
Public Procurement for Innovation

Patrizia Hongisto*

Aalto University School of Economics, Center for Knowledge and Innovation Research, Fredrikinkatu 48A, 00100 Helsinki, Finland.
E-mail: patrizia.hongisto@hse.fi

Petra Turkama

Aalto University School of Economics, Center for Knowledge and Innovation Research, Fredrikinkatu 48A, 00100 Helsinki, Finland.
E-mail: petra.turkama@hse.fi

* Corresponding author

Abstract: Public procurers as first buyers of R&D can act as technologically demanding buyers, but also as drivers of socio-economic processes that set the course for innovation from the demand side. This requires methods of user involvement and supplier network experimentation for ICT-enabled services. Based on the eDemocracy Toolbox (eDT) example in Finland the Living Lab approach in several EU funded projects is presented as collaborative innovation network for ICT-based products, systems, and services. Innovation can function as an overarching principle behind public procurement decisions in local socio-economic contexts. The main criteria for quality service from the user or citizen's point of view crystallizes as a social innovation that provides added value. Conclusions are drawn on what leads to effective and agile research, development and innovation environments, and experimental platforms taking into account local needs for innovation through Pre-Commercial Procurement (PCP).

Keywords: Public sector; innovation; public procurement; PCP; socio-economic context; Living Labs; collaborative networks; eDT; Collaboration@Rural.

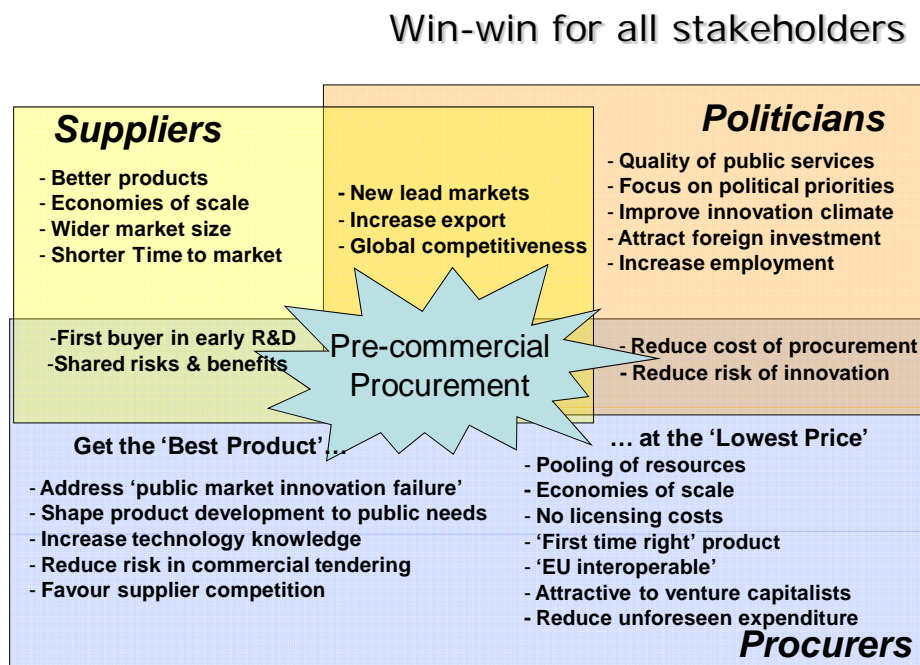
1 Introduction

One of four EU companies work in a cluster-like environment, characterized by close cooperation with businesses in the region and strong ties with the local business infrastructure (Innobarometer Survey, 2006). For these companies collaboration networks are vital for success. User-driven approaches in innovation and the related open innovation paradigm aim to increase competitiveness through such collaborative networks. Additionally, such networks result in practices that address policy for supporting socio-economic trends of collaboration. We observe that governments increasingly respond to the private sector by providing innovation strategies, policies or recommendations which reflect collaborative aspects, such as involving users, enhancing data resources and encouraging new types of partnerships and entrepreneurship.

Moreover, the innovation strategies seem to be broad-based, cross-ministerial initiatives with high political priority.

European innovation policy in public services emphasizes development of products and services that reflect the needs of customers and proposes using pre-commercial procurement as an instrument for advancing innovativeness, inclusion and openness in society. Consequently, policy's aim is to endorse development strategies where users and developers collaborate. Reflecting this goal, member states are encouraged to take specific measures to stimulate innovation and research through improved public procurement practices. Improved knowledge and capabilities of public procurers can help the uptake of innovative practices while raising the quality of public services in markets where the public sector is a significant purchaser.

Figure 1. Benefits of Pre-Commercial Procurement (Lieve Bos, 2009)



Yet, we observe that although repeatedly proposed, pre-commercial procurement (PCP) of innovation and public-private partnerships in R&D for innovation are still untapped opportunities in Europe. European Commission (EC) Communications (COM(2007)799 & SEC(2007)1668) nominate unawareness of how to optimize risk-benefit balance for procurer and supplier, lack of expertise, and missing dialogue between various stakeholders as the barriers of R&D innovation in Europe. Challenges for the uptake of PCP practices in public sector innovation include inexperience, perceived uncertainty of the legal framework for R&D procurement, and fragmentation of demand. Currently, EC measures support awareness campaigns, cross-border benchmarking through Coordination and Support Actions (CSA) such as PreCo and instrumenting public sector PCP and Living Lab pilots.

This paper builds on EC initiatives, namely C@R, Apollon and PreCo, funded under framework programs (FP) 6 and 7 for ICT, and under the Competitiveness and Innovation (CIP) Program. The emphasis is on building experimental RDI methods and platforms for the use of public authorities in public procurement stages. In this paper we take the stance that public procurement related systems, structures, management models, and business logic have to be assessed and reframed as part of an open innovation system. The paper presents collaborative networks as components of agile R&D methodologies for public sector pre-commercial procurement, illustrated by a real need example. We identify critical success factors that address bottlenecks for the scalability of PCP practices and conclude with a set of recommendations.

2 PCP Bridging the Innovation Gap in National Innovation Systems

In spite of competitiveness enhancing initiatives emphasizing innovation, the 2009 European Innovation Survey (EIS) shows European lagging performance. EIS includes a separate analysis of the EU27 performance compared with the United States and Japan, which shows a significant gap. The gap is explained primarily in four areas: international patenting (as measured under the patent cooperation treaty), business R&D expenditures, public private linkages and numbers of researchers (despite the improvements in the last two).

Although examples are still scarce, we have found indications that public procurement can function as a mechanism to enhance innovation if it increasingly acts as part of a network of suppliers. Public procurement accounts for some 16% of GDP in the European Union (EC Single Market website) and offers an enormous potential market for promoting and developing innovative products and services. Public Procurement can have a role in current broad-based innovation strategies applied in the national innovation system by contributing as an experimentation platform for future potential of technologies in real life environments, such as Living Labs. Also PCP can draw benefits for regional strategy and development, as a network building tool that includes and articulates demand and supply, thus influencing investment priorities for science and technology and stimulating innovation of both public sector and companies. This answers the need for more efficient practices and production methods that procurers can use in purchase decisions.

Renewed practices of integrating RDI (research and development for innovation) into stages of public procurement also support a new system of open innovation cycles. In the following we present one of several examples of advancing the uptake of public sector pre-commercial innovation.

3 Critical Success Factors for Experimental Platforms to Support PCP

In line with J. Sacks, we propose that innovation be seen as an overarching principle behind public procurement decisions. The purpose of renewed RDI methods is to bring new ICT-enabled products or services to the market, at a reduced time to market. To this end, government can act as an 'early user' for small, innovative firms, also managing the consequent risks (Sacks 2005). Collaborative methodologies for PCP need to be

developed and experimented in order for the PCP instrument to mature as a model for wider scale implementation and practice in Europe.

The EC has given public sector procurement and trans-national collaboration high priority in its policy instruments. The Lead Market Initiative supports the development of networks of public procurers. We consider the elements provided in the STEPPIN guide for innovative solutions in public procurement as critical success factors for PCP. Public procurement functions as an innovation tool if the process enables authorities to:

- Act as an 'intelligent' customer
- Consult the market before tendering
- Involve key stakeholders throughout the process
- Let the market propose creative solutions
- Seek value for money, not just the lowest price
- Take advantage of electronic means
- Decide how to manage risks
- Use contractual arrangements to encourage innovation
- Develop an implementation plan
- Learn for the future

Viable and effective services require new forms of cooperation and partnerships that allow research linkages fundamental for innovation outcomes and for new service creation and thus support national innovation systems with cross-regional platforms. This can lead into developing an active market for the production of public services and consequently into increased choices and options available in the supply of services.

Among FP7 funded PCP projects the Living Lab approach is proposed as a solution for experimenting and piloting PCP processes and sharing best practices across Europe. Living Lab approaches represent a user-centric research methodology for sensing, prototyping, validating and refining complex solutions in multiple and evolving real life contexts (Eriksson, Kulkki, and Niitamo 2005). The underlying idea in relying on Living Labs for PCP is to stimulate private sector innovation through tenders on products, services, or systems which, in order to be delivered, require some kind of innovative effort by the supplier, such as research and development (R&D). The following chapter presents what is currently under way towards a Living Lab methodology to PCP in the context of local socio-economic 'ecosystems'.

4 Critical Success Factors for Experimental Platforms to Support PCP

The Living Lab methodology was used to establish the required specifications of a user-centric eDemocracy tool box (eDT) for officially legal municipal council meetings. The innovation process of the eDT case in the C@R project stems from a real-life local need. The willingness of the municipality to act in a collaborative network demonstrates that the process prepares for scaling.

Living Labs as innovation facilities include involving users: citizens and municipal officials as end-users and expert users. Thus, service development and procurement was integrated in the Living Lab cyclic iteration of open innovation phases involving two SMEs normally competing on the market. As a result, the eDT as user-centric R&D approach was both an example of a collaborative network and of a citizen-focused interactive inclusion process.

In general, at municipal level the public procurement process for ICT systems is limited to a single municipality as purchasing party and does not encourage, or allow, distributed implementation between public procurers. Each municipality acquires the systems it needs, one reason being the variety of systems in use. Commonly, ICT environments in multiple municipal functions may not be compatible with each other. This constitutes a bottleneck for innovation through PCP not only within a municipality, but especially in the case of a collaborative attempt between multiple municipalities, or regional networks.

Purchase decisions are usually based on two criteria: the technological requirements described in the announcement and the price. Typically the description for systems to be purchased is technology-centered, it may describe the vendor (often incorrectly), or a particular desired product. The Finnish national portal for public procurement announcements contains requests for an “Adobe Connect Pro video conferencing system” or “Documenta Archive Management System”. Seldom, requests are placed for offers that fulfill specific identified requirements, i.e. an “electronic conferencing system” or an “archiving system”. It is uncommon to mention tests as acceptance procedures resulting into the public entity finding out the specifications needed for the desired ICT system only after the decision is made and the product is taken into use. This could be avoided by requesting “Our product can fulfill your needs at an additional cost for customization” - type of offers and suggesting testing in a collaborative network environment for interaction and co-creation with users.

The town of Väståboland in Southwest Finland participated as pilot in the eDemocracy Toolbox (eDT) project 2006-2009 funded by the EC as part of the integrated project Collaboration@Rural (C@R). The aim of eDT was to introduce the systematic use of videoconferencing systems in democratic decision making. As a result of the eDT project a set of technology independent tests were defined to be used in the public procurement process. They were based on the modeling of municipal decision making process and meeting procedures ranging from legally binding municipal council meetings to informal preparatory meetings between civil servants.

A market survey was carried out prior to the definition of the tests. While several customizable solutions are available on the market, the eDT process focused on procurers’ needs for specifications allowing service providers to integrate the customized solutions with existing systems. Normally this is left to the buyers, but PCP helps technology providers to pre-customize their products prior to offering them. It also facilitates presentations in a form that can be used by the ICT industry for eGovernment, eDemocracy and eParticipation systems in municipalities. The eDT case served as a model for a new parliamentary bill in Finland. Scaling is possible for a variety of similar processes and localized systems. The new legal framework ensures that processes at municipal level administration are similar enough for parametrization.

5 Social and Institutional Processes in PCP

In 2006 the Aho Report called upon governments to “use public procurement to drive demand for innovative goods, while at the same time improving the level of public services.” Thereupon the Council called for a broad-based innovation strategy, including the promotion and diffusion of socio-economic innovations, as a way for governments to facilitate competitive market demand for innovation.

Real-life experimentation and collaboration networks aim for breakthrough concepts in the context of social innovations and innovation of institutional processes in service provision. Therefore, the PCP process can contribute to wider implementation as shown in the example in the field of eDemocracy. We also note that the scale of government procurement can also serve to establish entirely new markets for innovations (Georghiou 2007).

As the early results of the PreCo project indicate, understanding the rules of the procurement framework correctly and making use of the flexibility they offer can facilitate innovative solutions and offers opportunities for government purchasers to use innovation-oriented tendering with socio-economic impacts. Moreover, key obstacles to stimulating innovation through public procurement, the major one being risk aversion, do not seem to emerge from the legal framework, but from organizational structures and lacking practical experience. These issues need to be and can be addressed directly.

6 Conclusions

The concept of pre-commercial procurement is still relatively untried. This paper has presented a case of an open innovation network functioning as PCP and using Living Labs methods. Local, or cross-regional, innovation environments include: (i) corporate-orchestrated collaborative networks, (ii) innovation networks initiated by public multi-stakeholder interest in research and innovation, (iii) open networks emerging from shared human and social interests in problem solving, and promoting mutually accepted (future) causes of action.

To this end the Living Lab approach as an operational model that realises and implements PCP practices is proposed, based on three core principles: customer-orientation, impact and cost-effectiveness. This serves to generate citizen-centered service networks of public sector, businesses and non-governmental organizations as equal actors.

Success factors in policy and implementation are:

1. Demand-side innovation policies fostering the use of innovative public procurement and regulation
2. PCP practices implemented through a shared vision on the part of purchasers and suppliers
3. Recognizing grand challenges that require broad-based stakeholder engagement and methodologies for citizens involvement
4. Linking needs of policymakers and regulators with potential research solutions as a basis for joint program planning based on targeted foresight
5. Revising public sector request practices and selection criteria for offers to trigger shared visions for research and innovation
6. Flexible, phased structures yet strong program management processes
7. Organization and cultural changes within local administration that facilitate uptake of PCP processes

Public sector can use its procurement power to leverage innovation and take-up of research into product and service development. While EU directives may support PCP, for officers to manage interactive supplier and R&D relationships, training and incentives are needed.

These identified factors are addressed in the ongoing EU initiatives like PreCo, where roadmaps and practical guides will be followed by consent building and practice based piloting in Living Lab environments. More concrete results can be reported in 2011.

References and Notes

Aho, E., Cornu, J., Georghiou, L., and Subirá, A. (2006) "Creating an Innovative Europe." Report of the Independent Expert Group on R&D and innovation appointed following the Hampton Court Summit. European Commission EUR 22005. http://ec.europa.eu/invest-in-research/action/2006_ahogroup_en.htm, accessed April 2010.

Bos, Lieve "Pre-Commercial Procurement. Driving Innovation to Ensure High Quality Public Services in Europe" PowerPoint presentation at the workshop Pre-Commercial Procurement (PCP): Status and Next Steps. Support in Community Programmes, June 16, 2009, Brussels, European Commission DG INFSO. ftp://ftp.cordis.europa.eu/pub/fp7/ict/docs/pcp/20090616-lieve-bos_en.pdf, accessed April 2010.

Commission of the European Communities, "Guide on Dealing with Innovative Solutions in Public Procurement." SEC (2007) 280. http://www.erisee.org/node/downloads/triangle/procurement_manuscript.pdf, accessed April 2010.

Commission of the European Communities, "Pre-commercial Procurement: Driving innovation to ensure sustainable high quality public services in Europe" COM (2007) 799 Final and SEC (2007) 1668. http://ec.europa.eu/invest-in-research/pdf/download_en/com_2007_799.pdf, accessed April 2010.

Commission of the European Communities, The EU Single Market Website http://ec.europa.eu/internal_market/publicprocurement/index_en.htm, accessed April 2010

C@R (Collaboration@Rural), Project website: <http://www.c-rural.eu/>

Edler J, Georghiou L., "Public Procurement and Innovation--Resurrecting the Demand Side." *Research Policy* 36 no 7 (2005):949-963.

Eriksson, M., Niitamo, V.P. and Kulkki, S. "State-of-the-art in utilizing Living Labs approach to user-centric ICT innovation -- a European approach." White paper, Dec 15, 2005. http://www.vinnova.se/upload/dokument/Verksamhet/TITA/Stateofheart_LivingLabs_Eriksson2005.pdf, accessed April 2010.

Hongisto, P., Ferm, T. "ArchipeLabo: Building a Living Lab for Governance and Rural Development," *eJov* 11 (2009), accessible through www.ejov.org.

Sacks, J., "Public Spending for Public Benefit." New Economics Foundation, August 1, 2005. http://www.neweconomics.org/sites/neweconomics.org/files/Public_Spending_for_Public_Benefit.pdf, accessed April 2010.

STEPPIN (STandards in European Public Procurement leading to Innovation). Project website: <http://www.europe-innova.org/>

"2006 Innobarometer on cluster's role in facilitating innovation in Europe." Analytical Report accessible at ProInno Europe. http://www.proinno-europe.eu/page/admin/uploaded_documents/FL187_Innobarometer_2006.pdf, accessed April, 2010.