

Quantifying the impact of Pre-Commercial Procurement (PCP) in Europe based on evidence from the ICT sector

Executive summary (EN)

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Executive Summary

Pre-commercial procurement (PCP) is a competitive multiple-sourcing procedure for procuring research and development services. It involves different suppliers competing in parallel through different phases of development. The risks and benefits are shared between the procurers and the suppliers under market conditions. The PCP is complementary to Public Procurement of Innovative Solutions (PPI) that refers to a public procurement in which procurers act as early adopters of innovative solutions that are new arrivals on the market, but not yet available on a large-scale commercial basis.

The objective of this study is to quantify the economic impact of PCP using a sample of PCP and non-PCP cases implemented in Europe. In particular, the study aims to estimate the impacts of PCP on the following aspects, which constitute our nine research questions:

- 1) improvements in the quality and/or efficiency of the public services achieved by deploying the innovative solutions developed as a result of the PCP;*
- 2) increase in quality and decrease in prices of products resulting from the highly competitive multi-sourcing, phased procurement approach that distinguishes PCP from other procurement approaches;*
- 3) reduction in the risk of failure in large scale follow-up PPI procurements*
- 4) increase in the efficiency of R&D expenditures;*
- 5) speeding up time-to-market for firms and facilitating the access of SMEs to the procurement market;*
- 6) attracting financial investors to Europe;*
- 7) increased interoperability / impact on standardization / reduction of supplier lock-in;*
- 8) impacts on competition structure in the market;*
- 9) increased exploitation of IPRs and R&D results (IPR protected or not) in general.*

We have identified a suitable set of eight PCP cases and collected detailed information from PCP public procurers and awardees through analytical questionnaires. We have collected the same detailed information from public procurers and awardees for a set of suitable control cases. These latter cases are also procurements related to R&D services but differ from PCP along some key dimensions. The questionnaires were designed to obtain information on both the demand-side and the supply-side impacts of PCP compared to the control cases.

The empirical strategy that we have followed pools together three data elements: i) a dataset of procurements for which we have a variable indicating whether each procurement is a PCP or not, ii) a collection of variables measuring how large the

impact is when using PCP compared to other procurement methods, iii) a rich set of variables (defined as “control variables” and specified in chapter 6, which allows us to determine whether this impact was really achieved because of the use of the PCP method or not (to isolate the causal effect produced by the usage of PCP, conditional on other forces that concur to determine such outcomes). Combining these three data elements, we estimate the effect of PCP on outcomes through a regression approach via Ordinary Least Squares (OLS) and Nearest Neighbor Matching (NNM) estimators (see section 6 for a basic discussion of these methods as well as a more technical description).

The evidence obtained from the data analysis shows that, **compared** to other procurement approaches, the PCP is having the following impacts:

- increase in the quality of public services achieved by deploying the innovative solutions developed as a result of the PCP;
- increase in the efficiency of R&D expenditures;
- reduction in the risk of failure in large scale follow-up PPI procurements;
- reduction of supplier lock-in;
- speeding up time-to-market for firms and positive impact on competition structure in the market in terms of access facilitation for SMEs to the procurement market;
- increased exploitation of IPRs and R&D results.

Instead, we have not found significant evidence of a **comparative** impact of PCP in European cases with regard the following aspects:

- decrease in prices of products resulting from the highly competitive multi-sourcing, phased procurement approach;
- attracting financial investors to Europe;
- increased interoperability;
- impacts on subcontracting and awardees’ market shares.

We explain in the report that the lack of significant evidence on these last four types of impacts may be explained by the small sample size of PCPs in Europe that have been completed and by the fact that the PCP cases analysed did not include specific interoperability requirements for the solutions to be developed. As some of the PCP cases analysed in this study are still on-going, the products resulting from those PCPs are not deployed/ on the market yet (so the effect on decrease of prices of such products cannot be assessed yet) and suppliers of those cases could not be interviewed (so the possible impact on attracting additional financial investors could not be analysed).

Based on the lessons learnt from the impact analysis and the experience in the field of public procurement implementation, a series of recommendations is made for new actions to be undertaken at EU level and at national level to encourage the use of PCP and improve the link with potential follow-up public procurement of innovation (PPI).

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