



Introduction to Innovation Procurement

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HORIZON 2020

Innovation Procurement potential underutilised in Europe

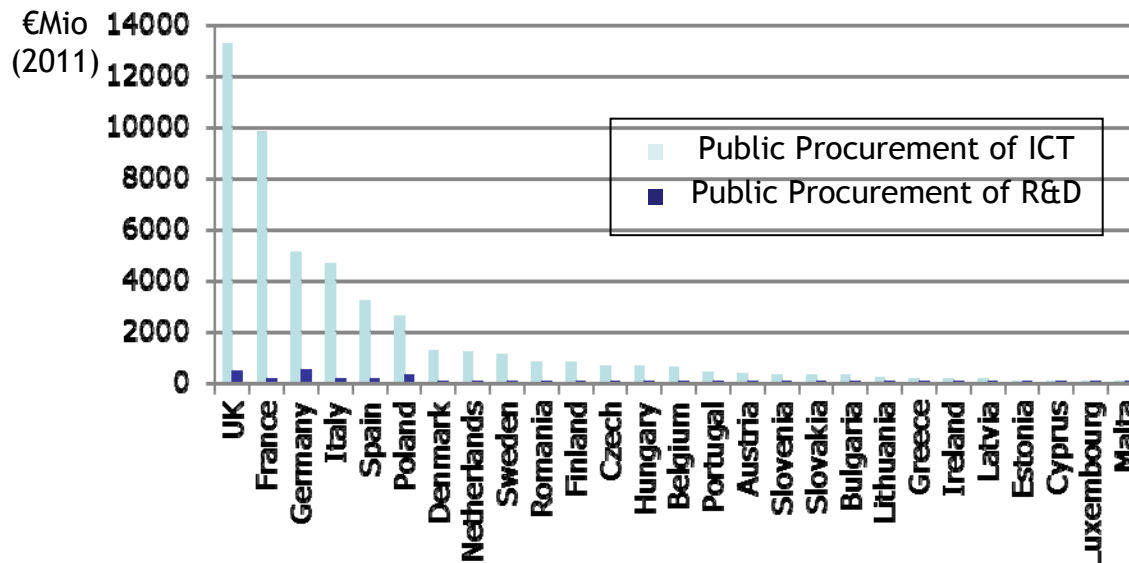
Data from EU studies



- 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€

Pre-commercial procurement (PCP) versus public procurement of innovative solutions (PPI)



Public sector is faced with important challenges.

To tackle these challenges often public sector transformations are needed.

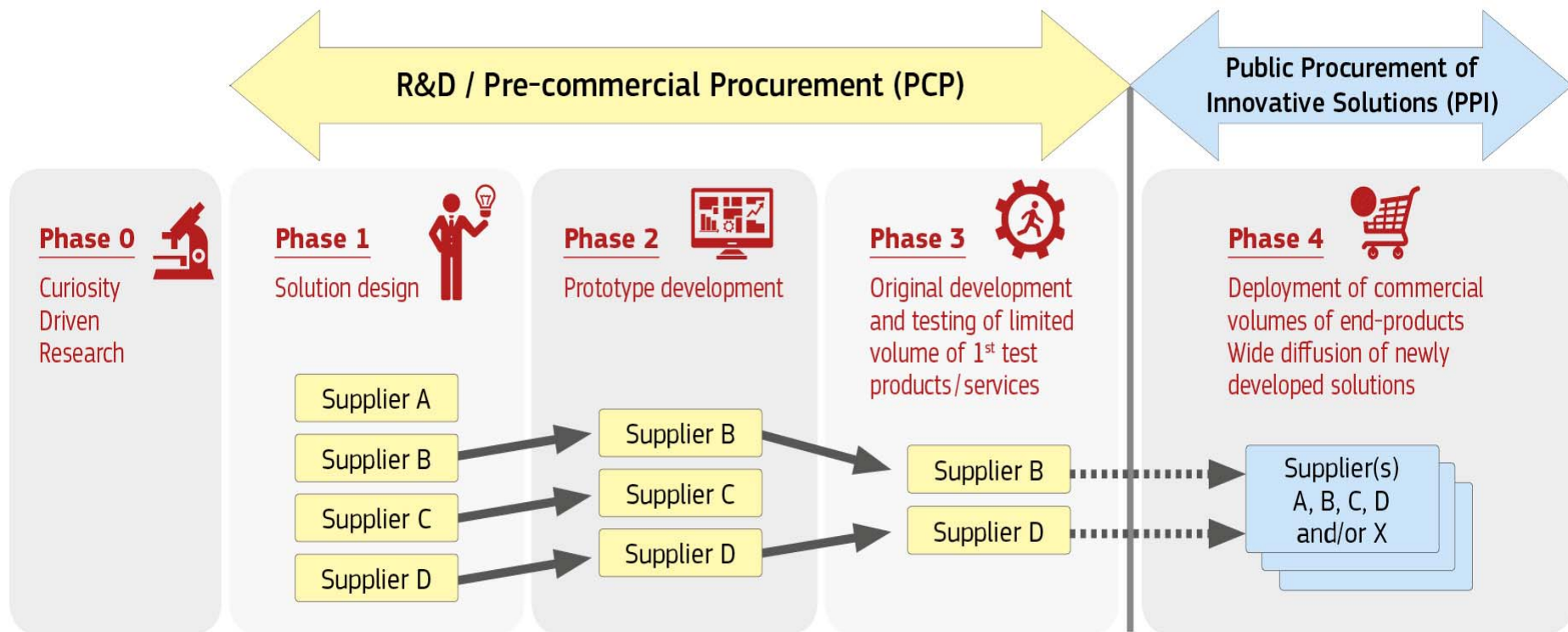
*- In many cases, solutions are close to the market and would be provided if clear requirements/sufficient demand expressed by market. Incremental innovation (product adaptation, scaling up of production...) or non-R&D innovation (e.g. service innovation) can deliver required quality/price, so no need 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**)*

Innovation Procurement = PCP + PPI / Complementarity



- **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



Complementarity / split between PCP and PPI and phased approach enables to...



- 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



Majority of situations (H2020)

Separate 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

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

Evidence on impact of PCP-PPI approach

More info in PCP impact study- on: <https://ec.europa.eu/digital-agenda/en/news/quantifying-impact-pcp-europe-study-smart2014-0009>



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)

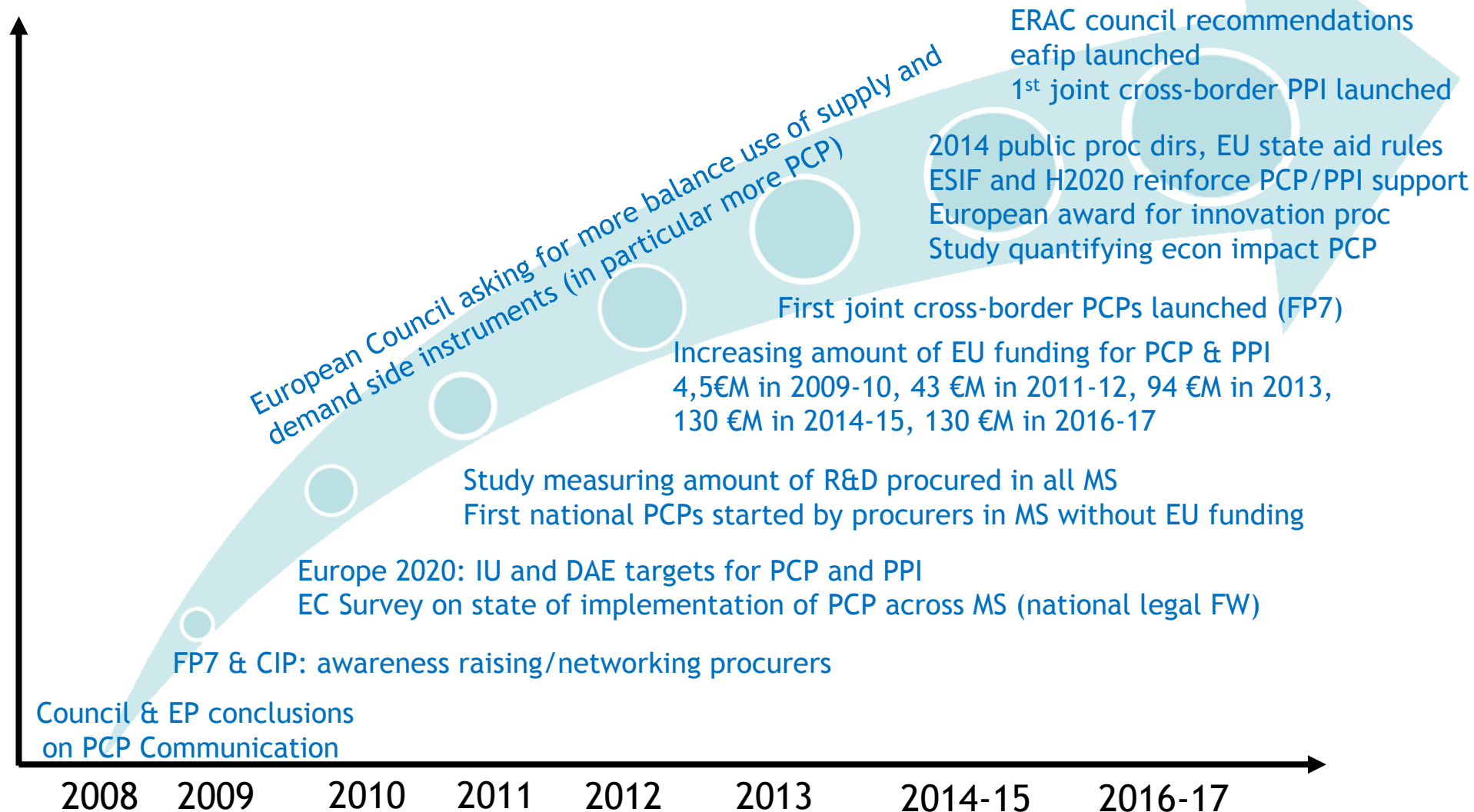
- **Shortening of time-to-market:** Customer drive & feedback-> solution design to tested product -full R&D- in 18 mths (e.g. Lombardy PCP)
- **Removal of supplier lock-in -> 20% cheaper and higher quality products:** evidence from US defense multi-competitor / multi-phase PCP procurements, similar benchmarking 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
http://ec.europa.eu/information_society/newsroom/cf/dae/itemdetail.cfm?item_id=16605

Network national competence centers on innov proc



What's happening at national/regional level?



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

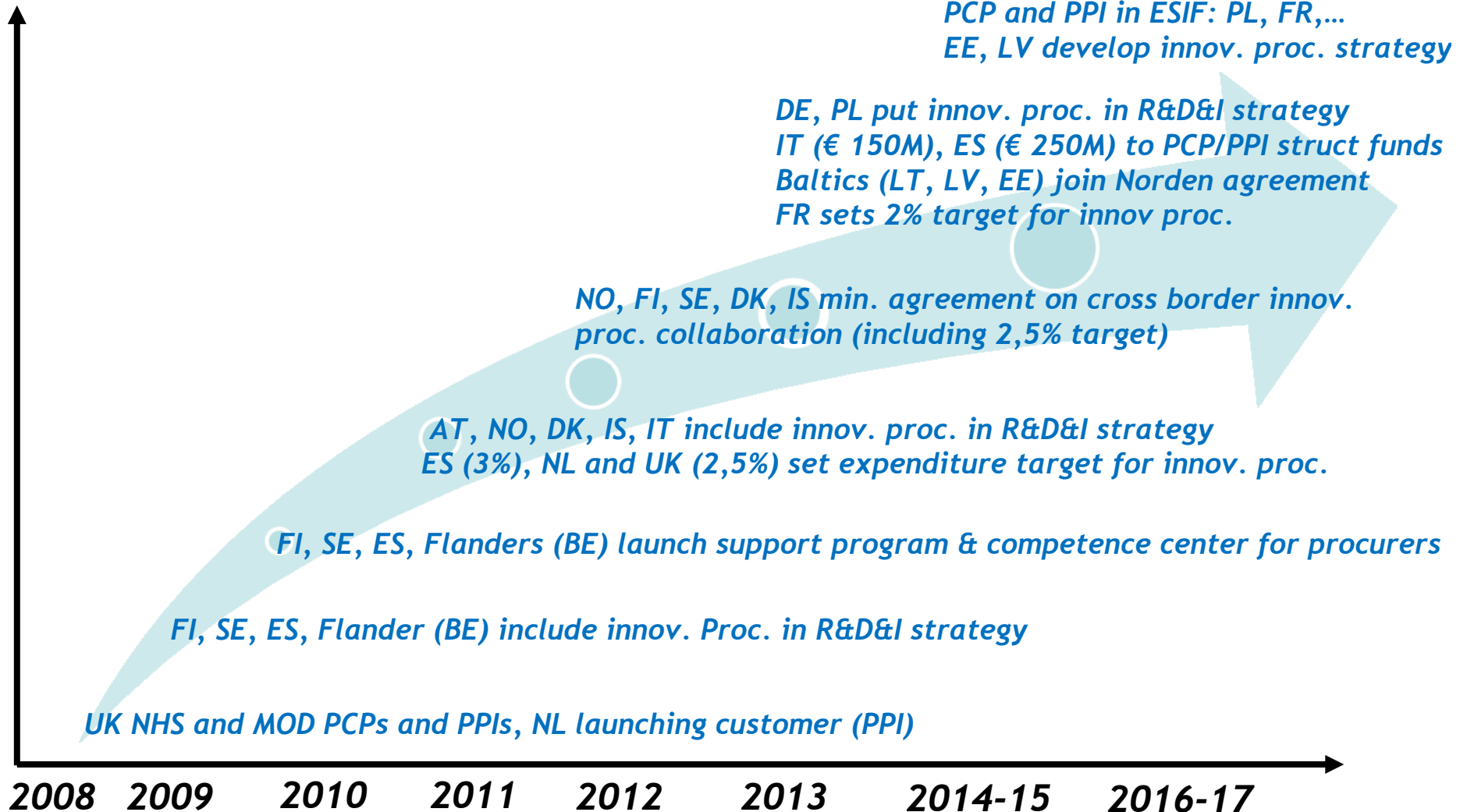
Leverage EU funding

- Horizon 2020
 - ESIF
 - EIB loans
- } Increased support for innov proc

Growing impact at Member State level

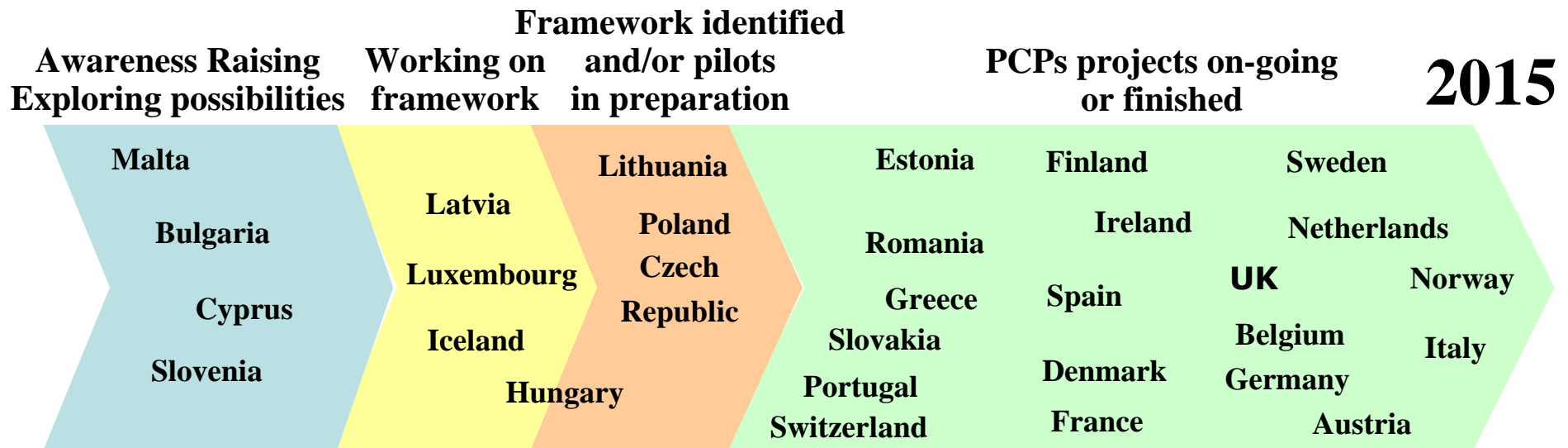
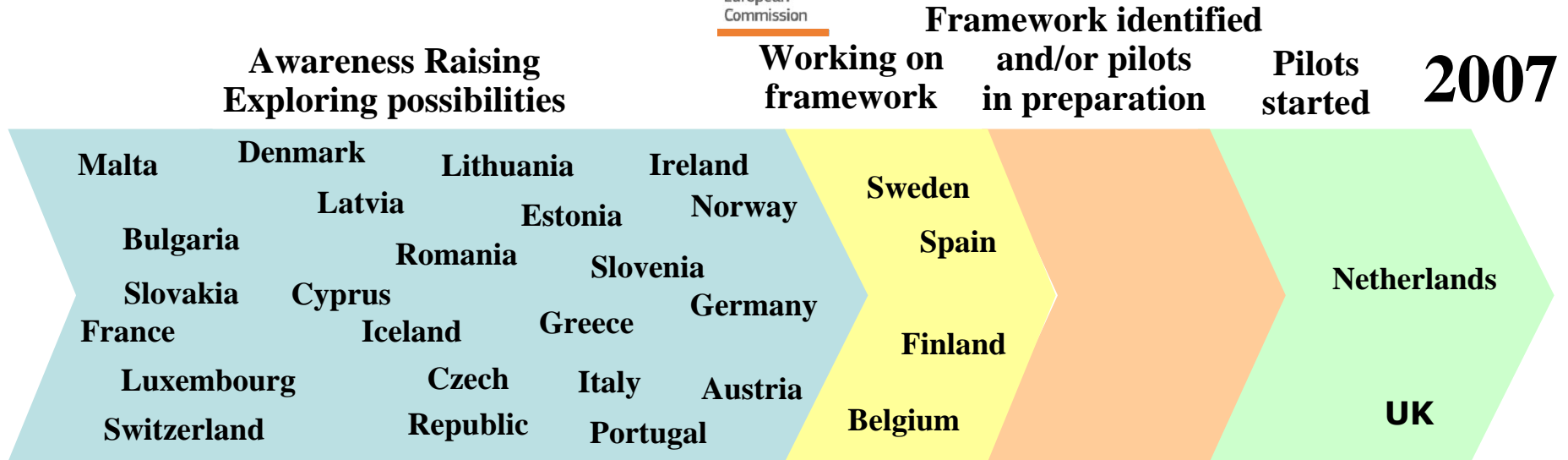


More info on Member State initiatives on innovation procurement
<http://ec.europa.eu/digital-agenda/node/77419>



Progress PCP implementation

Learn from first movers



Examples PCPs EU funded Transport



Non-EU funded Health

CHARM



URL: <http://www.rijkswaterstaat.nl/English/about-us/business-opportunities/charm-pcp/index.aspx>

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



Niguarda Hospital PCP

URL: http://inspirecampus.eu/wp-content/uploads/2014/09/INSPIRE_case_study_LOMBARDY_hospital_pcp3.pdf

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)

Examples PPIs EU funded Transport



Non-EU funded Health

HAPPI

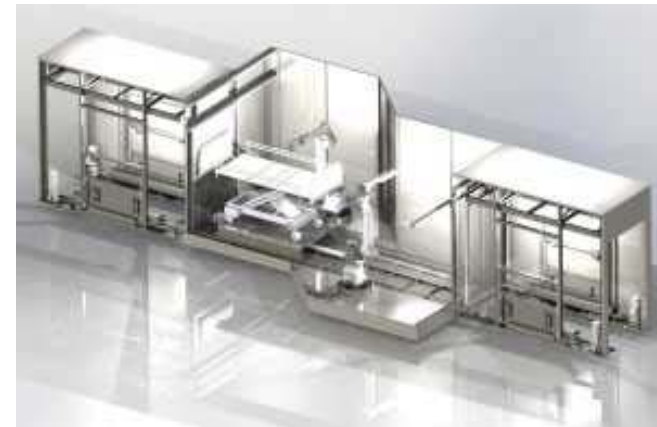


URL: www.happi-project.eu

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%

European Assistance for Innovation Procurement eafip



www.eafip.eu

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

Why European cooperation on PCP-PPI? H2020 funding for PCP-PPI



- 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)

More info on: <http://ec.europa.eu/digital-agenda/en/eu-funded-projects>



HEALTH AGEING

THALEA (PCP)

Tele-detection/care of ICU patients

SILVER (PCP)

Robotics ageing well

DECIPHER (PCP)

Services mobile health data

NYMPHA-MD (PCP)

Mental care for bipolar disorders

UNWIRED-HEALTH (PCP)

Mobile care for vaccination & heart failure

Human Brain project

PCP on supercomputing/brain modelling

E-GOV

SELECTforCities (PCP)

Open City IT platform

HNSciClouds (PCP)

Science Cloud

Cloud for Europe (PCP)

Cloud computing e-gov

PREFORMA (PCP)

Long term digital preservation

TRANSPORT

CHARM (PCP)

Traffic Management

V-CON (PCP)

Virtual road infrastructure modelling

EDUCATION

IMAILE (PCP)

Personalised learning needs

SUSTAINABILITY

PRACE 3IP (PCP)

High Performance Computing

SAFETY

SMART@FIRE (PCP)

Smart Textiles ICT for fire fighters

Overview EU funded projects doing PPIs (CIP/H2020)

More info on: <http://ec.europa.eu/digital-agenda/en/eu-funded-projects>

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

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

More info on: <http://ec.europa.eu/digital-agenda/en/eu-funded-projects>



HEALTH AGEING

SAEPP (preparing PCP)

Ambulance ICT

C4BI (networking)

Cities on healthcare

PRO4VIP (preparing PCP)

ICT for Visually impaired

EPP-eHealth (preparing PCP/PPI)

Cities on e-health

INSPIRE (Training PCP, link with VC)

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

CEPPI 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



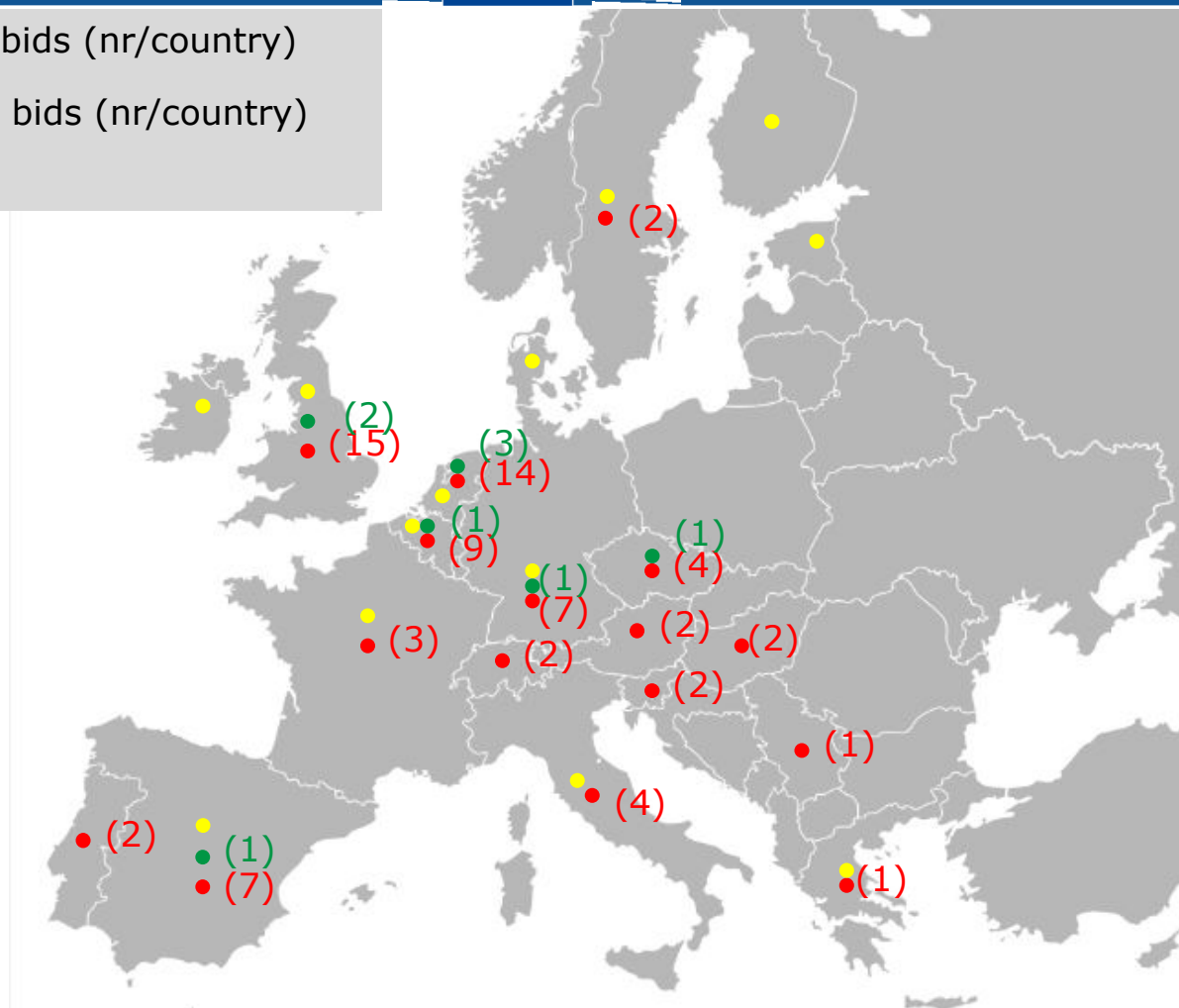
- **7 FP7 funded PCPs in ICT so far awarded contracts**
 - 45 tenderers/consortia of tenderers have been awarded contracts in total
- **Opening route-to-market for new players/SMEs**
 - 75,5% of contracts won by SMEs (SME lead bidder, bidding alone or with partners)
 - Compared to 29% in public procurements 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)

Geographic location winning bidders



- Companies in winning bids (nr/country)
- Universities in winning bids (nr/country)
- Procurers



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 !

PCP and PPI actions – What is covered



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



Every project goes through a preparation stage and an execution stage

PCP and PPI actions – EU contribution



❑ **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)

Always need for experts to help with EU funded projects Horizon 2020



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



HORIZON 2020

2016-2017 calls in support of PCP and PPI

Click on a topic identifier (e.g. ICT-34)



Click on a topic identifier to go to the corresponding call page

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

Calls for PCP actions

Click on a topic identifier (e.g. ICT-34)



Go to the corresponding call page

Call deadlines in red

- 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**)

Calls for PPI actions

Click on a topic identifier (e.g. PM-13)



to go to the corresponding call page

Call deadlines in red

- 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**)

Calls for Coordination and Support Actions

Click on a topic identifier (e.g. ICT-33)



Click on a topic identifier to go to the corresponding call page

Call deadlines in red

- **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**)

Useful Links



Info on Innovation Procurement (EU/national initiatives, news/events):
<http://ec.europa.eu/digital-agenda/en/innovation-procurement>

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>

Basic need to know: H2020 online manual on innovation procurement:
http://ec.europa.eu/research/participants/docs/h2020-funding-guide/cross-cutting-issues/innovation-procurement_en.htm

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](#)

Structural funds support and synergies with H2020



CATEGORIES OF POSSIBLE SYNERGIES BETWEEN H2020 AND ESIF ON PCP/PPI

Joint or simultaneous use of funds

Sequential funding

Additional funding

Alternative funding

Concrete implementation scenarios for synergies: http://ec.europa.eu/newsroom/dae/document.cfm?action=display&doc_id=10945
DG REGIO guide on these synergies: http://ec.europa.eu/regional_policy/sources/docgener/guides/synergy/synergies_en.pdf



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
 - > *PCP com (COM/2007/799) & staff working doc (SEC/1668/2007), 2014 EU public procurement and State aid legal FW updated*
 - > *eaqip, 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*