Introduction to Innovation Procurement

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DG CNECT
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Public procurement is 'the tool' that enables potential buyers to steer industry R&I to its needs. However, it is under-used in EU.

Also large differences within Europe

Frontrunner Member States invest 5 times higher % of total public procurement budget than followers on ICT and R&D proc:

- ICT procurement
  - 13,5% in UK <-> 2,5% in GR
- R&D procurement
  - 0,5% in UK <-> 0,1% in GR

Fragmentation of demand:
Majority of contracts below 60K€

Public sector is faced with important challenges.
To tackle these challenges often public sector transformations are needed.

- In many cases, solutions are close to the market and would be provided if clear requirements/sufficient demand expressed by market. Incremental innovation (product adaptation, scaling up of production...) or non-R&D innovation (e.g. service innovation) can deliver required quality/price, so no need for R&D procurement. Public sector provides seal of approval for innovative solution by acting as launching customer/early adopter (PPI)

- In other cases, addressing the problem requires radical innovation, there is no available solution 'on' or 'close to' the market yet. There are different competing potential solution approaches but R&D still needed to de-risk and compare different technological alternatives before committing to large scale deployment. Procurer wants to induce step change in market (e.g. moving from proprietary/vendor lock-in to better open systems with multiple vendors incl. new players) (PCP)
- **PCP** to steer the development of new solutions towards concrete public sector needs, whilst comparing/validating alternative solution approaches from various vendors and enabling new players to prove themselves against established ones
- **PPI** to act as launching customer / early adopter / first buyer of innovative commercial end-solutions newly arriving on the market
• Get 20% better value for money products (US defense data)
• Use PPI also if no (more) R&D needed for procurement need
• Use a small budget PCP to de-risk a large budget PPI
  • PPI spec can be 'completely rephrased' benefiting from PCP lessons learnt
• Use conditions that encourage job creation 'in Europe'
  • Because PCP falls outside WTO rules
• Prevent foreclosing of competition & crowding out of private investment in R&D
  • Companies that are not financing their R&D via procurement/PCP (e.g. via grants, own company resources) can still bid for deployment contracts/PPIs
• Facilitates access to procurement market for SMEs
  • Gradually increasing contract sizes, tasks, required manpower
  • Stringent financial guarantee/qualification requirements: 'no' in PCP, 'ltd' in PPI

... above not the case if R&D is procured as part of/inside large deployment contract
When use PCP-PPI vs innovation partnership procedure?

### Policy reasons

#### Separation PCP – PPI proc
- Non-unique solution
- Procurer not only potential buyer/ IPR ownership with suppliers makes sense
- Many potential suppliers, also non-established and smaller providers
- Other private/public R&D investments planned/ongoing
- Need proc approach that can deal also with radical innovation (R&D)
- Interest in removing supplier lock-in, more open/standardised solutions
- Want to de-risk future PPI with PCP (prevent risk of failure of PPI)
- Interest in encouraging growth and jobs ‘in Europe’ a/o facilitating access for new/smaller players to proc market

#### Exceptional cases

#### Innovation Partnership proc
- Unique solution
- Procurer only potential buyer/keeps IPR (has no mkt value to suppliers)
- Ltd nr of potential suppliers (known): well-established (larger) providers
- No other private/public R&D investments planned/ongoing
- Incremental innovation (real R&D?)
- No way to avoid supplier lock-in
- Risk acceptable to deploy wrong thing (fixing solution requirements/limiting choice of vendors before R&D/testing)
- No interest in encouraging growth and jobs ‘in Europe’ a/o facilitating access for new/smaller players to proc market

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**Majority of situations (H2020)**

**Exceptional cases**
PCP impact study analysed US and Europe evidence (also cases without EU funding) and found higher economic impacts of PCP compared to other proc. approaches (1. R&D procurements with single sourcing, IPRs left with procurers and 2. procurements that combine purchase of R&D and deployment)

- **Shortening of time-to-market**: Customer drive & feedback-> solution design to tested product -full R&D- in 18 mths (e.g. Lombardy PCP)
- **Removal of supplier lock-in**: 20% cheaper and higher quality products: evidence from US defense multi-competitor / multi-phase PCP procurements, similar benchmarking info from EU e.g. CHARM PCP
- **Opening market to new players and stimulating cross-border company growth**: in EU funded PCPs 2,5 X more SMEs and 25 X more cross-border contracts compared to procurement average in EU
- **PCP reduces risk of failure**: (budget/time overrun, over/underspecification of solutions to be procured) of follow-up PPI
- **Creating lead markets**: possible via sustained PCP/PPI procurements (e.g. 60 ys of supercomputing PCPs -> IBM, Cray, HP)
Growing impact at European level

More info on these EU policy initiatives on innovation procurement
Political encouragement
- Modernising public sector 'a priority'
  Quality-efficiency improvement targets
  e.g. Lombardia/IT, UK, Flanders/BE
- Target % proc budgets to innovation
  Monitoring framework
  e.g. UK, NL, ES, Nordics, FR

Implementation
- Innov Proc Competence center
  Training / assisting procurers
  (e.g. SE, FI, ES, DE)
- Innov Proc financial support program
  (e.g. SE, FI, ES, NRW/DE)

Encourage demand side to meet supply side
- Early notification innov proc needs
- Open market consultations
  Meet the buyers events

Leverage EU funding
- Horizon 2020
- ESIF
- EIB loans
  Increased support for innov proc
Growing impact at Member State level

More info on Member State initiatives on innovation procurement
http://ec.europa.eu/digital-agenda/node/77419

PCP and PPI in ESIF: PL, FR,...
EE, LV develop innov. proc. strategy

DE, PL put innov. proc. in R&D&I strategy
IT (€ 150M), ES (€ 250M) to PCP/PPI struct funds
Baltics (LT, LV, EE) join Norden agreement
FR sets 2% target for innov proc.

NO, FI, SE, DK, IS min. agreement on cross border innov. proc. collaboration (including 2,5% target)

AT, NO, DK, IS, IT include innov. proc. in R&D&I strategy
ES (3%), NL and UK (2,5%) set expenditure target for innov. proc.

FI, SE, ES, Flanders (BE) launch support program & competence center for procurers

FI, SE, ES, Flander (BE) include innov. Proc. in R&D&I strategy

UK NHS and MOD PCPs and PPIs, NL launching customer (PPI)
Progress PCP implementation
Learn from first movers

- Awareness Raising
  - Exploring possibilities

- Framework identified
  - Working on framework and/or pilots in preparation
  - PCPs projects on-going or finished

2007

- Malta
- Denmark
- Lithuania
- Norway
- Belgium
- Sweden
- Spain
- Netherlands
- UK

2015

- Malta
- Bulgaria
- Cyprus
- Slovenia
- Latvia
- Luxembourg
- CZ
- Iceland
- Hungary
- Lithuania
- Poland
- Romania
- Sweden
- France
- Greece
- Portugal
- Belgium
- Austria
- Switzerland
- Italy
- Norway
- UK

- Awareness Raising
  - Exploring possibilities

- Framework identified
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Examples PCPs
EU funded Transport

CHARM

3 road authority procurers: Rijkswaterstaat (NL), Highways Agency (UK), Department Mobility and Public Works - MOW (BE).

Joint procurement of R&D services via the PCP to move towards an open modular traffic management architecture by getting modules developed that will optimise network performance, increase road safety and reduce CO2 emissions by improving network management, incident prediction and prevention and cooperative ITS.

Benchmarking: 20% expected cost savings

Non-EU funded Health

Niguarda Hospital PCP

Entities involved: Lombardy region, Niguarda hospital, ARCA regional purchasing body

PCP to develop and test: easy-to-use automated universal system for moving hospital beds, with anti-collision and safety systems, not needing guide lines or tracks even on non rectilinear routes

Benchmarking: 40% expected cost savings (cheaper solution + less accidents and functional limitations)
HAPPI

URL: www.happi-project.eu

6 healthcare purchasing groups from FR, UK, IT, BE and LU launched on 30 September 2014 the first ‘joint’ transnational PPI procurement in the healthcare domain in Europe: Resah-Idf (FR), NHS commercial solutions (UK), SCR Piemonte (IT), Centrale de Marchés Mercure (BE), Entente des hôpitaux (LU).

The French lead procurer is procuring (establishing a framework agreement with several vendors under French law) on behalf of the whole group of procurers to procure 5 different lots of equipment. All 6 purchasing groups can then setup specific contracts under their own national legislation to buy products from any vendor selected under the framework agreement.

Erasmus University Medical Center PPI

URL: http://www.innovation-procurement.org/award/erasmus-mc/

Robotics based bed washing system
One of the PPI procurements of www.ecoquip.eu
Won European PPI award 2014

More efficient and sustainable healthcare solution
Cost reduction: 35%
CO2 footprint reduction: 65%
What is eafip?

A service set up by the DG CNECT (led by Stella & Corvers)
- Horizon 2020 supports groups of procurers to do joint PCPs/PPIs together
- eafip supports single procurers to start PCP/PPIs on their own nationally

What does eafip offer?

- **Training across Europe**
  - 3 major events and 9 smaller workshops with procurers in different sectors between 2015-2018 to provide information and training on PCP and PPI
  
    Register [here](#) to the next workshops and events

- **Toolkit and helpdesk**
  - Training is based on toolkit on why and how to implement PCP/PPI
  - Helpdesk that will post replies to questions - FAQs online
  
    Register [here](#) to stay up to date

- **Free local assistance**
  - For public procurers starting concrete PCPs and PPIs for ICT based solutions
  - Includes legal assistance in the start-up and implementation of a PCP/PPI
  
    Info [here](#) about the assistance
- **Speed up public sector modernisation** – improve quality and efficiency of public services with breakthrough solutions

- **Get better value for money through cooperation** - enable public sector around Europe to share cost + experience to buy new solutions that can respond to concrete public needs

- **Address issues of common interest together** – e.g. where interoperability and coherence of solutions across borders, pooling of resources or market defragmentation is required

- **Create growth and jobs in Europe** – help innovators bring European R&D to the market (the majority of R&D in H2020 funded PCPs should take place in Europe, ltd set of first test products can be bought in the PPI from companies in the PCP)
### Overview EU funded projects doing PCPs (FP7/H2020)

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<th>THALEA (PCP)</th>
<th>NYMPHA-MD (PCP)</th>
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<td>Tele-detection/care of ICU patients</td>
<td>Mental care for bipolar disorders</td>
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<td>SILVER (PCP)</td>
<td>Robotics ageing well</td>
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<td>DECIPHER (PCP)</td>
<td>Services mobile health data</td>
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<td>Mobile care for vaccination &amp; heart failure</td>
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<th>HNSciClouds (PCP)</th>
<th>SMART@FIRE (PCP)</th>
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<td>Traffic Management</td>
<td>Science Cloud</td>
<td>Smart Textiles ICT for fire fighters</td>
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<td>V-CON (PCP)</td>
<td>Virtual road infrastructure modelling</td>
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| SUSTAINABILITY | PRACE 3IP (PCP) | IMAILE (PCP) | |
|----------------|-----------------|--------------|
|                | High Performance Computing | Personalised learning needs | |

| EDUCATION | |
|-----------| |
|           | |

| E-GOV | |
|-------| |
| SELECTforCities (PCP) | |
| Open City IT platform | |

| SAFETY | |
|--------| |
|        | |
### HEALTH AGEING
- **HAPPI (PPI)**: Healthy Ageing
- **STOP AND GO (PPI)**: Telecare for elderly with multiple conditions
- **ECOQUIP & LCB-HEALTHCARE (PPI)**: Low carbon healthcare

### TRANSPORT
- **FIRED-UP (PPI)**: Vehicles Fire Fighters
- **SYNCRO (PPI)**: Smart roads communication

### SUSTAINABILITY
- **PRO-LITE (PPI)**: Cities/Metro Lighting
- **INNOBOOSTER (PPI)**: Office Furniture & Lighting
- **PROBIS (PPI)**: Sustainable construction
- **SPEA (PPI)**: Sustainable buildings
- **INNOBUILD (PPI)**: Sustainable buildings
- **INNOCAT (PPI)**: Sustainable catering
- **PAPIRUS (PPI)**: Sustainable construction

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EU funded CSAs/Networks of procurers (FP7/CIP/H2020)

**HEALTH AGEING**
- SAEPP (preparing PCP)
- C4BI (networking)
- PRO4VIP (preparing PCP)
  - Ambulance ICT
  - Cities on healthcare
  - ICT for Visually impaired
  - Cities on e-health
  - E-health procurers

**TRANSPORT**
- P4ITS (Preparing PPI)
  - Intelligent Transport Systems
- TRANSFORM (Networking)
  - City/Regional transport

**ICT**
- PICSE (Preparing PCP/PPI)
  - Cloud computing research cloud
- COMPLETE (Preparing PPI)
  - Photonics broadband

**SUSTAINABILITY**
- WATER PIPP
  - Water procurers
- EURECA (prep PPI)
  - Green data centers
- GREENS (prep PPI)
  - Energy agencies – CO2
- CEPII 2 (prep PPI)
  - Cities – energy consumption
- SPP regions (capacity building)
- PPI – sustainability
- InnProBio Forum (capacity building)
- PPI – bio based products
- BRODISE
  - Cities brown field decontamination
- PPI4WASTE
  - Authorities
  - Waste management
Data collected from first 7 ongoing FP7 funded PCPs

• 7 FP7 funded PCPs in ICT so far awarded contracts
  - 45 tenderers/consortia of tenderers have been awarded contracts in total

• Opening route-to-market for new players/SMEs
  - 75.5% 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: 34.5% below 10 people, 81% below 50 people, 56% less than 10 years old

• Stimulating cross-border company growth
  - 33% of contracts won by bidders that are not from a country of any of the procurers in the buyers group (e.g. DE company working for UK+NL procurers)
  - Compared to 1.26% in public procurements across Europe

• Relevance of PCPs also to universities
  - 33% of winning contracts have university/R&D center partner in consortium
  - Winning SMEs are also often university start-ups

• Encouraging wider market commercialisation
  - Bidders offered on average 50% cheaper R&D price for keeping their IPRs (they see IPR value/real market beyond the first potential buyers, the PCP procurers)

• Creating growth and jobs in Europe
  - All bidders do 100% of R&D in Europe (except 1 doing 85% of R&D in Europe)
Still companies and procurers out there that don't know about these procurement opportunities. Help us promote upcoming PCP/PPI call for tenders in your country.

Overview on-going projects: http://ec.europa.eu/digital-agenda/en/eu-funded-projects
H2020 support to Innovation Procurement in 2016-2017

PCP/PPI Actions + Coordination and Support Actions (CSAs)
Coordination and Support Actions (100% funding rate):
- Support only coordination activities e.g. preparation of a PCP or PPI by a group of procurers (identifying common challenges, open market consultation with industry before initiating a concrete PCP or PPI etc)
- CSAs do not provide EU co-financing for an actual PCP or PPI procurement

PCP Actions (90% funding rate):
- Co-finance an actual PCP procurement (one joint transnational PCP procurement per action) + related coordination and networking activities (e.g. to prepare, manage and follow-up the PCP procurement)

PPI Actions (35% funding rate):
- Co-finance an actual PPI procurement (one joint transnational PPI procurement per action) + related coordination and networking activities (e.g. to prepare, manage and follow-up the PPI procurement)

! New !
Every project goes through a preparation stage and an execution stage. It includes:

**Preparation Stage**
- Open Market Consultation, preparation, tendering, etc.
- Evaluation results

**Execution Stage**
- Following up progress suppliers
- Validating, testing solutions
- Dissemination activities
- Standardisation, certification, etc.

**PCP/PPI actions co-finance (1) + (2)**

**(1) Price of PCP/PPI procurement**
- Preparation, consultation, etc.

**(2) Coordination & Networking Activities**
- Preparing follow-up PPI
- Dissemination etc.
Reimbursement rate direct costs: Max 90% respectively 35% of eligible costs for PCP respectively PPI actions

- Eligible direct costs to carry out eligible activities defined in WP include:
  - Price of the R&D services (PCP) or innovative solutions (PPI) procured (if procurement conducted in compliance with requirements in Annex E WP)
  - Eligible coordination and networking activities
  - May include in-kind contributions (e.g. third parties putting resources at disposal of beneficiaries e.g. for testing of solutions)
  - VAT is an eligible cost unless for beneficiaries that can deduct it

- Requested reimbursement for coordination and networking activities can comprise max 30% (for PCP) / max 50% (for PPI) of total requested grant

Plus 25% for indirect costs. But, no indirect costs on the price of the PCP/PPI procurement or on 3rd party resources not used at the beneficiary premises.

Pre-financing: Yes, 1st pre-financing at start project for costs for preparation stage, 2nd pre-financing before execution stage for rest of costs (incl. call for tender)
Become a Horizon 2020 expert. Experts assist EC in:
- Evaluation of proposals
- Monitoring of ongoing joint cross-border PCP or PPI projects
- Evaluation of funding programs
- Design of policy

For PCP-PPI related projects, also legal experts are hired

Register yourself as candidate expert that is interested in this: https://ec.europa.eu/research/participants/portal/desktop/en/experts/index.html
OVERVIEW UPCOMING H2020 CALLS ON INNOVATION PROCUREMENT (PCP+PPI) IN 2016-2017
2016 (~40 M€)

- **PCP actions**
  - E-health: 18 M€ (PM-12)
  - ICT based solutions for any area of public interest: 4 M€ (ICT-34)
  - Earth observation: 3 M€ (EO-2)

- **PPI actions**
  - ICTs Ageing: 10,5M€ (PM-13)

- **CSA actions**
  - Urban transport deployment: 2M€ (MG-4.4)
  - Climate – environment- raw materials - resource efficiency: part of larger call (SC5-27)
  - Civil protection: 1,5M€ (2-DRS)

2017 (~84 M€)

- **PCP actions**
  - Robotics smart cities: 7 M€ (ICT-27(d))
  - Soil decontamination: 5 M€ (SC5-26)
  - Broadband coms security: 10 M€ (4-DRS)
  - Forensics: 10 M€ (9-FCT)
  - Border control: 10 M€ (13-BES)

- **PPI actions**
  - E-health standards: 8,26 M€ (PM-19)
  - Supercomputing: 26 M€ (EINFRA-21)
  - Energy efficiency: part of larger call (EE-19)

- **CSA actions**
  - Competence centers & procurer networks any area preparing PCP/PPIs: 4 M€ (ICT-33)

PCP actions: co-finance (90%) actual procurement cost for joint PCPs + coordination costs
PPI actions: co-finance (35%) actual procurement cost for joint PPIs + coordination costs
CSA actions: co-finance (100%) only coordination costs e.g. procurer networks preparing future PCPs/PPIs
• **Health Work program**
  • **PM-12**: E-health innovation in empowering the patient (€ 18M; 16 Feb 2016)

• **ICT Work Program**
  • **ICT-34**: Open to ICT based solutions for any area of public interest (€ 4M; 12 Apr 2016)
  • **ICT-27(d)**: Robotics based solutions for smart city applications (€ 7M; 25 Apr 2017)

• **Space Work Program**
  • **EO-2**: Downstream earth observation services for public sector (€ 3M; 3 Mar 2016)

• **Climate Work program**
  • **SC5-26**: Soil decontamination (€ 5M; 7 Mar 2017)

• **Security Work Program**
  • **4-DRS**: Broadband communication systems for disaster resilience (€ 10M; 24 Aug 2017)
  • **9-FCT**: Forensic tools/techniques for fight against crime/terrorism (€ 10M; 24 Aug 2017)
  • **13-BES**: Next generation info systems for border/external security (€ 10M; 24 Aug 2017)
• Health Work Program
  • **PM-13**: Deployment of ICT solutions for active/healthy ageing (€ 10,5M; 16 Feb 2016)
  • **PM-19**: Uptake of standards for exchange of digital health records (€ 8,26M; 14 Ma 2017)

• Research infrastructure Work Program
  • **EINFRA-21**: Deploying innovative High Performance computing systems – platform driven e-infrastructure innovation (€ 26 M; 20 Sept 2016)

• Energy Work Program
  • **EE-19**: Deploying innovative solutions for energy efficiency (part of larger call of € 47M; 7 June 2017)
• **ICT Work Program**
  
  - **ICT-33(a):** European wide networks of public procurers preparing future PCPs or PPIs in any area of public interest that requires ICT based solutions  
  - **ICT-33(b):** European wide networks of competence centers on innovation procurement (€ 4M for ICT-33 (a) and (b) together; 25 Apr 2017)

• **Transport Work Program**
  
  - **MG-4.4:** Facilitating PPI on sustainable transport and mobility solutions in urban areas (€ 2M; 26 Jan 2016)

• **Climate Work program**
  
  - **SC5-27:** Preparing PCPs and PPIs in climate action, environment, resource efficiency, raw materials (part of a larger call of € 8,55 M; 8 Mar 2016)

• **Security Work Program**
  
  - **2-DRS:** Situational awareness systems to support civil protection preparation and operational decision making for disaster resilience (€ 1,5 M; 25 Aug 2016)

Ongoing PCP/PPI projects: http://ec.europa.eu/digital-agenda/en/eu-funded-projects

Overview, FAQs, examples on how to apply for EU funding PCP/PPI: https://ec.europa.eu/digital-agenda/news/calls-eu-funding-opportunities-pre-commercial-procurement-and-public-procurement-innovative


Info about scope of each call topic, online drafting and submission of proposals on H2020 participants portal (search per topic e.g. ICT-34): http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/search/search_topics.html

Detailed modalities of PCP/PPI action instrument, evaluation criteria etc in General Annexes to the H2020 Work Program: http://ec.europa.eu/research/participants/portal/desktop/en/funding/reference_docs.html#h2020-work-programmes-2016-17

Finding partners: EU procurement forum, PCP-PPI Linkedin group
Concrete implementation scenarios for synergies: http://ec.europa.eu/newsroom/dae/document.cfm?action=display&doc_id=10945
Additional Slides
Barriers – why underutilisation of PCP/PPI in Europe

- Lack of understanding about legal framework
  -> Some countries didn't allow the purchasing of R&D, didn’t realise IPRs can be left with suppliers, etc

- Lack of incentives
  -> Long duration (budget overrun/not reaching objectives), expensive (all IPR with procurer), single supplier contracts (lock-in)
  -> Risk averseness public sector

- Fragmentation of demand
  -> Single procurers often lacking purchasing power (size) and/or budget to encourage suppliers to radically change/innovate
  -> Cooperation among procurers/demand side needed to bring about change in areas where interoperability etc. is needed
Policy actions to address the barriers

- Lack of understanding about legal framework
  -> eafip, networking national competence centers on innov proc

- Lack of incentives
  -> Use procurement approach (PCP+PPI) that maximizes incentives for procurers and suppliers to engage in innovation procurement
  -> Financial incentives for procurers to start innovation procurements, innovation procurement prizes, action plans/targets

- Fragmentation of demand
  -> Joint procurement at national or transnational level