European Assistance for Innovation Procurement

Ana Lucia Jaramillo
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Outline

- Introduction to Corvers
- Public Procurement and the EU Framework
- Rationale for Innovation Procurement
  - PCP, PPI and IP
  - Results and measurable impacts
- EAFIP support to Public Procurers
Team & partners Corvers

- Strategic alliance with Bartels Sueters aanbestedingsadvocaten (The Netherlands)
- Partnership with e-Law Department at Leiden University
- Corvers Chair for Innovation Procurement (MSM, UniZar)
What is public procurement?

“Public procurement is the process by which public authorities (such as government departments or local authorities) purchase works, goods or services from companies which they have selected for this purpose.” (EU)

- E.g. building a state school, purchasing furniture for the prosecutor’s office; contracting cleaning services for a railway station.
Why regulate public procurement?

“... to ensure that public funds are spent **honestly and efficiently**, on the basis of a serious assessment and without any kind of favouritism or quid pro quo whether financial or political.”

**Source:** Opinion of Advocate General Jacobs in Case C–19/00, SIAC Construction Ltd v County Council of the County of Mayo
Why regulate public procurement at EU level?

“The main purpose of Community harmonisation is to ensure a free market.”

Source: Opinion of Advocate General Jacobs in Case C–19/00, SIAC Construction Ltd v County Council of the County of Mayo
EU Legal Framework

- Directive 2014/24/EU - Public Sector
- Directive 2014/25/EU - Utilities
- Directive 2014/23/EU - Concessions
- Directive 2009/81/EC - Defense and Security
- Treaty of the Functioning of the EU (TFEU)
- Directive 2007/66/EC - Remedies
EU Public Procurement Rules

**Transparency**
- Publication of a contract notice to inform the potential interested suppliers

**Equal treatment**
- Prohibition to modify requirements after submission of proposals

**Non-discrimination**
- Competition for the contract is open to all European suppliers in EU

**Proportionality**
- Requirements should not be onerous or unreasonable
Role of public procurement

“Public authorities can use [procurement] in a more strategic manner, to obtain better value for each euro of public money spent and to contribute to a more innovative, sustainable, inclusive and competitive economy.”

(European Commission COM (2017) 572 final)
Importance of innovation

Innovation drives economic growth

There are two sources of economic growth:

- More inputs

Economic growth

Economic growth is the UK's annual labour productivity growth, 2000–2008, value = 2.24%

Innovation accounted for 63% of economic growth 2000–2008

Innovation

Turning new ideas into reality
Public Procurement is critical to innovation

In addition to innovation-friendly regulation, “innovation demand policies, such as public procurement will be critical. These actions will speed up the creation of benefits from innovation.” (SRIP 2018)

Public procurement is 'the tool' that enables potential buyers to steer industry R&I to its needs. However, it is under-used in EU.
Science Research and Innovation Performance of the EU (SRIP 2018)

Figure 1.3-A.10 Evolution of business R&D intensity, 2000-2016

- South Korea
- Japan
- United States
- China
- EU

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Procurement budget on ICT and R&D differences within Europe
Innovation Procurement

- Innovation procurement happens when public procurers procure the development or deployment of pioneering innovative solutions to address specific mid-to-long term public sector needs.

- PCP (pre-commercial procurement)
- PPI (public procurement of innovative solutions)
- Innovation Partnerships
Innovation Procurement

R&D / Pre-commercial Procurement (PCP)

Public Procurement of Innovative Solutions (PPI)

Phase 0
Curiosity Driven Research

Phase 1
Solution design

Phase 2
Prototype development

Phase 3
Original development and testing of limited volume of 1st test products/services

Phase 4
Deployment of commercial volumes of end-products Wide diffusion of newly developed solutions

Supplier A
Supplier B
Supplier C
Supplier D

Supplier B
Supplier C
Supplier D

Supplier(s)
A, B, C, D and/or X

Innovation Partnership bundles the R&D and commercialization phases
Deployment must meet conditions of 2014 R&D&I State aid framework

Source: European Commission
PCP & PPI to tackle public issues

- **Public sector often pay too much to get non optimal quality product**
  Long term contracting, vendor lock-in, fragmented procurement market -> PCP-PPI reduces costs of 'first' deployment with 20% with more cost savings when deploying more widely (US data). This repays small PCP investment multiple times.

- **More than 50% of public procurements don't achieve their goals**
  Procurers are not informed enough about pros & cons different solutions – buying wrong thing, vendor lock-in with proprietary solutions & cost overrun everywhere etc -> PCP/PPI de-risks large deployments to prevent failure/ waste of tax payers' money

- **Not even 25% of public R&I grants result in commercialisation**
  Because not driven by customer to steer R&D to meet concrete customer needs -> Increase the effectiveness of public investments in R&I: 50 to 75% commercialisation success rate for companies in PCP-PPI procurements

- **Innovative companies leave Europe – EU competitiveness undermined**
  Public sector is more willing to be first test and deployment reference (45Bn more PCP, 200Bn more PPI per year in US) -> PCP/PPI can attract innovative suppliers to EU & create growth/jobs 'in Europe' (PCP falls outside WTO rules: can require R&D to be done in Europe, first deployment of tested PCP product can be from PCP suppliers)

Source: Lieve Bos, European Commission
First results EU-funded PCPs

- 12 funded PCPs have completed (Phase 3 finished)
  - SILVER (Robotics for elderly care)
  - CHARM (Traffic management)
  - PRACE 3IP (Energy efficient supercomputing)
  - SMART@FIRE (Smart protective equipment for fire fighters)
  - PREFORMA (Long term digital preservation)
  - DECIPHER (Mobile health services)
  - Human Brain Project (High Performance Computing for brain simulation)
  - V-CON (Virtual construction of road infrastructure)
  - Cloud for Europe (Cloud computing for governments)
  - Thalea (Telemedicine for intensive care unit patients at increased risk)
  - IMAILE (Personalised e-learning solutions)

HBP PCP doesn't result from a PCP call. HBP decided itself to use PCP under its subcontracting activities.

- 10 are ongoing
- 8 are in the preparation phase

Source: Lieve Bos (DG Connect)
First results EU-funded PCPs

- **Opening route-to-market for new players/SMEs**
  - 73.5% of contracts won by SMEs (SME lead bidder, bidding alone or with partners)
  - Compared to 29% in public procurements across Europe
  Mostly small young SMEs: 31% below 10 people, 48% below 50 people, 60% less than 10 years old

- **Relevance to universities & bringing scientific results to market**
  - 32% of winning contracts have university/R&D center partner in consortium
  - Winning SMEs are also often university start-ups

- **Encouraging commercialisation – budget efficiency**
  - Bidders offered ~ 50% price reduction on R&D cost (market beyond procurers)
  -> PCPs can get twice as much R&D done for same budget as R&I action

- **Creating growth and jobs in Europe**
  – 99.5% of bidders do 100% of R&D in Europe
  (2 have committed to do minimum 68% resp. 85% of R&D in Europe)

Source: Lieve Bos (DG Connect)
Measured impacts for procurers

- **Improving the quality and efficiency of public services**
  - All completed PCPs delivered solutions that improve quality and / or efficiency
  - 60% of procurers use PCP also to obtain more open, interoperable solutions

- **Deployment of solutions by procurers in the project**
  - Procurers from 55% of completed FP7 PCPs have already deployed solutions developed during the PCP (SILVER, PRACE3IP, HBP, PREFORMA, THALEA, IMAILE)
    - Open source solutions deployed without needing procurement: PREFORMA, HBP (part open source)
    - Solutions procured as part of the PCP: PRACE3IP, THALEA, IMAILE
    - Solutions procured after the PCP: SILVER, HBP
  - Procurers from 45% of completed FP7 PCPs have not procured yet
    - Delay in other deployments that need to be finished first before buying the PCP solutions: CHARM
    - Slow standardisation is delaying deployment: V-CON
    - Product commercialisation/certification/clinical trials not finished yet: SMART@FIRE, NYMPHA-MD
    - Market situation / deployment EPSOS interoperable health records delayed: DECIPHER

- **Wider deployment of solutions by other procurers on the market**
  Procurers from 27% of completed FP7 PCPs are already preparing additional larger scale procurements with enlarged buyer groups (THALEA, PRACE3IP, IMAILE)

Source: Lieve Bos (DG Connect)
Lessons learned

- **Separating PCP (R&D) from PPI (commercial volume deployment) and using a phased PCP approach**
  - Opens the market for small players/SMEs (smaller gradually growing contract sizes)
  - Enables procurers to steer industry R&D to meet their needs, achieve desired quality and efficiency improvements in public services and reduce vendor lock-in
  - Stimulates cooperation with universities and larger companies
  - Enables use of place of performance clauses that create growth/jobs in Europe

- **Joint cross-border PCP procurement**
  - Stimulates cross-border company growth
  - Facilitates the creation of more open standards based interoperable solutions

- **Leaving IPR ownership rights with contractors**
  - Reduces the cost / the R&D risk for procurers with 50%
  - Encourages wider commercialisation of solutions by vendors

- **Using a place of performance condition in PCPs**
  - Can effectively stimulate growth and job creation in Europe
European Support for Innovation Procurement

- **2009**: Funding for PCPs and PPIs, 4.5M → 130M
- **2011-2020**: Funding for networks of procurers
- **2014**: New procurement legislation and state aid framework
- **2015**: Expert assistance (eafip initiative)
History of European support on Innovation procurement

• Since 2009: funding for networks of procurers
• Since 2011-2014: funding of PCPs and PPIs (FP7)
• 2014: new Procurement Directives
• 2014: State aid Framework for R&D&I
• 2014: **Horizon 2020 and ESIF** reinforcing EC support for PCP/PPI:
• Eafip initiative (2015-2020)
European Assistance for Innovation Procurement

EC DG Connect
www.eafip.eu

- Consortium partner Eafip: 2015 - 2018
- Contractor Eafip: 2019 - 2020
EAFIP 2015-2018

- European Commission DG CONNECT
- Knowledge transfer to contracting authorities throughout Europe
  - Workshops & conferences
  - Toolkit https://eafip.eu/toolkit/
  - Videos https://www.youtube.com/watch?v=ryCROPNnXWc
    - https://eafip.eu/resources/videos/
  - Local assistance (12 PCPs and PPIs)
- Network-approach
- Demand driven policy – no support to companies
- www.eafip.eu
List of assisted PCP projects 2015-2018

- **Flanders Mobility and Public Works**: Digital Elevation Models
- **Dutch Ministry of Defence**: ICT solution for mobile radio interoperability)
- **Junta de Andalucia – Council of Agriculture, Fisheries and Rural Development**: mobile devices to inspect food quality
- **ASST Pavia**: An original solution for evaluating the fragility of coronary atherosclerotic plaque
- **Bank of Lithuania**: Blockchain
- **Telecom Romania**: 112 location autonomous system using software defined radio (SDR)
List of assisted PPI projects 2015-2018

- Het Waterschapshuis: ICT Solution: Central Distribution Layer-CDL
- Universitary Hospital in Zaragoza: Intelligent laundry system
- Eurail Group Europe: E-ticketing and Distribution Platform
- Canal de Isabel II: modernisation of customer information systems within the water utility organisation
- Region Castilla y Leon: platform in support of entrepreneurship ecosystems
- Gijon Impulsa: Intelligent Data Analysis Tool
- Cimadolmo-IES: seismic modelling
EAFIP 2019-2020

A total of 5 projects have been selected under the scope of the EAFIP (2019-2020) initiative of the European Commission:

1. WBL: Artificial Intelligence - PCP (NL)
2. Gobierno de Canarias: Big Data for Personalised Medicine - PCP (ES)
3. MVB-STIB: Muntstroom Living Lab - PCP (BE)
4. Austrian Patent Office: Chatbot Albert - PPI (AT)
5. Smart Dublin/Dublin City: Smart Tech, saving lives - IoT Network to monitor and report on Life Rings - PPI (IE)
EAFIP Methodology

1. Needs identification and assessment
   "Problems and requests"

2. Prior art analysis and IPR search
   "Describe SOTA & key contenders"

3. Analysis of the standards’ landscape
   "Define degrees of consensus"

4. Open market consultation
   "Challenge findings with the market"

5. Value calculations
   "Decide on one trajectory vs another"
Prior Art Analysis

- **Worldwide Patents** (USA, Europe, Korea, Japan, China, etc.):
  - INPADOC family identifier
  - IPC/CPC classifications
  - Legal status analysis (granted/active/expired)
  - Reassignment information

- **Declared Standard Essential Patents**:
  - Patent and standards document number
  - Licensing commitments (e.g., FRAND)
  - Patent Pools

- **Standards Documents**:
  - 2 M standards document identifier
  - Standards project assignment
  - Standards release and version update

- **90 M Patents**
- **250,000 SEPs**
- **2 M Standards**
Market consultations

(1) Improvements are needed but don’t require new and significant R&D (only integration, incremental adaptations and improvement, customization...), so authority can act as early adopter of innovative commercial end-solutions newly arriving on the market.

(2) There isn’t any solution or the problem is so technologically demanding that a radical and breakthrough new solution and significant R&D is needed.
TRL relation to PCP and PPI

- **TRL 1** – Basic principles observed
- **TRL 2** – Technology concept formulated
- **TRL 3** – Experimental proof of concept
- **TRL 4** – Technology validated in lab
- **TRL 5** – Technology validated in relevant environment
- **TRL 6** – Technology demonstrated in relevant environment
- **TRL 7** – System prototype demonstration in operational environment
- **TRL 8** – System complete and qualified
- **TRL 9** – Actual system proven in operational environment

**Product Idea**

**Solution Exploration**

**Solution Design**

**Prototyping**

**Original development of a limited volume of first products/services, in the form of a test series**

**First Test Products**

**Commercial End Products**

**Commercialisation of products/services (may include commercial development activities, e.g., quantity production, customization, integration, etc.)**

**Pre-Commercial Procurement**

**Public Procurement of Innovative Solutions**
### Preparatory steps

1. Needs identification and assessment
2. Analysis of the regulatory environment
3. State-of-the-art analysis

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<th>Literature</th>
<th>IPR</th>
<th>Standards</th>
<th>Certification</th>
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4. Business-case
5. Open market consultation
6. IPR and confidentiality strategies
7. Draft tender documentation
8. Conduct the PCP procedure
9. Monitor and evaluate the contract performance
10. Manage after contract issues
Apply to Eafip

the new EAFIP call for assistance open till 13th of December 2019

Please find [here the link:](https://ec.europa.eu/eusurvey/runner/EAFIP2019) to the EAFIP call for assistance to be disseminated.
Thanks for your attention

Questions?

Ana Lucia Jaramillo
a.jaramillo@corvers.com
Corvers Procurement Services B.V.
Julianaplein 21
5211 BB ‘s-Hertogenbosch
Tel: 073-612 6566
info@corvers.com
www.corvers.com