited information on good practice examples are often seen as an obstacle to the introduction of innovation procurement. The IPB can demonstrate the benefits of innovation procurement by disseminating good-practice examples and showcasing either successful innovation procurements or promising innovative solutions.

Task: Disseminate good practice examples

Both newcomers and experienced public buyers of innovation procurement can benefit from good practice examples and experience of other buyers/suppliers with similar projects. Such examples can also demonstrate “synergies” between different goals, e.g. innovative and sustainable solutions. To this end, the IPB collects good-practice examples of projects, taking into account the relevant target groups (e.g. buyers, thematic experts, municipalities). The broker compiles the references in a “catalogue of good practices” in innovation procurement (e.g. a brochure or an online database) as inspiration for buyers. This catalogue and other relevant innovation procurement materials can be made openly accessible to all procurement stakeholders on different platforms and websites, e.g. the Procurement Forum⁴⁹, the InnoBroker

⁴⁸ <https://ogp.gov.ie/templates-2>

⁴⁹ <https://innovation-procurement.org>

website⁵⁰, and serve as a knowledge-hub. A case collection of good-practice examples, success stories and ideas for innovative procurement will be presented at events such as conferences, workshops, information days and road shows and disseminated through press-releases, newsletters etc.

Methods & Tools: Participation in and organisation of events for practical demonstration (road shows, workshops, information days); website and dissemination of promotional material (catalogue of good practice, newsletter); database of good practice examples

Task: Give demonstrations

The IPB uses labs, if available, and organises on-site demonstrations or the testing of new solutions/ideas/systems (prior to a procurement).

Methods & Tools: Maintaining a lab; organisation of on-site demonstrations; participation in existing formats for demonstrations (using network/platform/partners meetings)

⁵⁰ <https://innovation-procurement.org/innobrokers/>

5. IPB Business Model

5.1. Brokerage under specific conditions: legal, regional, thematic

It is essential to understand that each IPB in different countries all over Europe has its own set of unique conditions under which he/she operates. Whilst this understanding helps to frame both the regional and European dimension of innovation procurement brokerage when planning future activities, the generic IPB business model can be adopted under the various specific conditions described below. Thereby, the legal nature of an IPB is usually combined with a certain funding mode which may define its customer relationships, its regional embeddedness, and its thematic and activity range.

5.1.1. Public sector IPB

Public sector IPBs are publicly owned agencies, operating under the umbrella of their respective regional/national governments. This may have forms such as ministerial departments or fully public owned agencies hosting the IPB.

Customer relationship

Publicly owned IPBs are typically well placed for the recruitment of public buyers of innovation. Day-to-day contact with staff members of their own and other public authorities and knowledge of the current and future needs of the public entities are their advantages. That is, public IPBs are usually part of or linked to the procurement unit and are familiar with the public procurement processes and routines of the organisation. They know whom to address in the organisation for innovation procurement (“the right person”) both in terms of position and interest in trying new approaches, and the internal obstacles that might occur and how to deal with them. Informal discussions and information exchange are fast and effective. An inherent understanding of the organisational and procurement processes of the public authority is an invaluable asset for public IPBs.

Regional embeddedness

However, for public IPBs to understand how the private sector works and to get insight into current developments in research and innovation they have to seek contact with suppliers. For example, via organising information days and workshops or participating in events dealing with innovation procurement for suppliers. Close contact to regional/national business agencies and innovation hubs, such as incubators, enables IPBs to obtain information on the latest developments in the market and to have access to potential solutions and their providers. Regional and/or national personal networks should be combined with international online platforms with profiles of innovation providers (e.g. Enterprise Europe Network EEN) and thus serve as a major source of suppliers. In southern and eastern European countries, the use of the European Regional Development Fund ERDF may play an important role. For example, the IPB

launches projects to receive ERDF funding and exploit the available funds on the basis of calls of interest for public entities to indicate their needs and organizing a related jury.

Thematic and activity range

Public IPBs typically find funding and resources for innovation brokerage activities by linking it to regular work activities of the hosting public entity (e.g. a regional/national ministry or a federal procurement agency). Depending on the hosting entity's policy on innovation procurement, the time allocated to brokerage activities might differ. This may range from doing occasionally innovation procurement brokerage and offering only a few specific services (e.g. only market research) to hosting a full-size innovation procurement centre offering the complete service portfolio. For the first case, it may be a challenge that the such brokers cannot devote their entire working time to innovation procurement brokerage and might be limited in their IPB outreach due to other work obligations.

Depending on the hosting entity's mandate, the IPB mandate may also be thematically focused. For example, an environmental ministry will have a certain focus on ecological issues whereas a ministry for social affairs will mainly concentrate on health issues whereas a ministry dealing with digitalization will concentrate on Artificial Intelligence, Internet of Things, robotics etc.

5.1.2. Public-private partnership IPB

If IPBs are set up as public-private partnerships (PPP), they should be able to have a good understanding of the rationales of public as well as private sector entities.

Customer relationship

Further advantages are the already established links to both public and private sector organisations. Provided that the broker can maintain effective communication channels and regular information exchange between both sectors they should have a good overview of the needs of the public authorities as well as potential solution providers.

Being neither part of the public sector nor part of the private sector might also be an asset, as both sectors might consider the brokers "part of their sector". Thus, the independent position can provide a strength: despite being partly publicly funded, they do not work directly for the government or funding agencies and can be more flexible in their approach. Challenges still exist within the PPP model of innovation procurement brokerage. It remains complicated to push procurers to be innovative and to ensure the whole organisation (and especially the leaders) is on board.

A specific PPP form is a membership organization with member fees where the PPP staff is working only in form of clearly defined and financed projects together with the members. As a consequence, such an IPB "works only for the members". If these members are either mainly public entities or mainly private entities, the above-mentioned IPB independence is replaced by an orientation and a strength towards the one or to the other side.

Regional embeddedness

Since PPPs are popular with municipalities and especially cities, a PPP-IPB is often linked to one or more municipal/city councils. This regional embeddedness has then characteristics of a public sector IPB (see above).

Thematic and activity range

Each PPP has a mandate which frames the thematic and activity range of the IPB hosted by the PPP. For example, the PPP may have as a starting point a “green mandate with a specific focus on circular economy”, or the “mandate to help local organisations enter markets abroad and assisting their foreign counterparts”. Depending on the mandate, each public-private partnership IPB may have specific skills such as market analyses, strategy development, internationalization, innovation management, or expertise in public funding sources.

5.1.3. Private IPB

Private IPBs are often hosted by innovation agencies, by sector specific professions such as civil engineers in the construction sector, and especially by law firms. Stand-alone IPBs are presently an emerging phenomenon.

Customer relationship

IPBs hosted by an established innovation agency, a sector specific professional or a law firm can start with the hosting entities contacts but may be confronted with the necessity “to create brand awareness”. That is, they have either to win the existing customers for innovation procurement or to recruit new customers interested in innovation procurement. Newly formed stand-alone IPBs tend to encounter more difficulties in getting access to public authorities in general and to address “the right person” in the public organisation in particular. For them, it takes considerable time to talk and explain the principles and processes of innovation procurement to the public authorities and to win their trust for innovation procurement projects. Acquiring suppliers as customers also requires effort, but since they see it “just as business”, for which they are always open, the effort is significantly less compared to contacting and building trust with public entities.

Regional embeddedness

A private IPB can mitigate the difficulty of customer access by liaising with key regional or national agencies or organisations that can connect the private company with public buyers. For example, a broker can adopt this approach by engaging with regional/national agencies that can assist in connecting them with public buyers. Otherwise, a private broker needs to build a network of buyers from scratch, which is a rather time-consuming process and can take years to develop.

Thematic and activity range

A private IPB is basically free to choose a thematic and activity range which is promising from a

business perspective. Depending on the chosen focus, private IPBs can devote more time to the brokerage activities than public brokers, as long as paying customers or other financing sources are available. Experiences show that public authorities are sometimes not in the financial position to pay for external support for brokerage activities, although they will on occasion pay for training on innovation procurement. Funding for innovation procurement brokerage often comes through co-financed projects, which have public authorities as project partners.

5.2. IPB Business Model Canvas

The IPB business model is outlined by following the concept of a Business Model Canvas by Osterwalder/Pigneur⁵¹ along of nine building blocks (Figure 4). In addition, the business model is based on the following assumptions which are derived from the learnings from five pilot innovation procurement cases of the InnoBroker project.

- The business model is based on the assumption of two full-time equivalents, notwithstanding if the IPB is part of an existing organisation or an independent legal entity. We estimate that one full-time equivalent can provide services (see Table 5) for 3-5 brokerages per year.
- This business model may apply either to an IPB as part of an existing organisation or to an IPB as an independent legal entity (“innovation brokerage only”).)

The Business Model Canvas

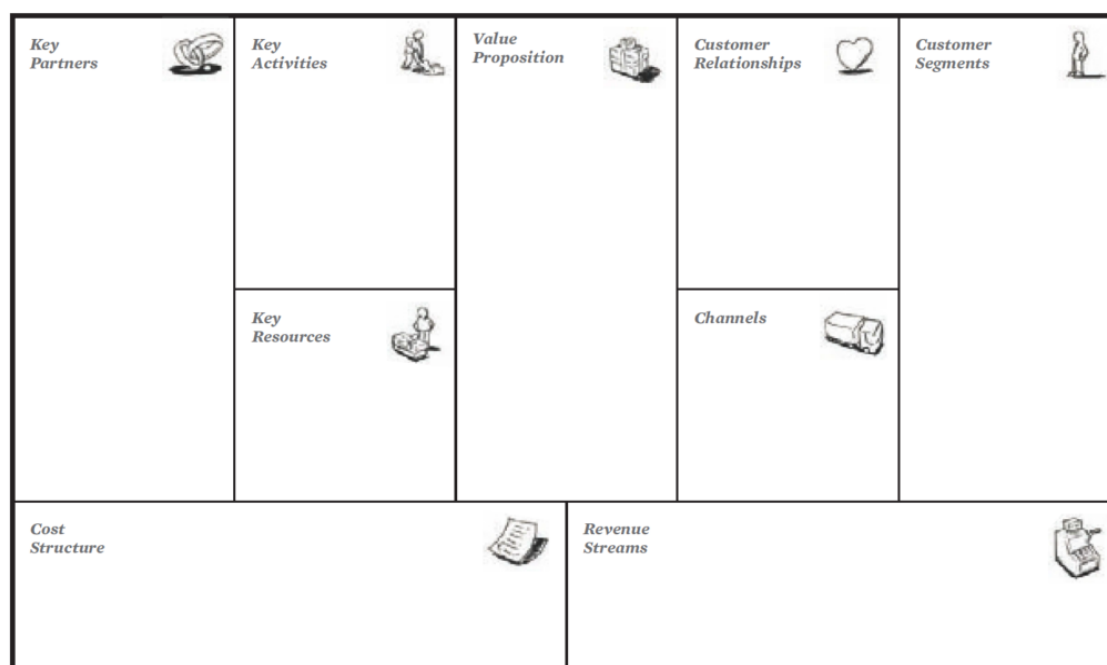
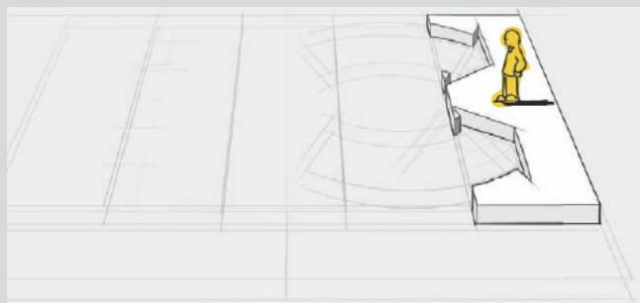


Figure 4: Business Model Canvas with nine building blocks as starting point for business model development (Source: Osterwalder & Pigneur 2010)

⁵¹ Osterwalder, A., Pigneur, Y. (2010) Business model generation. New Jersey: Wiley. This is a widely used model which produced in the meantime a broad range of variety-applications and online resources.

5.2.1. Building block: Customer segments



Customers comprise the heart of any business model. In order to better satisfy customers, they may be grouped into distinct segments with common needs, common behaviours, or other attributes. A business model may define one or several large or small Customer Segments. A conscious decision has to

be made about which segments to serve and which segments to ignore. Once this decision is made, a business model can be carefully designed around a strong understanding of specific customer needs.

Source: Osterwalder & Pigneur (2010: 20)

An innovation procurement broker (IPB) aims to facilitate the procurement of innovative goods and services by strengthening the links between public buyers on the demand side and innovative companies (e.g. SMEs and start-ups) on the supply side. Therefore, the main customer segments of an IPB comprise public buyers (primary target group) and suppliers of innovation (secondary target group). To fulfil the tasks of an IPB successfully and create value for both customer segments, brokers must also maintain regular contact and exchange information with other stakeholder groups (third target group): innovators (such as researchers, technical/legal experts, funding agencies, clusters/networks, business/innovation agencies, incubators, politicians and lobbyists). End-users (e.g. citizens) are indirect beneficiaries of a broker, as they benefit from the innovation procurement (fourth target group).

A **public buyer** is defined as public body (i.e. “public authority”, “body governed by public law”, “contracting authority”)⁵² in charge of acquiring products and services, at regional, national and European level. A public buyer is usually supported by the procurers (usually the buyer’s procurement department), who act as an extended arm of the need owner’s organisation. Need owners usually initiate the procurement process by indicating their needs. These professionals work for public or semi-public bodies (i.e. schools, hospitals, universities). Depending on the legal and institutional embeddedness of the IPB, this customer segment may comprise any public buyer either of e.g. a region, a country or Europe, or is limited to members of a group of public buyers previously defined (e.g. partners of a membership organisation; or public buyers following a specific agenda such as decarbonisation, climate protection, sustainability). Within a buyer’s organisation, an IPB will be in contact with different types of staff: need owner, procurers, decision makers, end-users, etc. For procurement upscaling, the IPB will bring together various buyers with similar needs and deal with a group of independent buyers, rather than with a single buyer.

⁵² OJEU (2014/L/94-24: 66).

Suppliers of innovation are defined as “economic operators”⁵³ offering the execution of innovative works, the supply of innovative products or the provision of innovative services. This may be large enterprises, SMEs, start-ups, business incubators at local, regional, national and European level) that often develop and usually commercialise innovative products or services. These suppliers want to learn about the needs of the contracting authorities, in order to provide them with the right innovative solution. Products and services offered by a single supplier can provide the comprehensive solution to a need. At times, the desired solution for a need consists of individual components that may come from different suppliers (or innovators) and that are combined in a novel and innovative way. In such a situation, the IPB will bring together various suppliers and deal with a consortium of cooperating suppliers rather than with a single supplier.

Innovators as knowledge providers in a broad sense such as researchers, experts, funding agencies, clusters/networks, business/innovation agencies, incubators, politicians and lobbyists. The IPB will draw information on ongoing technological developments from such innovators and from research and transfer facilities within the innovation field, in which businesses and scientific bodies work together, as well as innovation centres fostering innovation in society.

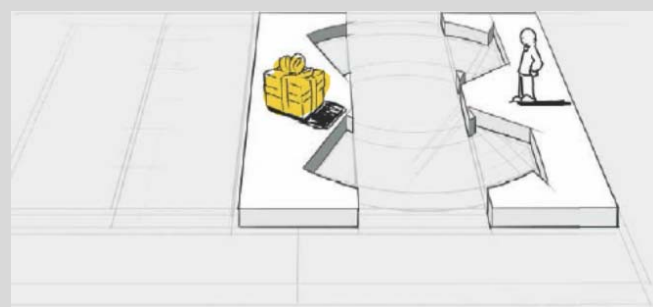
- Knowledge providers in the form of experts can contribute knowledge from different areas: legal (procurement law), technological (scientific and technological advances), social (acceptance of procured product / service by end-users), etc. The IPB will cooperate with external experts when inhouse competence on specialised issues is not available.
- Knowledge providers in the form of intermediaries are stakeholders (individuals or groups) who create or promote links between different actors in the innovation procurement process to complement the skills or interests for the purposes of innovation generation and diffusion.⁵⁴ They can function as entry points to supplies and buyers. Among the main intermediation groups are existing networks, clusters, platforms of suppliers, business/innovation agencies, and incubators who provide support to SMEs and start-ups and give space for innovative solutions to be proposed. These can be at the regional, national and European level. Investors are private parties investing resources and funds into the procurement process, either to economically support the suppliers to develop their innovative solutions or to economically support the public buyers to purchase the innovative solutions (via a public-private partnership).
- Knowledge providers in the form of funding agencies (regional, national, European) provide up-to-date information on current and expected funding opportunities for buyers and supplies.

End-users: The results of an innovation procurement ideally benefit the end-users as well as the citizens and society in general.

⁵³ OJEU (2014/L/94-24: 67).

⁵⁴ Edler, J. & Yeow, J. (2016) Connecting demand and supply: The role of intermediation in public procurement of innovation. Research Policy 45, Issue 2, March 2016, Pages 414-426.

5.2.2. Building block: Value propositions



The Value Proposition is the reason why customers turn to a broker. It solves a customer problem or satisfies a customer need. Each Value Proposition consists of a selected bundle of products and/or services that caters to the requirements of a specific Customer Segment. In this sense, the

Value Proposition is an aggregation, or bundle, of benefits that a company offers customers.

Source: Osterwalder & Pigneur (2010: 22)

By facilitating public procurement of innovation, the IPB aims primarily at providing value for the customer segments public buyers and suppliers. However, the brokers activities leading to the procurement of innovation may also lead to benefits of other stakeholder groups.

A wide range of added value of an innovation procurement broker has been identified for the main target group of buyers (see Table 1). The values are associated with the nine service elements offered by the brokers.

Table 1: Added value of an innovation procurement broker identified for buyers (SE: Service element).

VALUES FOR BUYERS	SE
Organize events such as workshops, info days, roadshows to distribute general information about opportunities and barriers of innovation procurement (i.e. awareness raising)	Procurement promotion
Provide trainings and/or guidance on how to conduct innovation procurement for buyers and prepare for settings where buyers can learn from each other's experiences concerning public procurement	
Show how the buyer can contribute to the regional/national innovation strategy, and how a public body may act as an innovation driver ("role model") and thereby serve as a reference for others	
Support the identification of needs; bringing new ideas, approaches and understanding of innovation to the buyers	Need identification
Draft the first need statement; guiding the buyer through the need specification process step-by-step	
Refine the need for the market; helping to ensure that innovation procurement is not done for the sake of innovation, but that the market challenge reflects real needs	
Provide references on successful prior procurement cases as convincing arguments to get the OK of the hierarchy for a mandate to conduct innovation procurement; and the OK for extra budget if necessary	Strategy development
Support/moderate the internal discussion concerning (i) direct benefits (e.g. cost savings, increase efficiency, higher quality of public services; and (ii) indirect benefits (e.g. contribution to societal goals)	
Support the design of the innovation procurement case by clarifying the strategic dimension within the buyer's organisation (and if necessary, with policy makers) and	

VALUES FOR BUYERS	SE
the internal coordination of the need owning department, the procurement department and the top management	
Carry out market research (state-of-the-art analysis) and early-stage engagement with potential suppliers that public bodies may be unable (or reluctant) to do as well as other relevant stakeholders such as researchers, intermediaries (clusters, networks etc.)	Market analysis
Identify potential solutions (upcoming/ongoing innovations) and shortlist them concerning their relevance for the buyer (i.e. acting as a second opinion and quality control for the public body)	
Identify the degree of innovation of the solutions and the impact on the buyers own organisation and management	
Support a buyer's preliminary market consultation by organizing matchmaking events, providing the external/objective facilitation when the buyer is scoping its need	Need - innovation match
Broaden the possibility of buyers to get access to suppliers which buyers did not know before and initiate supplier-supplier interaction (as a basis of a bidding consortium) in case it is difficult for one supplier to provide an appropriate solution	
Use and further develop existing buyer-networks or establish a network to share knowledge and save resources in public buyers	
Provide the buyer with a framework for launching a procurement case and pass on information about existing funding opportunities (possibly find synergies between different funding sources)	Financing identification
Bridge the buyer's lack of knowledge concerning funding opportunities which enables the buyer to better exploit existing funding opportunities for innovation procurement,	
Support to prepare a project proposal and help in partner search (if required), make the paperwork for the buyer by helping to fill in the forms from the proposal-stage up to the final-project-report	
Search in relevant networks to see whether other buyers may have similar needs or even the same needs	Procurement upscaling
Pitch ideas for upscaling by using innovation procurement networks/platforms at regional, national or European levels	
Clustering procurers with similar needs at regional, national, or European level as a basis for possible joint-procurement or collaboration-procurement between buyers	
Help the buyer to decide on the appropriate procurement procedure/approach, e.g. competitive procedure with negotiation, competitive dialogue, innovation partnership, pre-commercial procurement (PCP); and support their execution if appropriate (may include to link to legal experts)	Tender-procedure support
Support the definition of technical specifications (e.g. definition of performance requirements and/or functional requirements, clarification whether the transfer of IPRs will be required), the definition of the award criteria and their weighting, and the evaluation of the submitted tenders	
Support the dissemination of the invitation to tender towards suppliers e.g. via newsletters, existing networks (clusters), and relevant EEN-sector-groups	
Offer references such as a "catalogue of good practices" in the forms of a brochure or an online-database as inspiration for buyers; and serve as a knowledge-hub that a public body can access easily	Benefit demonstration
Organize events such as workshops, info days, roadshows by using networks, platforms, partners meetings etc.	
Organizing on-site demonstrations or the testing of new solutions (prior to a procurement); making use of labs if they exist	
The brokers expertise results in time savings for the buyer during the procurement process	General values
The brokers expertise results in mitigating the risk aversion of the public body by explaining options	
The brokers expertise results in higher procurement efficiency	

A survey among 11 buyers participating in the pilot innovation procurement cases of InnoBroker assigned highest importance to values related to the following service elements: market analysis, need-innovation match, and financing identification. In addition, high ratings were given also to general values dealing with time saving and higher procurement efficiency. The value that received top ratings from all surveyed buyers is: *Support a buyer's preliminary market consultation by organizing matchmaking events, providing the external/objective facilitation when the buyer is scoping its need with suppliers.*

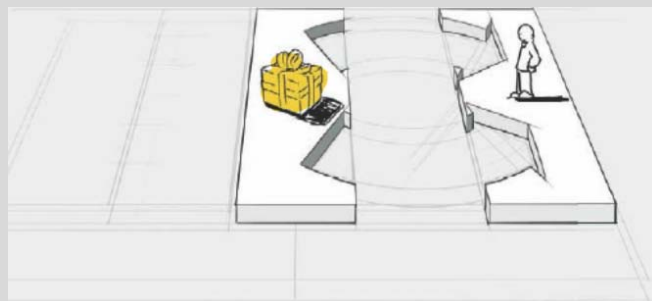
An IPB also creates added value for suppliers of innovation (Table 2).

Table 2: Added value of an innovation procurement broker identified for suppliers of innovation.

VALUES FOR SUPPLIERS
Receiving support to get into public tendering
Being connected with public buyers of innovative goods and services interested in learning more about what a supplier can offer to them.
Benefiting from exchange spaces where public buyers and suppliers meet and discuss their needs and wants, and the possible innovative solutions
Driving innovation
Triggering the demand for innovative solutions that do not exist yet and that, afterwards, will be available for the whole market
Entering new markets and gaining reference customers
Opening a market for research services for tailor-made innovative solution
Gaining the opportunity to introduce new products on a larger scale
Increasing the chance for SMEs to access public procurement volumes via regional networking and measures such as EEN technology requests
Contributing to market upturn
Getting introduced to a network of suppliers
Cooperating with other suppliers to form supplier consortia
Introducing suppliers to cross-border innovation procurement practices when public buyers from different countries having the same needs join efforts to look for solutions

During the brokerage process, end-users incl. society benefit mainly through cost-effectiveness of the procurement process, and savings of time and money by the public buyers. However, most benefits for society are realised only when the procured product or service is implemented by gaining new services and infrastructure, improvement of quality of life, bringing social and environmental benefits, creating skilled jobs, transferring ideas across sectors, and enhancing international competition. Mission-oriented public procurement of innovation can also drive mitigating grand challenges such as global warming, tightening supplies of energy, water and food, ageing societies, public health, pandemics or security and solve societal problems.

5.2.3. Building block: Channels



The Channels Building Block describes how a broker communicates with and reaches its Customer Segments to deliver a Value Proposition. Communication, distribution, and sales Channels comprise a broker's interface with customers. Channels are customer touch points that play an important role

in the customer experience. They serve several functions, including (i) raising awareness among customers about a broker's services; (ii) helping customers evaluate a broker's Value Proposition; (iii) allowing customers to purchase specific services; (iv) delivering a Value Proposition to customers; (v) providing post-purchase customer support

Source: Osterwalder & Pigneur (2010: 26)

Main addressees of an IPB's communication activities are the customer segments of public buyers (depending on the area of activity nationally and European) and suppliers (regionally / nationally / internationally), but also secondary target groups such as innovators (e.g. from universities) and intermediaries. The wider society will not be addressed directly, unless for awareness raising.

The IPB has several communication goals:

- Awareness raising among customers about a broker's services, and value creation
- Demonstration of benefits and use cases
- Establishing of a business relationship with buyers and suppliers (and other stakeholders involved) and starting a business cooperation
- Information exchange (keeping pace with buyers' needs and technology developments; disseminating news on relevant information, e.g. funding opportunities, latest innovation trends, market/innovation opportunities)
- Support in the procurement process (for buyers and suppliers)
- Networking activities (maintaining existing contacts of the broker / broker organisation and establishing new contacts)

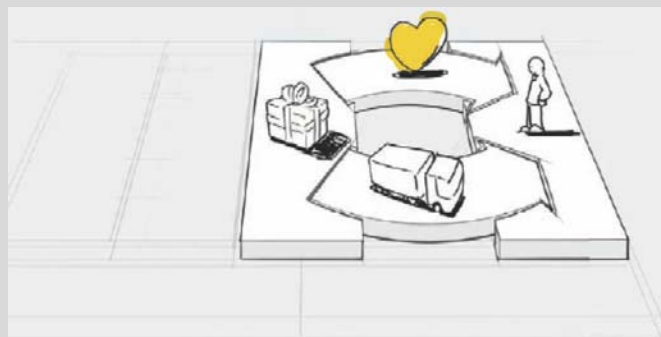
The IPB will develop and implement a range of communication and dissemination activities to promote the brokerage services and the other communication goals. Communication activities will start as soon as the broker has started his/her services and will be targeted at multiple audiences. Initially, the IPB will use his/her existing network/partnership base for communication activities and continuously establish new contacts to other networks, clusters, experts, universities, research institutes, etc.

Brokers will use different channels to establish contacts and communicate with customers and other stakeholders. Suggestions for useful communication channels are listed in Table 3.

Table 3: Communication channels used by innovation procurement brokers

COMMUNICATION CHANNEL	CUSTOMERS			
	PUBLIC BUYER	SUPPLIER INCL. INNOVATOR	INTER-MEDIARY	SOCIETY
Attend specialized conferences, annual meetings of relevant forums, trade fairs, etc. for networking activities and promotion	x	x	x	
Participate in suppliers' events and indicate use case for their innovative products		x	x	
Liaise with governmental and industry bodies	x	x	x	
Actively engage in networks and regional/national clusters to increase visibility	x	x	x	
Use electronic search platforms (e.g. EEN) and other databases for search of suppliers		x		
Organize information days, round tables and (training) workshops (e.g. triggered by the launch of upcoming funding opportunities, or for dissemination of specific needs of buyers)	x	x	x	
Meet (informally) with stakeholders (one-by-one meetings)	x	x	x	
Make regular phone calls to stakeholders	x	x	x	
Exchange regularly E-mail with stakeholders	x	x	x	
Cooperate with stakeholders (e.g. in projects)	x	x	x	
Participate in European projects (e.g. H2020) to learn about procedures, needs, etc	x	x	x	x
Circulate newsletters (e.g. indicating that funding is available)	x	x	x	x
Maintain a Website for dissemination of information and news	x	x	x	x
Use online social/business networks (LinkedIn, Facebook, Twitter) and other online platforms (Youtube, blogs)	x	x	x	x

5.2.4. Building block: Customer relationships



The Customer Relationships Building Block describes the types of relationships a broker establishes with specific Customer Segments. A broker should clarify the type of relationship it wants to establish with each Customer Segment. Relationships can range from personal to automated. Customer relationships may be driven by the

following motivations: (i) customer acquisition; (ii) customer retention; (iii) boosting sales (upselling).

Source: Osterwalder & Pigneur (2010: 28)

For an IPB it is important to have regular communication and information exchange with the primary customers as well as with intermediaries (as entry points to buyers and new business sectors) and experts. The overall aim of the IPB's business relations is to establish long-term relationships, especially with public buyers and intermediaries to enable follow-up projects. When the specific needs of public buyers requiring innovative solutions are met, buyers might come up with new needs, requiring new solutions from different suppliers. Personal relationships with all customer segments tend to intensify the contact, however, building personal relationships with customers is a time-intensive and therefore costly process. Maintaining personal business relationships helps to understand better the customers' needs, capabilities, organisational constraints, challenges etc., allowing the broker to adjust and focus the brokerage services to the customers.

In the following the different types of relations between brokers and stakeholder are described.

Nature of relationship with public buyers:

- Buyers are the main customers, as service elements of the IPB are designed primarily to support public buyers in the procurement process.
- Brokers usually approach buyers to start an innovation procurement project (customer acquisition).
- Brokers provide services and guidance to buyers to facilitate public procurement of innovation.
- Brokers provide up-to-date information on procurement processes, funding opportunities, market and innovation trends and bring in creativity when defining needs specifying solutions in the development of innovation procurement projects (which can also lead to upselling).

- Brokers contact buyers with similar needs to enable upscaling of innovation procurement.
- Brokers seek to retain buyers in order to facilitate follow-up innovation procurement projects.
- Brokers seek to understand the buyer's rationality and the organisational and functional set-up of the buyer's organisation (for successful brokerage it is important that the "right" people within the buyer's organisation are approached).
- Brokers build a relationship with the buyer based on trust.
- Brokers keep up to date with buyers' needs.

Nature of relationship with suppliers:

- Suppliers are secondary customers, as public procurement of innovation depends on the supply of an innovative product or service.
- Brokers need to identify suppliers of innovation with solutions that meet the buyer's need (customer acquisition).
- Brokers need to understand the technical characteristics of the supplier's product or service to assess the suitability of a potential solution.
- Brokers help suppliers (especially start-ups) to develop ideas on how the public sector could use their products or services (also in cooperation with suppliers of other components of a potential solution).
- Brokers provide guidance to the suppliers during the procurement process.
- Brokers stay up to date with suppliers' innovative developments (e.g. within a sector).

Nature of relationship with innovators:

- Innovators introduce new technological or social ideas and form the basis for innovative solutions to a buyer's need.
- Brokers are in regular contact with innovators to be informed about ongoing developments in a particular technological area, new products or future products that are still in development.
- Brokers inform innovators about current needs of public authorities.
- Brokers act as a bridge between innovators, suppliers and buyers.

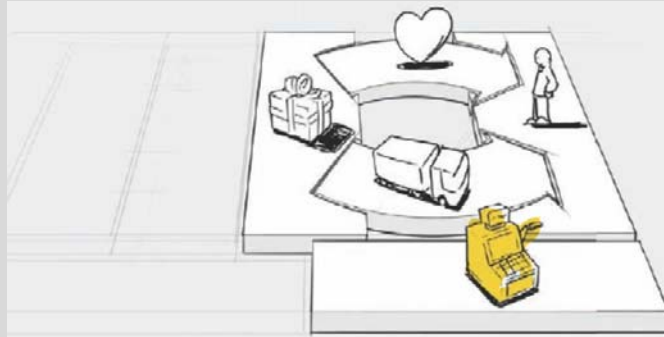
Nature of relationship with intermediaries:

- Intermediaries are usually platforms and public agencies that support customers from the public or private sector (e.g. business agencies).
- Brokers seek contact to intermediaries as they can provide access to the public sector (buyers) or to new business sectors (innovators and suppliers).
- Brokers liaise with intermediaries to obtain information about ongoing developments that are relevant to their customers (e.g. technological development, market trends).

Nature of relationship with experts:

- Experts, such as legal or technical experts, can provide know-how that is relevant for the procurement process of innovation but is not available internally to the broker.
- Brokers obtain information from experts for specific innovation procurement projects or cooperate in a project as consortium partners.

5.2.5. Building block: Revenue streams



The Revenue Streams Building Block represents the cash a broker generates from each Customer Segment (costs must be subtracted from revenues to create earnings). If customers comprise the heart of a business model, Revenue Streams are its arteries. A broker must ask itself, for what value is each Customer

Segment truly willing to pay or (if for free) truly trusting that the broker service is helpful/valuable? Each Revenue Stream may have different pricing mechanisms, such as fixed list prices, dependent on the price-level of a region/nation, or volume dependent. A business model can basically involve two different types of Revenue Streams: (i) transaction revenues resulting from one-time customer payments; (ii) recurring revenues resulting from ongoing payments to either deliver a Value Proposition to customers or provide post-purchase customer support.

Source: Osterwalder & Pigneur (2010: 30)

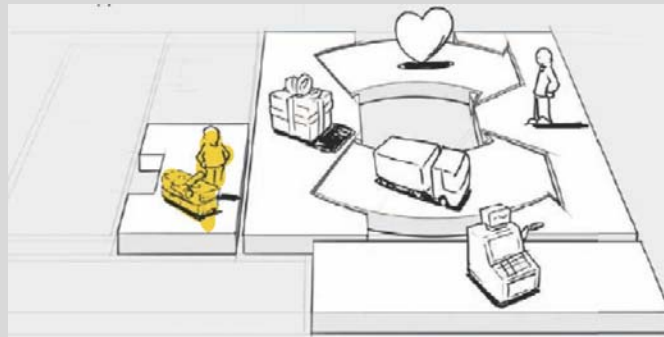
An IPB offers a set of nine different service elements, covering a range of diverse tasks that need to be financed. The brokerage activities for the public buyers involved in the pilot innovation procurement cases of the InnoBroker project were not charged but financed from other resources (e.g. own resources of the broker; public funding from the regional / national / international level, or membership fees). Feedback from the buyers involved in the InnoBroker project showed that most buyers are willing to pay for brokerage services to some extent. Depending on the buyer's organisation, not all service elements are required by the buyer in a procurement process when approaching a broker for support. For example, in some cases the buyer has already clearly specified the need and does not need support for need identification. In such a case, buyers will not buy the service element "need identification". Brokers need to negotiate with the buyer about the type of support needed. Consequently, the buyer would only be charged for the necessary elements of the service portfolio. At present, it is not planned to charge the suppliers for the brokerage. In the future, however, success fees could be an option (based on contracts between buyers and suppliers).

Possible revenue streams include:

- Payments by buyers: The cost of a broker is borne by buyers, depending on the services they have used. While larger buyer organisations are willing to pay for such support, smaller buyer organisations are often not in the financial position to pay for brokerage services.
- Fees of member organisations

- External public funding through regional, national or European funding opportunities (e.g. H2020, ERDF)
- Government subsidization
- Funding by private investors

5.2.6. Building block: Key Resources



The Key Resources Building Block describes the most important assets required to make a business model work. Every business model requires Key Resources. These resources allow a broker to create and offer a Value Proposition, reach markets, maintain relationships with Customer Segments, and earn revenues.

Different Key Resources are needed depending on the type of business model. Key resources can be physical, financial, intellectual, or human. Key resources can be owned or leased by the broker or acquired from key partners.

Source: Osterwalder & Pigneur (2010: 34)

The key resources needed for an IPB are mainly human, financial, and intellectual resources.

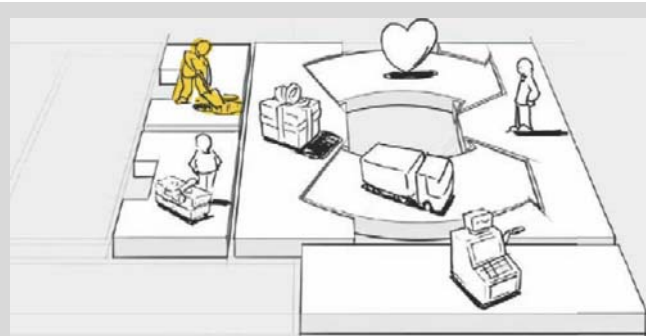
Human resources: Brokerage of public procurement of innovation depends strongly on the specific competences of an IPB, both in terms of expert knowledge and personal skills. An IPB should have a sound knowledge and understanding of the public procurement process, innovation, facilitation, project and change management as well as technological competence. If an IPB is not a legal expert, the IPB should at least have access to legal advice on public procurement law and IPR (either internal or external). Experience in working with public administrations and knowledge of their strategies and policy priorities are as crucial to successful public procurement as appreciating the way companies think and work. Interactions with end users are sometimes helpful for the specification of needs.

In addition, an IPB needs to be a strong communicator and network builder and maintain good relationships with buyers and suppliers. Building and using contacts in the procurement sector (organisations and people) is one of the core competencies of an IPB. An IPB must also be a good listener to be able to identify and specify the real need of the customer and must have good analytical skills to oversee the entire procurement process.

Intellectual resources (including knowledge of methodology): An IPB must have an established working process for identifying buyers, needs, and suppliers. A methodology and a set of tools including schemes and templates for group activities and searches, are key to a smooth facilitation process of innovation procurement brokerage.

Financial resources are needed to cover personnel costs and other expenses (e.g. travel expenses; costs for event organisation, training material, and networking activities. Depending on how the broker is embedded in an organisation and the legal form of the broker organisation, maintenance of the work environment (i.e. physical resources) must also be covered.

5.2.7. Building block: Key Activities



The Key Activities Building Block describes the most important things a broker must do to make its business model work. Every business model calls for a number of Key Activities. These are the most important actions a company must take to operate successfully. Like Key Resources, they are required to create and offer a Value Proposition,

reach markets, maintain Customer Relationships, and earn revenues.

Source: Osterwalder & Pigneur (2010: 36)

The tasks associated with the nine service elements (Table 4) are the key activities of an IPB.

Table 4: Key activities of an Innovation Procurement Broker (service portfolio)

SERVICE ELEMENTS
Procurement promotion
Need identification
Strategy development
Market analysis
Buyer-supplier matching
Financing identification
Procurement upscaling
Tender-procedure support
Benefit demonstration

Buyers involved in the pilot innovation procurement cases of the InnoBroker project identified the following key activities as the most relevant for them:

- Support in areas related to the innovation procurement process that are different from the “traditional” public procurement: needs identification and prioritisation, preliminary market consultation, tender specifications
- Information and training in public procurement of innovation

- Identification of potential suppliers of innovation and market analysis / market consultation; obtaining market information about new and trustworthy solutions
- Research of collaborative buyers
- Support with the technical specifications of the tender (including paperwork)
- Matchmaking events: Opportunity to meet all partners involved in innovation procurement and have personal exchange with buyers and suppliers in an open and trustworthy manner and not in direct relation to an ongoing procurement case
- Economies of scale when several buyers are involved in an innovation procurement project (better price if need of the partners is aggregated; new applications of a single buyer can be used by other buyers to demonstrate the usability of the product)
- Procurement promotion through case studies and demonstration of benefits to provide arguments to the decision-makers or a public authority
- Identification of funding opportunities
- A price forecast, as budgets must be set at an early stage in the process
- Upscaling of the pilot innovation procurement case to achieve better prices based on buyer numbers

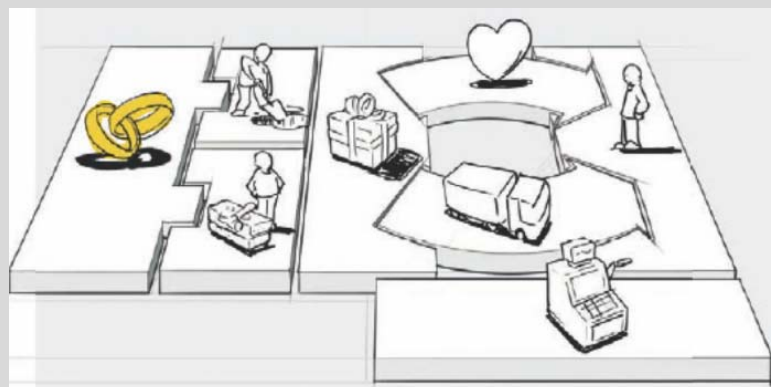
Services specifically aimed at suppliers:

- Market engagement activities
- Information and guidance on how suppliers can participate in public innovation procurement tenders
- Helping to identify how the innovative product or service of a supplier could become a solution to the buyer's need (due to a lack of experience with public buyers some suppliers cannot assess to what extent they can serve public buyers with their product)
- Ideas for pilot projects

General activities of an IPB:

- Obtaining information from the innovation market
- Establishing networks with and for public buyers, suppliers and other stakeholder groups
- Participating in innovation events
- Building bridges to incubators and accelerators
- Continuous broker qualification and further training

5.2.8. Building block: Key Partnerships



The Key Partnerships Building Block describes the network of suppliers and partners that make the business model work. Brokers forge partnerships for many reasons, and partnerships are becoming a cornerstone of many business models. Brokers create alliances to

optimize their business models, reduce risk, or acquire resources. We can distinguish between four different types of partnerships: (i) strategic alliances between non-competitors; (ii) coopetition, i.e. strategic partnerships between competitors; (iii) joint ventures; (iv) buyer-broker relationships to assure reliable services.

Source: Osterwalder & Pigneur (2010: 38)

Strategic alliances between non-competitors (providing information or contacts necessary for the provision of brokerage services): An IPB must seek strategic alliances with knowledge providers in terms of providing access to the primary customer segments (e.g. intermediaries, relevant networks and cluster associations), technological developments and innovation (incubators/accelerators, universities), market trends (business agencies and platforms, market analysts), foreseeable needs of public buyers (policy makers); and experts in public innovation procurement processes and law (law firms, procurement lawyers), technology (innovators, such as knowledge/research institutes and universities), and stakeholder involvement as well as funding sources and procedures (funding organisations, investors).

Strategic partnerships between competitors (coopetition) include other brokers and broker organisations at national and international level to help upscale innovation procurement cases and exchange information on professional developments, procurement lawyers/procurement experts offering selected services of a broker, and national central purchasing organisations to keep abreast of current national and international trends and developments in public procurement of innovation.

Relationships between the IPB and primary customers (buyers, suppliers) to assure reliable services: An IPB needs to be familiar with internal procurement processes and hierarchies of public authorities and aware of ongoing strategic developments of major buyers to spot opportunities. The IPB should also be aware of interdependencies between different departments of public authorities and be able to identify individual staff members relevant to public procurement of innovation (need owners, procurers, financial managers, decision makers). Good contact with individual suppliers and supplier alliances makes it easier for IPB to

expand his/her network with other suppliers and to keep information abreast on current technological and business developments. Buyers and suppliers can also be used for use case demonstrations.

6. Outlook and recommendations for future IPB

The innovation Procurement Broker (IPB) business model presented here is derived from the generalized learnings of five innovation procurement brokerage pilots in various European regions. The involvement of more than 20 public buyers and more than 100 suppliers (suppliers including 13 start-ups and 30 SMEs) and the realization of a high degree of innovation (solution is new for buyers as well as for suppliers) provides a sound empirical basis.

- It is therefore recommended to merge the InnoBroker learnings with learnings of other ongoing initiatives (national, European, international) with the goal of expanding the empirical evidence (opportunities and barriers, the dos and don'ts, catalogue of good practice cases) and preparing for replication.

Each of the InnoBroker pilots operated under specific conditions. That is, the legal nature of an IPB (public sector IPB, public-private-partnership IPB, private IPB) is usually combined with a certain funding mode and/or mandate which may define its customer relationships, its regional embeddedness, and its thematic and activity range.

- It is therefore recommended to continue the "proof of concept" of the IPB business model presented here in other countries/regions (adaptive replication) with the aim of deepening the understanding of brokerage under specific conditions and of using the corresponding learnings for a possible update of the IPB business model.

Networks are a key asset of an IPB. This is true at regional as well as European level. On the one hand, if an IPB does not have access to the "right person" (i.e. a need owner or the top management) within a public entity, it may require months or even years to establish reliable contacts and get an understanding for unmet needs. On the other hand, if an IPB does not have access to market data and the broad range of possible suppliers of solutions, the achievement of "procuring innovation" may be quite limited.

- It is therefore recommended to provide for a step-by-step establishment of a European IPB association with the aim of providing a stable forum for exchanging and merging IPB learnings, for collecting and presenting good practices of innovation procurement, and especially for benefiting from the interlinking of the networks each participating IPB brings in. The first step towards a European IPB association could be the establishment of a loosely coupled network of IPBs and IPB candidates, with activities based on clearly defined milestones related to bridging between unmet needs and possible innovative solutions, facilitating the realization of innovation procurement cases, and monitoring the achievement of innovation.

7. Annex 1 “Analysis of costs and benefits” of IPB

This is an independent deliverable numbered D1.3.



8. Annex 2 “Tools”

The tools compiled in this section have been developed, tested and used in the course of the InnoBroker project.

The tools comprise:

- Tool “Degree of innovation”
- Tool “IPB value”
- Tool “Need assessment”
- Tool “Post workshop report”
- Tool “EEN technology request”
- Tool “Innovation opportunity assessment”
- Tool “IPlytics”

8.1. Tool “Degree of innovation”

WHAT WE WOULD LIKE TO KNOW...	EXPERIENCES OF THE <u>PUBLIC BODY</u> (BUYER)
Is the needed solution new to the public body's organization?	
Does the public body expect that the needed solution will require follow up innovation in their organization? Example 1: implementation of the new solution requires process innovation Example 2: implementation of the new solution requires organizational innovation (new skills, staff etc.)	
As far as the public body knows, is the needed solution new to suppliers? Example 1: solution is new to the buyer but already exists on the market ready off-the-self Example 2: solution is new to the buyer and partly new to the supplier(s) because of customizing requirements; i.e. you can purchase off-the-shelf software, or have it customized to suit your needs Example 3: solution is new to the buyer and the supplier, but R&D was mainly done and prototypes etc. exist and may have been presented by suppliers at trade fairs etc. Example 4: solution is new to the buyer and the supplier; i.e. does not exist on the market and R&D is necessary	
Is the solution new for the local, national, European(global) market according to the specific buyer(s)? Answer should be a result of the local/national and European market dialogues, technology requests etc.	
WHAT WE WOULD LIKE TO KNOW...	EXPERIENCES OF THE <u>SUPPLIER</u>
Does the delivery of the needed solution include the customizing of an already existing product/service of your firm? Example: software customized to suit the buyer's needs	
Does the delivery of the needed solution include the testing and/or upscaling of already existing prototypes in your firm? Example: software prototype, machine prototype etc.	
Does the delivery of the needed solution include to conduct R&D in your firm (or with partners)? Example: needed solution has not been considered in the past in the firm; request is thus simulating the firm to innovate	

8.2. Tool “IPB value”

Note: Let the public body indicate the relevance of the value to them (high - medium - low) and allow to revise the wording if necessary and to add other values if appropriate.

	VALUES OF AN INNOVATION PROCUREMENT BROKER	HIGH	MEDIUM	LOW
Need identification	Value: Support the identification of needs; bringing new ideas, approaches and understanding of innovation to the buyers			
	Value: Draft the first need statement; guiding the buyer through the need specification process step-by-step			
	Value: Refine the need for the market; helping to ensure that innovation procurement is not done for the sake of innovation, but that the market challenge reflects real needs			
IP Strategy development	Value: Provide references on successful prior procurement cases as convincing arguments to get the OK of the hierarchy for a mandate to conduct innovation procurement; and the OK for extra budget if necessary			
	Value: Support/moderate the internal discussion concerning (i) direct benefits (e.g. cost savings, increase efficiency, higher quality of public services; and (ii) indirect benefits (e.g. contribution to societal goals)			
	Value: Support the design of the innovation procurement case by clarifying the strategic dimension within the buyer's organization (and if necessary, with policy makers) and the internal coordination of the need owning department, the procurement department and the top management			
Market analysis	Value: Carry out market research (state-of-the-art analysis) and early-stage engagement with potential suppliers that public bodies may be unable (or reluctant) to do as well as other relevant stakeholders such as researchers, intermediaries (clusters, networks etc.)			
	Value: Identify potential solutions (upcoming/ongoing innovations) and shortlist them concerning their relevance for the buyer (i.e. acting as a second opinion and quality control for the public body)			
	Value: Identify the degree of innovation of the solutions and the impact on the buyers own organization and management			
Buyer-supplier matching	Value: Support a buyer's preliminary market consultation by organizing matchmaking events, providing the external/objective facilitation when the buyer is scoping its need with suppliers			
	Value: Broaden the possibility of buyers to get access to suppliers which buyers did not know before and initiate supplier-supplier interaction (as a basis of a bidding consortium) in case it is difficult for one supplier to provide an appropriate solution			
	Value: Use and further develop existing buyer-networks or establish a network to share knowledge and save resources in public buyers			

Financing identification	Value: Provide the buyer with a framework for launching a procurement case and pass on <u>information about existing funding</u> opportunities (possibly find synergies between different funding sources)			
	Value: Bridge the buyer's lack of knowledge concerning funding opportunities which enables the buyer to better <u>exploit existing funding</u> opportunities for innovation procurement,			
	Value: Support to prepare a project proposal and help in partner search (if required), make the paperwork for the buyer by helping to fill in the forms from the proposal-stage up to the final-project-report			
Procurement upscaling	Value: Search in relevant networks to see whether other buyers may have similar needs or even the same needs			
	Value: Pitch ideas for upscaling by using innovation procurement networks/platforms at regional, national or European levels			
	Value: Clustering procurers with similar needs at regional, national, or European level as a basis for possible joint-procurement or collaboration-procurement between buyers			
Tender-procedure support	Value: Help the buyer to decide on the appropriate procurement procedure/approach, e.g. competitive procedure with negotiation, competitive dialogue, innovation partnership, pre-commercial procurement (PCP); and support their execution if appropriate (may include to link to legal experts)			
	Value: Support the definition of technical specifications (e.g. definition of performance requirements and/or functional requirements, clarification whether the transfer of IPRs will be required), the definition of the award criteria and their weighting, and the evaluation of the submitted tenders			
	Value: Support the dissemination of the invitation to tender towards suppliers e.g. via newsletters, existing networks (clusters), and relevant EEN-sector-groups			
Benefit demonstration	Value: Offer references such as a "catalogue of good practices" in the forms of a brochure or an online-database as inspiration for buyers; and serve as a knowledge-hub that a public body can access easily			
	Value: Organize events such as workshops, info days, roadshows by using networks, platforms, partners meetings etc.			
	Value: Organizing on-site demonstrations or the testing of new solutions (prior to a procurement); making use of labs if they exist			
Procurement promotion	Value: Organize events such as workshops, info days, roadshows to distribute general information about opportunities and barriers of innovation procurement (i.e. awareness raising)			
	Value: Provide trainings and/or guidance on how to conduct innovation procurement for buyers and prepare for settings where buyers can learn from each other's experiences concerning public procurement			
	Value: Show how the buyer can contribute to the regional/national innovation strategy, and how a public body may act as an innovation driver ("role model") and thereby serve as a reference for others			

General values	Value: The brokers expertise results in time savings for the buyer during the procurement process			
	Value: The brokers expertise results in mitigating the risk aversion of the public body by explaining options			
	Value: The brokers expertise results in higher procurement efficiency			
	Value:			
	Value			
	Value:			

8.3. Tool “Need assessment”

Date and place of the assessment	[dd.mm.yy]
Participants and titles (departments)	
Theme of exploration	
SUBJECT OF PROCUREMENT	
What are the needs for your upcoming procurement?	[Mandatory field to answer]
Why do you need a new solution? (key drivers for change/new achievements, insufficiency in the current procurement)	[Mandatory field to answer]
How is the problem/need being solved through procurement today? (Who are the users? Who is involved internally? Suppliers? Tender specifications?)	[Mandatory field to answer]
When do you need a new solution? (how urgent is it/ or how long is it expected to reach a new solution? (remember to link to government policies, national goals and own municipality level goals)	[Mandatory field to answer]
What is your initial best-case story on how the procurement can be improved? (Any alternatives to current solutions already explored?)	
Who needs a new solution? (i.e. who “owns” the problem?)	
OPPORTUNITIES FOR INCREASED SUSTAINABILITY	
Are there any sustainability drivers within your needs? (for example, the need to save energy, the need to minimise waste, the need to improve air quality for citizens, or the need to consider a circular approach to supply)	
What are your current ideas for a more sustainable procurement within the specific topic?	
What existing solutions for a more sustainable procurement do you already know of?	
MARKET ASSESMENT	
Has your public authority engaged in market dialogue for previous tenders related to this field? (Are there any previous business case or assessment results to build upon?)	
What would you like to ask the market?	[Mandatory field to answer]
What results and outcomes would you hope to get from the market dialogue process? (e.g. identify potential new solutions, test the feasibility of your needs against what is available in the market, allow suppliers time to plan and prepare)	[Mandatory field to answer]

MODELS OF PPI	
What is your experience with PPI?	
What models of PPI are you aware of?	
How could an innovation procurement broker support you during a PPI process?	
INTERNAL ORGANISATION AND SUPPORT	
What are the planned procurements that relate to your identified need?	
How does management support the procurement of new solutions? And what are the success criteria of the management?	
What is the link between the procurement of new, more sustainable solutions and political strategies?	
In your opinion, how should the procurement be organized?	
What are your organizational experiences with innovation projects?	
JOINT PROCUREMENT	
Do you know any other public offices in search of the same (or similar) problem solving solutions as you are?	
What is your experience with joint procurement?	
What is your experience with joint market dialogue?	

8.4. Tool “Post workshop report”

Date	[dd.mm.yy]
Respondents / writers	
Theme of exploration, and which materials / assessment scheme the report is based on On behalf of who? (1 or several recruited partners?)	
DEMAND(S) ESTABLISH A CLEAR DEMAND	
Demand explained and described (functionalities) Incl. volume indication	[Mandatory field to answer]
Key objectives and outcomes for a potential procurement	[Mandatory field to answer]
BENEFITS ESTIMATIONS	
Main benefits (economic, social, environmental, other?)	[Mandatory field to answer]
Secondary benefits (economic, social, environmental, other?)	
Effects Quantitative (e.g. 20 % lower amount of complaints) Qualitative (E.g. Image, strategy, improved citizen quality, support for local business life)	[Mandatory field to answer]
COST ESTIMATIONS	
Current cost level of existing solutions	
Additional costs for a ‘perfect’ solution	
What is the relevance and importance of using TCO estimations?	
DEVELOPING PRELIMINARY SPECIFICATIONS DEVELOP AN ARTICULATE, CLEAR, COMPREHENSIVE HIGH-LEVEL STATEMENT OF NEEDS	
Standards and/or labels	(Use for inspiration Technical standards, labels and the EU and national GPP criteria)
Criteria (and weighting) for a new solution? <ul style="list-style-type: none"> • Environmental • Social • Economic • Sustainability • Circularity 	
Functionalities desired (avoid full descriptions) Specify any sustainability requirements or preferences, including strategies to: avoid unnecessary consumption, improve efficiency and reduce waste minimize environmental impact over whole of life consider suppliers’ sustainability credentials and approach to corporate social responsibility	[Mandatory field to answer]
Circular economy ideas if relevant Product design, its use phase and end-of life (using buy-sell back, buy-resell and Product Service Systems) Include product vs. service ideas	
Is sole ownership or access necessary, or can ownership be shared?	
Possible technology requests	
Levels and characteristic of uncertainty	

SUITABLE NEXT STEPS	
DEVELOP THE PLAN FOR A MARKET CONSULTATION / DIALOGUE AND OR PRE-INNOVATION PROJECT INITIAL WORK	
Ideas for market involvement (Market consultations / dialogues, PCP projects, Innovation partnerships, PPI etc.), and preference for a local, national or international event?	[Mandatory field to answer]
Market questions specified?	[Mandatory field to answer]
Need for stakeholder endorsement or need-specification endorsement	
Invitation draft for a market dialogue	[Mandatory field to answer]
Timeframe for a dialogue	[Mandatory field to answer]
List of ideas of private companies, suppliers, organizations, experts etc. to attend a market dialogue	
CONTRACTUAL TERMS	
INITIAL ESTIMATIONS AND PROJECTIONS	
Financial track record	
Payments and financial terms	
Subcontracting	
Contractual length	

8.5. Tool “EEN technology request”



The Enterprise Europe Network is the world's largest support network for Small and Medium-sized Enterprises (SMEs) with international ambitions. Co-funded by the European Union's COSME and Horizon 2020 programmes, the Network's aim is to help businesses innovate and grow internationally. The Enterprise Europe Network is active in more than 60 countries worldwide. It brings together 3,000 experts from more than 600 member organisations, including: chambers of commerce and industry; technology poles; innovation support organisations; universities and research institutes, and regional development organisations.

The Enterprise Europe Network offers three broad ranges of services to SMEs:

- International partnerships
- Advice for international growth
- Support for business innovation

For more information on the services provided to SMEs, visit <https://een.ec.europa.eu/>

EEN Technology Request

A Technology Request is a description of a technology, process or specific know-how which is required by the client and which they are willing to source from a prospective partner.

Technology Request Submission Form

Title	
Summary (max. 500 characters)	
Description (max. 4000 characters)	
Technical specifications or Expertise sought (max. 2000 characters)	
Current Stage of Development	<input type="checkbox"/> Already on the market <input type="checkbox"/> Available for demonstration <input type="checkbox"/> Concept Stage <input type="checkbox"/> Field Tested / Evaluated <input type="checkbox"/> Project Already Started <input type="checkbox"/> Project in Negotiations - Urgent <input type="checkbox"/> Proposal under development <input type="checkbox"/> Prototype available for demonstration <input type="checkbox"/> Under development / lab tested
Comments on the Stage of Development	
Intellectual Property Rights	<input type="checkbox"/> Copyright <input type="checkbox"/> Design Rights <input type="checkbox"/> Exclusive Rights <input type="checkbox"/> Other (registered design, plant variety, etc.) <input type="checkbox"/> Patent(s) applied for but not yet granted <input type="checkbox"/> Patents granted <input type="checkbox"/> Secret Know-how <input type="checkbox"/> Trade Marks
Comments on Intellectual Property Rights	

Type and Size of company	<input type="checkbox"/> Industry SME <= 10 <input type="checkbox"/> Industry SME 11-49 <input type="checkbox"/> Industry SME 50 – 249 <input type="checkbox"/> Industry 250-499 <input type="checkbox"/> Industry >500 <input type="checkbox"/> Industry MNE >500 <input type="checkbox"/> Inventor <input type="checkbox"/> Other <input type="checkbox"/> R&D institution <input type="checkbox"/> University
Already engaged in Trans-National Cooperation	<input type="checkbox"/> Yes <input type="checkbox"/> No
Information about cooperation partners sought	
Type and Size of Partner Sought (multiple fields can be selected)	<input type="checkbox"/> SME < 10 <input type="checkbox"/> SME 11-50 <input type="checkbox"/> SME 51 – 250 <input type="checkbox"/> SME 251-500 <input type="checkbox"/> SME >500 <input type="checkbox"/> MNE >500 <input type="checkbox"/> Inventor <input type="checkbox"/> R&D institution <input type="checkbox"/> University
Specific area of activity of the Partner (know-how, clientele, etc)	
Task to be performed by the Partner (Objective, purpose, conditions)	
Type of Partnership Considered (Multiple fields can be selected)	<input type="checkbox"/> Commercial agreement with technical assistance <input type="checkbox"/> Financial agreement <input type="checkbox"/> Joint venture agreement <input type="checkbox"/> License agreement <input type="checkbox"/> Manufacturing agreement <input type="checkbox"/> Research cooperation agreement <input type="checkbox"/> Services agreement <input type="checkbox"/> Technical cooperation agreement
Restrict Dissemination to specific countries	

8.6. Tool “Innovation opportunity assessment”

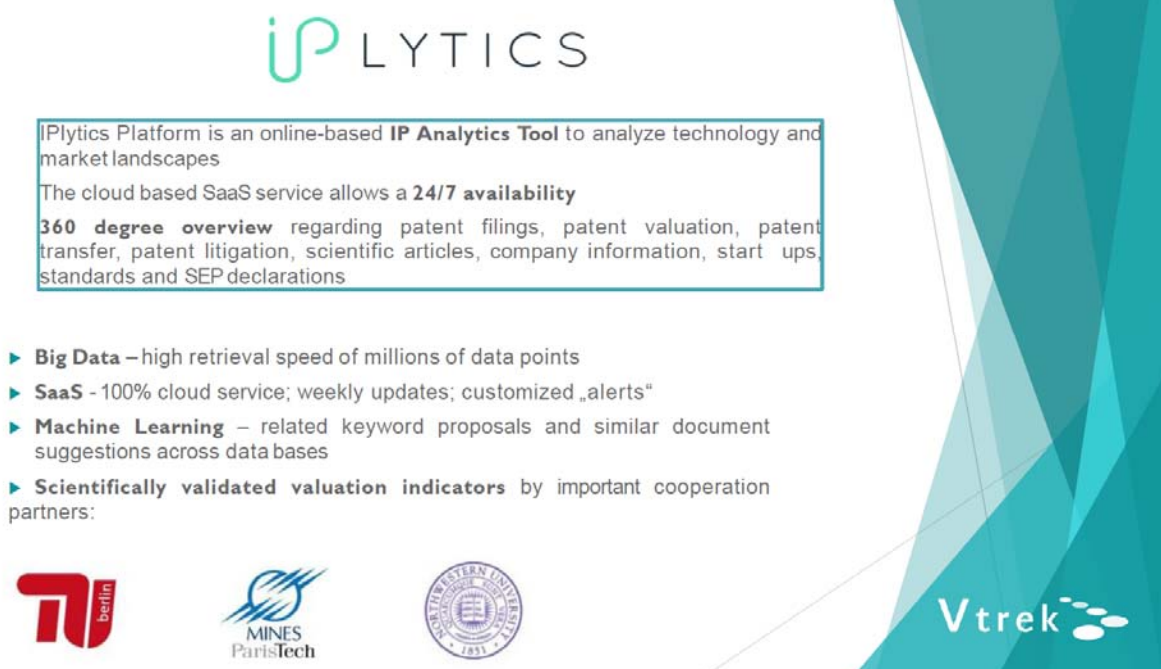
Evaluate each possible innovative solution by scoring between 1 and 10. If appropriate include topic specific columns defined by the buyer: e.g. “increasing security”, “allowing for circularity”, “reducing maintenance”, “improving accessibility”, “saving energy”, “contribution to buyer’s overall strategy”.

	MATCH OF NEED & SOLUTION	DEGREE OF INNOVATION	CONTRIBUTION TO COST- EFFECTIVENESS	POTENTIAL FOR UPSCALING	POTENTIAL FOR REALIZATION (INTERNAL/MARKET)
INNOVATIVE SOLUTION NO 1					
INNOVATIVE SOLUTION NO 2					
INNOVATIVE SOLUTION NO 3					
INNOVATIVE SOLUTION NO 4					
INNOVATIVE SOLUTION NO N					

8.7. Tool “IPlytics”

IPlytics approach: IPlytics is a platform for the analysis and attainment of strategic conclusions by using an artificial intelligence algorithm which allows access to multiple databases on real-time including a large amount of technological data (90 million patents, 60 million scientific publications, 3 million enterprises' profiles, 2 million standards and 250.000 standard essential patents (SEP)).

This platform allows for obtaining an innovation map within a specific technological field and, despite the advantages might outweigh disadvantages, there are certain limitations concerning industrial property: this tool makes no difference between strong and weak patents. The platform detects technological solutions which might be strictly potential patents, therefore, in order to find out whether they are actually patents (strong patents) or just technological inventions (weak patents) it would be necessary to verify each one of the inventions. Likewise, this platform does not detect through search queries the inventions which were originally written in Spanish, consequently we cannot discard that might occur the same with regards to other languages despite that all inventions have been translated into English and the tool provision for search queries in original languages.






IPLYTICS


IPlytics Platform is an online-based **IP Analytics Tool** to analyze technology and market landscapes

The cloud based SaaS service allows a **24/7 availability**

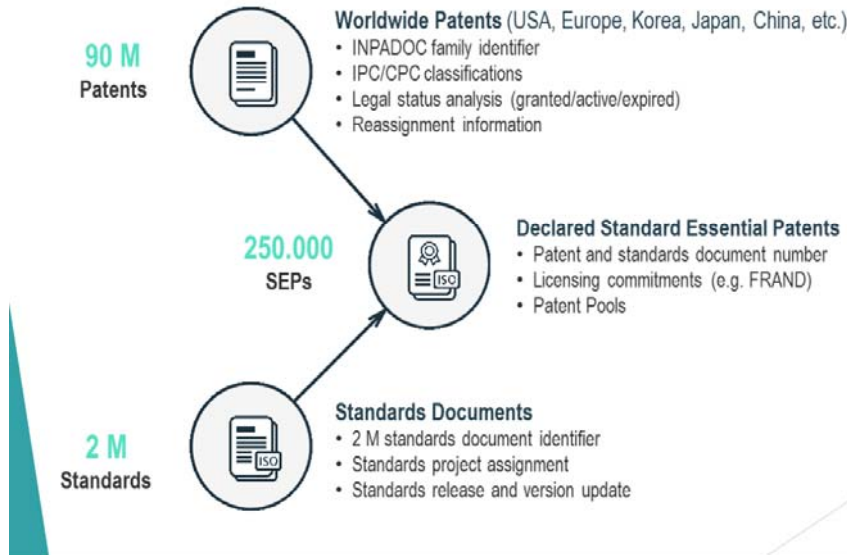
360 degree overview regarding patent filings, patent valuation, patent transfer, patent litigation, scientific articles, company information, start ups, standards and SEP declarations

- ▶ **Big Data** – high retrieval speed of millions of data points
- ▶ **SaaS** - 100% cloud service; weekly updates; customized „alerts“
- ▶ **Machine Learning** – related keyword proposals and similar document suggestions across data bases
- ▶ **Scientifically validated valuation indicators** by important cooperation partners:



What is in?



Vtrek

IPlytics Search Platform Coverage

- ▶ **90 M worldwide filed patents** (USA, Europa, Korea, Japan, China, etc.)
 - ❖ Full text access, English translation of all patents
 - ❖ Legal status (active/lapsed/expired)
 - ❖ Patent transfer deals (Reassignments)
 - ❖ Patent litigation cases
- ▶ **3 M worldwide company profiles**
 - Corporate tree, financial data, news
- ▶ **60 M scientific publications**
 - Articles, conference papers, books
- ▶ **250,000 declared standard essential patents**
 - License commitments (patent pools), standard document links
- ▶ **2 M standard documents**
 - national / international, formal/ informal committees

Vtrek



**INNOVATION
PROCUREMENT
BROKERS**