

R&D Procurement of digital technologies, network and sensors in the urban space

Copenhagen Solution Lab

About this Best Practice Case

The main learning aspects provided by this case, is how the City of Copenhagen used Public-Private Innovation cooperation (R&D-cooperation) to develop a Street Lab. Selected use cases (innovative solutions) can be tested in Copenhagen between 2016-2018. The development of new solutions during the project is one goal. These solutions are from a high variety of topics: smart parking, waste management, air quality and noise monitoring, mobility monitoring, data offloading etc.

Title: Copenhagen Street Lab

Cluster Topic: Other

Procedure: Procurement of R&D services, exempted from the procurement directives

Country: Denmark

Procuring Authority: City of Copenhagen

Information: <http://cphsolutionslab.dk/>

Short explanation:

The Smart City Street Lab is a R&D-collaboration entered into according to the exemption rules on R&D procurement in article 16f in the old procurement directive 2004/28/EC (now article 14 in the new directive 2014/24/EU). Thus, the contract is entered into without publication of a contract notice in TED.

Copenhagen Street Lab: Public-Private Innovation cooperation (PPI)

Key Points

- **The City of Copenhagen wishes to conduct structured and open public-private innovation cooperation (PPI) with Cisco, TDC and Citelum.**
- **The partners have so far invested 15 million DKK in the project.**
- **The goal is to develop a test- and demonstration area for the intelligent city of the future in an area in the inner city.**
- **The main objective of the Copenhagen Street Lab is to create an umbrella partnership, which can support the city of Copenhagen to find the right solutions and partnerships to solve their problems.**

The Procurement Objectives

Brief description

With the creation of the Street Lab, Copenhagen wants to build a test area for smart city solutions in real urban space to foster the market to come up with innovations. This idea is based on the award-winning world best smart city concept [Copenhagen Connecting](#). The idea is to create a showcase for the newest technologies within smart city and Internet of Things IoT. This shell “demonstrates the potential in these technologies to citizens, decision-makers and companies, and provides a proof of concept for scaling the qualified solutions to larger parts of the city, as well as to other cities in the region, nationally and abroad”.

“Street Lab is placed in the heart of Copenhagen, by the City Hall Square, H.C. Andersen Boulevard, the most congested inner city street and Vester Voldgade, a more quiet pedestrian street, and is just next door to CPH Solutions Lab”. This gives to opportunity to test in various conditions.³¹

To achieve a cross-sectoral approach Street Lab is developed in cooperation with both private and public actors and funded by both the public and the private partners.

In terms of procurement, the project encompass procurement of research and development (R&D) services from the private partners, Cisco, TDC and Citelum. The procurement R&D

³¹ <http://cphsolutionslab.dk/street-lab/>

services falls under the exemptions rules for R&D-services under the previous procurement directive 2004/18/EC article 16(f)³², requiring that i) the R&D-services are co-financed by the private partners and ii) that intellectual property rights (IPR) are shared between the public and the private partners.

The Public-Private Innovation cooperation is abbreviated PPI (in Danish – OPI – Offentligt-Private Innovationssamarbejde). In this context, the abbreviation PPI must however **not** be mixed up with the term “Public Procurement of Innovation”, also abbreviated PPI, which is an overall term for using different approaches for innovation procurement, e.g. the use of market consultation prior.

Reasons for this procurement

In 2015 the council of City of Copenhagen granted 460.000 EUR for the development of a test area for new technologies and smart city solutions for congested areas in Copenhagen.

It was decided that the test area should be developed through a Public-Private Innovation cooperation (PPI), involving private actors to participate in creating new knowledge via their competences and equipment, hopefully including also new technologies. It was decided that Private co-financing was crucial for developing a test area on an international level, sufficiently scaled to test solutions in a realistic context.

Innovative Aspects

Within this Best Practice Case two kinds of very different innovative aspects can be identified by SPICE:

What was procured is innovative: Procurement of R&D-services through a co-financed cooperation has per se as its goal to end up with viable solutions that – in a later fully developed and/or commercial viable end-user solution - fulfils the needs of the public authority.

The procurement element in the case is however minimal compared to the co-financing element: The City of Copenhagen contributes with access to the area, knowledge on the challenges of the city and person-hours for project management, dialogue with private businesses and development of use-cases in a close cooperation with internal experts within the different technical fields. Cisco contributes with hardware and software and person-hours for qualifying solutions and knowhow. TDC A/S contributes with the digital infrastructure and service platforms, and with person-hours for project management, qualifying solutions etc.

As motivation for participating, the private companies are expected to gain new knowledge and experience with solutions in urban space, and the possibilities of testing new business models and platforms.

The procurement process itself is innovative: Using a Public-Private Innovation cooperation (PPI) for a Street Lab had not done before by Copenhagen. The cooperation

³² Article 14 in the new procurement directive 2014/24/EU

with teach-leading companies provided a high level of knowledge and a perfect allocation of the risks and outputs of the project. This also did lead to a very committed partnership with a very innovative cooperation environment.

The Procurement Process

The purpose of the PPI project is for the City of Copenhagen together with the private partners to develop a test- and demonstration area for the intelligent city of the future in an area in the inner city. The test and demonstration area is intended to develop, implement and test new solutions within smart city and internet of things in partnership between municipality, private company, knowledge institutions and citizens.

Often the solutions that cities need are not off the shelf. Putting so much investment in many smart city developments needs an initial market investigation in order to ensure the investment will not fail. The main objective of the Copenhagen Street Lab is to create an umbrella partnership, which can support the city of Copenhagen to find the right solutions and partnerships for their problems. The cooperation is strictly promoting innovation and getting good ideas to combat the challenges in the City. The solution lab works on the business cases, evaluate how ready the market is and what should the city focus on when we go for tendering a new topic.

Key Reasons for using the Private-Public Innovation cooperation

The City of Copenhagen wanted to build a strong partnership with technology leading private partners for creating and finance a “state-of-the-art” Steet Lab for the purpose of developing and gaining knowledge on innovative solutions within the use of digital technologies, network and sensors in the urban space.

As the cooperation and the financed activities, i.e. activities co-financed by the City of Copenhagen, entirely relates to research and development services, the cooperation could be established subject to the exemption rules of R&D services in the procurement directive. In addition to the public funds of co-financing research and development services, the private partners have contributed with private funds for e.g. works and technology procurement.

Pro and Cons of PPI

It is expected, that the outcomes of the PPI project will provide valuable market knowledge in the technical fields of the Street Lab, and thus will help the city defining its needs and specifications in forthcoming procurement programmes following the PPI projects.

One of the cons of developing new solutions via a R&D cooperation, established without a commercial tender procedure (e.g. open procedure, competitive dialogue etc.) is, that the solutions created during the R&D project cannot be procured in a commercial scale from the R&D-partners without carrying out a tender.

Furthermore, the public authority has to ensure, that i) it will be able to carry out a tender after finalising the R&D-project, including rights to disclose any IRP, and ii) that the private suppliers participating in the R&D-project are not disqualified in the later tender due to competitive advantages.

When defraying costs in a R&D-project with private participation the public authority has to safeguard that no state aid is involved. This includes completing a state aid report stating the values of each partner's contributions including expected values of the outcome of the R&D-project.

Expectations

The private parties do not expect the benefit from the participation to exceed the contributions with which the parties contribute in the PPI Project. There is at the outset not any state aid involved.

Neither is it expected that the private parties gain industrial project rights or other values which compared to the City of Copenhagen's contributions exceed the value of such.

The City of Copenhagen's contributions are only intended for municipal handling of tasks and, accordingly, the City of Copenhagen also expects to gain a profit from the Parties' contributions equivalent to at least the City of Copenhagen's own contributions to the PPI Project.

Key Results

The City of Copenhagen conducted a structured public-private-innovation cooperation with Cisco, TDC and Citelum for the purpose of developing and gaining knowledge on innovative solutions within the use of digital technologies, network and sensors in the urban space (the PPI project).

Street Lab was developed in 2016 with the first selected use cases and the network infrastructure, and will be open for testing new solutions over a three-year period until 2018. The use cases that have been selected for testing in the first phase of the project are:

Smart parking, waste management, air quality and noise monitoring, water management, mobility monitoring, city wifi for tourists, data offloading, asset tracking, services for citizens and tourists.³³

Key Lessons Learnt

1. The Copenhagen Street Lab got a framework for actually collaborating. Deliverables might not be something that insures scalability, but it ensures that open dialog with companies that actually gave some knowledge as well.

³³ <http://cphsolutionslab.dk/street-lab/>

2. The best positive lesson from the PPI is that all parties want it to success as all parties have invested resources in the project.
3. Legal experts are needed to draft provisions on IPR and to safeguard that the private participants will not be disqualified in a future commercial tender.

References and Further Information:

1. Copenhagen Street Lab

<http://cphsolutionslab.dk/street-lab/>

2. CISCO 2016, Copenhagen Turns City Centre into a Smart City Street Lab

<https://emear.thecisconetwork.com/site/content/lang/en/id/5408>

3. Copenhagen Smart City

http://www.almanac-project.eu/downloads/M2M_Workshop_Presentations/Session%204/Mia_Copenhagen_smart_city_2015.pdf