

LEADING PUBLIC INNOVATION PROCUREMENT

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ABSTRACT. For a long time public innovation procurement has been identified as an important instrument in innovation policy. Although we acknowledged that public innovation was needed to solve societal issues and would take strategic steps, public procurement of innovation is hardly ever used in a strategic way. For most public authorities public procurement of innovation is almost the same as general innovation procurement, allowing for incremental, innovative solutions. On the supply side public procurement was seen as a push instrument with a strong focus on launch customer ship. The potential of strategic procurement, requiring long term cooperation between public authorities and the private market, is not used to its full potential. To use this potential, it's important:

- For public authorities to act as a lead customer, defining long term needs, developing an innovation policy and a procurement strategy. This means a shift from a focus on the procurement process ("how") to a focus on the issues to be solved ("what").
- For private enterprises, to act as a cooperative partner, developing tailor made solutions and not pushing innovative solutions

General innovation procurement is easier to implement, it's almost the same as professional procurement. It's also the last step in strategic innovation procurement. Without general innovation procurement, strategic procurement cannot be successfully implemented.

Strategic innovation procurement requires additional funding, for the strategic procurement process and the development of innovative solutions. It's also extremely useful to link supply and demand based instruments.

In some areas strategic innovation procurement is more likely and useful than in other areas. What type of procurement is used depends on the position of the customer on the market and of the research and

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development needed to come up with satisfactory results for the public customer.

Our research on tenders in the Netherlands shows that a lead customer with an innovation procurement strategy to benefit from innovations is more successful than using a tender process solely encouraging contractors to offer innovative solutions. International research shows that an active lead customer results in more successful innovations.

After the introductions this paper starts in chapter 2 with the definition and types of public procurement of innovation, gives an overview of instruments to be used in general and strategic procurement, an overall view on supply and demand innovation instruments. It also gives a brief overview of the influence of the position of the public customer and the research and development needed on the type of procurement instruments used. In chapter 3 we give some insights in the role of the lead customer in the innovation process. In chapter 4 we give an overview of the Dutch situation, analyze best practices of general and strategic procurement, give some key success factors. In chapter 5 we give an overview of national and European support to public procurement of innovation. In chapter 6 we draw conclusions.

INTRODUCTION

Most modern procurement theories and techniques acknowledge the importance of general and strategic innovation procurement. Strategic innovation procurement requires participation of the lead customer in the innovation process of the products and services procured and implemented. Active lead customer involvement in the innovation process will result into more effective innovations that have a longer lasting impact on the market. It will also widen the opportunities to optimize the innovation chain. The importance of lead user involvement depends on the characteristics of the market and the position of the lead user in it.

This paper addresses the options of public procurement of innovation and customer involvement in various market situations and the importance of lead customer involvement, based on desk research. Best practices of general and strategic innovation procurement are analyzed. We also give an overview of Dutch and European support of public procurement of innovation.

My hypotheses are:

- General innovation procurement will only lead to implementation of incremental innovations. For radical innovation strategic innovation procurement is needed.
- The role of the lead customer in different phases of the procurement is important for long term success of the innovation. Without the encouragement of the lead customer, companies will also be risk averse. In most cases the lead customer is the project manager and-or the end user, not the procurement officer. The procurement officer however is crucial during the tendering process, allowing for innovation solutions to be implemented.
- In certain areas innovation procurement is more likely than in other areas, it will also influences the motivation of the customer to invest in new developments.
- The likelihood of an innovation procurement in a certain area and the complexity of the innovation procurement is influenced by the answer on the following questions:

2290

- Does the lead customer have objectives in this area that require innovations?
- Is the market inclined to invest in or to offer innovations?
- Is innovation common in this market?
- The instruments used in an innovation procurement are influenced by the answer on the following questions:
 - Does the lead customer have a dominating position on the market
 - Is the innovative solution already developed/implemented on the private market?
 - Is customization required?
 - What's the cost benefit analysis for the own organization to have innovations developed or implemented.

1. Definition and use of instruments in public procurement of innovation

1.1. Definition and types of public procurement of innovation

In their article on public procurement of innovation Edler and Georghiou point out that public procurement of innovation as a strategy in innovation can take different forms: General versus strategic procurement, direct versus catalytic procurement, commercial and precommercial procurement.

In my definition public procurement of innovation is a public procurement allowing for innovative solutions or a procurement actively encouraging private enterprises to develop and deliver innovative products, goods and works and services. It can be a general and a strategic procurement. A general procurement is a regular procurement allowing for innovative solutions due to the procedures used (competitive dialogue, MEAT criteria, functional specifications). A strategic procurement is a procurement in which the market is actively stimulated to develop new technologies, products and services. It requires a long and sometimes complex process, involving an innovation policy and procurement strategy, before tendering takes place. Precommercial procurement is needed, if the

market fails to develop the solutions needed to solve governmental needs. Precommercial procurement is the procurement of the development of prototypes. The use of acquired new technologies is usually not limited to one specific tender.

The procedure that can be used is in many cases related to the type of innovation needed. In some of the innovation literature and in the ministry of economic affairs, agriculture and innovation, innovation is defined as bringing an invention successful to the market and capitalize on it. A distinction is made between radical and incremental innovation. In radical innovation technological knowledge is required to exploit it is very different from existing knowledge, existing knowledge will be obsolete. For incremental innovation the knowledge required builds on existing knowledge. A general procurement will always be limited to incremental innovation, in many cases new products show minor improvements and usually don't require fundamental changes in the organization and adaptation of specific rules and regulations. Strategic procurement can use radical and incremental innovation. In all cases an intensive cooperation with the market is needed, long before tendering takes place. Implementation requires very often organizational changes and changes of rules and regulations.

In my view strategic procurement and in some case even general procurement can have a catalytically effect. It means that products and services developed for the public market can be applied on the private market. Catalytic procurement activities of public authorities aiming at bringing new products and services on the private market are in my view part of supply based innovation policy and not of public procurement of innovation.

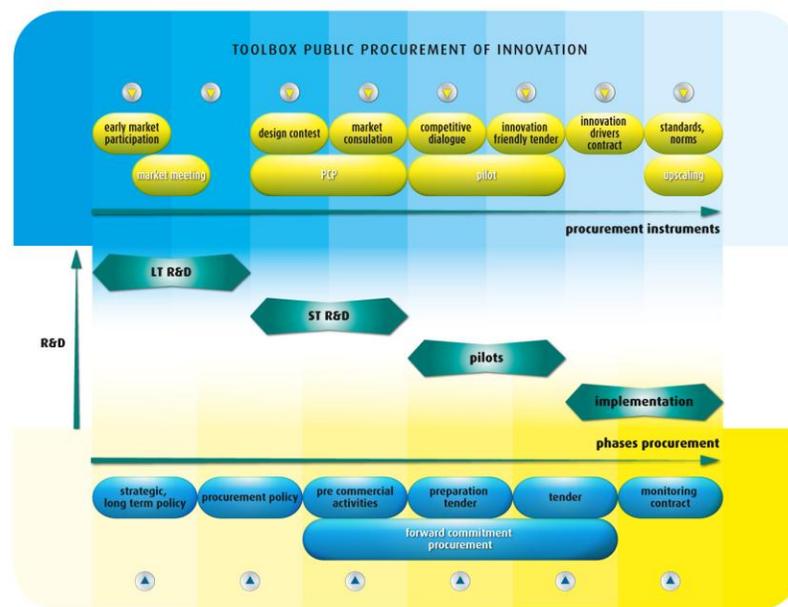
The goals of public procurement of innovation are (1) to solve needs of public authorities to deliver public goods and services in a more efficient and effective way an (2) to improve the domestic market of enterprises developing and offering innovative solutions and therefore improve the export potential of innovative companies.

2292

If only one of these goals, to solve the needs of public authorities, is not met, it's not a procurement but a grant using procurement procedures.

1.2. Instruments in public procurement of innovation

In the figure, the toolbox public procurement of innovation, you will find an overview of the different phases of innovation procurement and the instruments that are available.



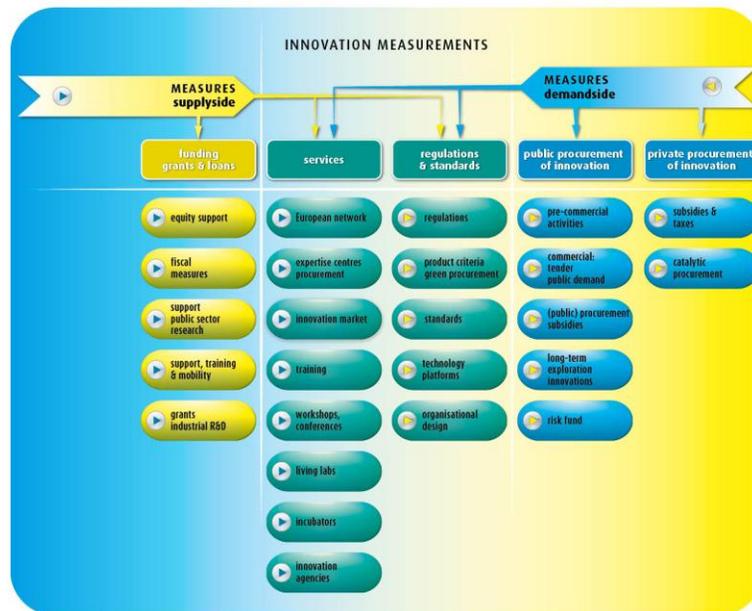
Not every public procurement of innovation has to include all these phases. General procurement, focusing on incremental innovations, is limited to the innovation friendly tendering process. Strategic procurement usually starts with a procurement policy. After defining areas of future interests, there is an intensive dialogue with the

market. Sometimes to target sector roadmaps and to redefine areas of interest and anticipating on organizational changes and/or change of standards and norms. A good example of a strategic procurement is mobility/dynamic traffic management. Public authorities are responsible for new infrastructure and new services, which requires an intensive interaction with the market.

1.3. Innovation measurements, linked to public procurement of innovation

For some sectors, using its creative potential to improve public services and goods, it is very useful to connect public procurement of innovation instruments, the demand side instruments to supply side instruments.

In the following figure we give an overview of supply and demand side instruments.



2294

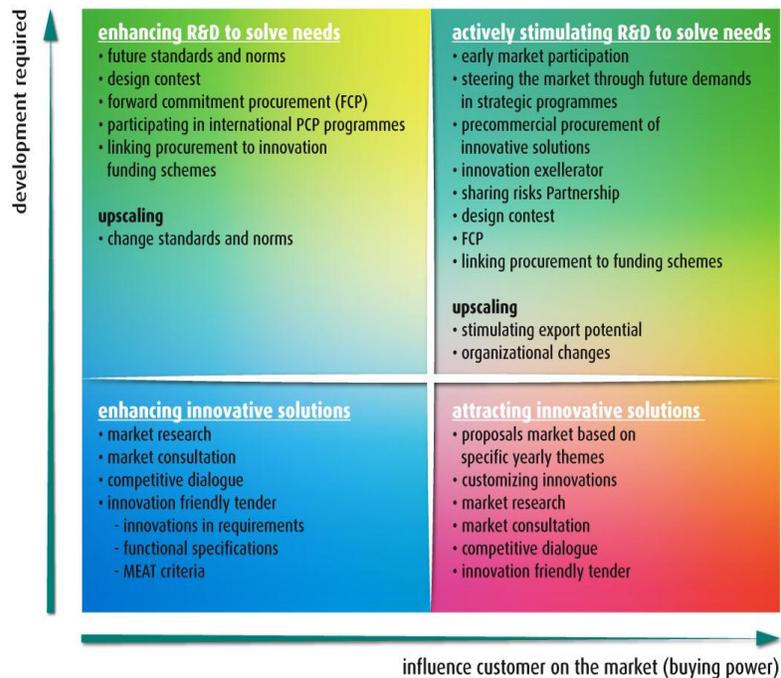
If funding in terms of grants and loans is also being used to develop areas that lead to results to solve needs of public authorities and societal challenges, it's serves multiple goals: implementation of research results and reduction of precommercial procurement costs. High systems management offers a wide range of solutions for the public market.

In these types of strategic procurements, the procurement phase is the implementation phase. The focus however is on the needs and challenges to be met. Those are long term needs, resulting in multiple procurements.

1.4. Use of Instruments in public procurement of innovation in different situations

In the following table we give an overview of innovation procurement instruments in different situations, depending on the market situation and the buying power of the customer, due to the position on the market.

PROCUREMENT INSTRUMENTS DIFFERENT SITUATIONS



If the influence of the customer on the market is limited and the market is inclined to develop new solutions in a sufficient way, instruments in general procurement are the best option. Strategic innovation procurement is needed if the public customer has a dominant position and needs solutions that are not yet on the market.

2. Impact of a lead (public) customer on innovation

2.1. The potential of public procurement as a key driver for innovation

As far back as the seventies the potential of demand as a key driver for innovation was acknowledged. A number of studies explored the meaning of public procurement for innovation. Most of these articles concluded that public procurement of innovation over a longer period of time had more impact than R&D subsidies. Aschhoff and Soffka compared the effectiveness of regulations, R&D subsidies, basic research at universities and public innovation procurement. Public innovation procurement and knowledge spillovers of universities are equally successful. Public innovation procurement is especially effective for smaller firms in regions under economic stress.

2.2. The role of the lead customer

In 2011 Dacclle investigated a sample of tenders of the national government, published in 2010, in order to establish if at least 20 tenders would allow for or encourage innovative solutions. Findings showed that 63% of the procurements didn't lead to an innovation procurement. Most common reason, in 75% of the cases, was the fact that the customer didn't aim for and didn't need an innovative solution. A strong correlation is found between an innovation strategy in the organization and awarding the proposal with an innovative solution(s). If there is an innovation strategy, it's also more likely to find this in the procurement policy of the public authority. There was no correlation between a procurement, allowing for innovations, and awarding a proposal with innovative solutions. Recently DBFM (design build finance maintenance) is developed and implemented in the construction area in the Netherlands. Some of these tenders were

part of our research, none of them awarded proposals with innovative solutions. It's an important finding, but to be conclusive further research is needed. But it does make us eager to explore the role of the lead customer that has an innovation strategy. This innovation strategy can also be clear cut and simple.

The role of the lead customer in innovation and the effectiveness of public innovation procurement

A study for the eu in 2003 among more than 1000 firms and 125 federations showed that for the majority of them new requirements and demand are the main source of innovations, only 12% indicated that new technological developments are the major driver for innovations.

Other studies show that lead customers and users have a major impact on product development. A study of Von Hippel in 1986 shows that from 10% to nearly 40% of users report having modified or developed a product. Lead users anticipate obtaining relatively high benefits from obtaining a solution to their needs - and so may innovate. Second, they are at the leading edge of important trends in a marketplace. Von Hippel also investigated if the commitment of lead users generates commercially attractive innovations. This hypothesis was confirmed. If we transfer these findings to the role of public authorities in innovation procurement, it would lead us to the conclusion that active involvement of public authorities would not only lead to more innovation procurement, but also to commercially attractive innovations that are beneficial to solve societal challenges. The commercial attractiveness is important for entrepreneurs and customers. A first buy involves investments on both sides and only pays off if it's implemented more frequently.

3. Public procurement of innovation in the Netherlands

3.1. Support of public procurement of innovation in the last decade

2298

The ministry of economic affairs, responsible for innovation policy, started a precommercial procurement programme in 2004, using a budget dedicated to solve societal challenges. The name of this programme is Small Business Innovation Research (SBIR). The evaluation showed that entrepreneurs were content with the option to overcome hurdles to develop prototypes. Acquiring new (public) clients after development of the prototypes remained difficult.

In the Netherlands we started the project “public procurement of innovation” in 2009. Our starting point was the parliamentary resolution of Aptrout/Besselink (nr 27406 127), requesting a measurement system and 20 best practices of public innovation procurement.

Previously there was a “launching customer project” in the Netherlands, focusing on guidance to public procurement officers. The guidance dealt with procurement issues such as functional specifications, award criteria and intellectual property rights. The focus was mainly on general procurement. The reason for this project was to use the potential of public procurement for SME innovations and overcome valorization hurdles, a supplier driven approach. The way this project was set up, was consistent with the perspective at the time (late nineties) that the driving force behind innovation procurement are innovative SME’s, offering innovative solutions to public authorities. All that was needed was an early public adopter that used functional specifications, MEAT criteria (most economically advantageous tender) and - especially in case of sustainable innovations- total cost of ownership.

In 2009 the scope of the project is expanded with strategic procurement, this type of procurement needs more support and leads to more radical changes. It requires more active role of the public customer: from launching to lead customer. A lead customer will be inclined to do market research and consultation, based on needs analysis. We also realized innovations couldn’t be dealt with in the same way as saturated products that had already been on the market for some time. Innovations require customization and implementation in the organization of public authorities.

3.2. Increased interest in public procurement of innovation

In the Netherlands the interest in public procurement of innovation is increasing. Recent cuts in budgets of public authorities and the expectation that public authorities are able to solve our major societal challenges, means that public authorities will have to do more with less money. Innovation is needed. Innovation procurement has become more dominant in sustainable procurement. More public authorities are willing to engage in public procurement of innovation from a dual perspective, to stimulate (local) businesses and to buy better solutions with limited budgets in times of constraints.

In 2012 the ministry of economic affairs, agriculture and innovation started a new programme on public procurement of innovation, focusing on the following areas:

- Dynamic traffic management
- Public Space
- Facility management
- Safety and Security
- Health Care
- Use of raw materials
- Sustainable mobility and energy
- Water management.

On these areas projects, both general and strategic innovation procurements, are started and will become best practices. In some of these areas (water management, public space) we link sector road maps to public demands. We also try to match demand and supply schemes. The ministry of Economic Affairs, Agriculture and Innovation is responsible for all supply based innovation support on the national level that makes it easier to link these schemes.

3.3. Organizational structure in the tendering public authority

No matter what instruments will be chosen, it's important for a public authority to create an organization that is able to:

- Identify the short term and long term needs of the organization. This focuses the areas needing innovation procurement.
- Interact with the market. Some technological and communication capabilities are needed.
- Link the different stages of the innovation procurement effectively, from strategic plans to monitoring contracts.
- Builds a solid business case, before the actual tendering process.

In the Netherlands there are two best practices of public authorities changing their organization. One organization, DG public works and water management (Rijkswaterstaat) is a key player and a large buyer with a lot of (potential) influence on the market. Strategic innovation procurement is crucial to them. The other organization, the city of Enschede, is less influential on the market. But they have a wider range of policy objectives.

3.3.1. DG Public Works and Water management (Rijkswaterstaat)

DG Public Works and Water management (Rijkswaterstaat) always had a considerable budget for innovation. Recently they changed the organization, because there were doubts if the budget was used effectively. There was insufficiently coherence in innovation programmes and too few innovations were implemented. A corporate front office for innovations is created – Studio - to link demand and supply. Innovation strategies are linked to the core business, so innovations are developed and implemented, based on the needs of the core business of Rijkswaterstaat. A business case is always part of the innovation procurement process. The focus also shifted from radical innovations (rethink) to also implementing incremental innovative solutions that only require customization to the organization (redesign).

3.3.2. *City of Enschede*

Enschede has made a political decision to chose two areas - safety and security + health care - for public innovation procurement. Through innovation procurement they want to solve societal challenges and stimulate the local economy. Every innovation procurement has to be based on a solid business case with a cost-benefit analysis. A team with representatives of policy makers, management, project managers and procurement is responsible for decision making, giving a go/no go on the business case. Procurement is involved right from the start and is responsible for the innovation procurement process that fits the business case.

3.4. *Best practices in the Netherlands*

In 2009 we collected 20 best practices of public innovation procurement. For this article we selected 5 best practices, showing a variety of different innovation procurements.

3.4.1. Strategic innovation procurement

Digital dike

Two incidents gave rise to the Digital Dike project. One involved the sudden failure of a dike (at Wilnis, August 2003) and another where this almost happened (at Stein, January 2004). The importance of a solution is immense; in the Netherlands alone there are 3,500 km of dikes that have to withstand the waves of the sea, lakes and rivers (primary flood defences). In addition, there are a further 14,000 km of dikes along other waterways (regional flood defences). All these flood defences are subject to regular visual inspection. Sensor technologies could support visual inspections effectively, but had not been developed. DG Public Works and Watermanagement (Rijkswaterstaat) decided to attract innovative solutions, using the options of precommercial procurement. A precommercial tender in the form of Small Business Innovation Research (SBIR) for a development of new technologies for flood defence management and the early detection of weak spots. An invitation in late 2007 yielded 21 proposals, from which the five most promising were selected for a

2302

feasibility study. In April 2008, two proposals were put forward for a working prototype to be made. One of the selected prototypes is GeoBeads by Alert Solutions, which was completed in 2009. The other is "Monitoring from Space" by Hansje Brinker BV, which is expected to be ready in April 2010. There is interest from the market for both innovative solutions.

Characteristics of the procurement:

- DG Public Works and Water management (Rijkswaterstaat) is the major public buyer in the Netherlands, procuring around 5 billion per year.
- There was an immediate problem, due to some incidents
- the technology is available, but had not been developed into solutions to back up visual inspection of waterworks.
- A water innovation programme (WINN) provided the finances for the SBIR tender.
- The responsibility for the dike maintenance shifted from Rijkswaterstaat to the waterships. This hampered the implementation of the new technologies.

Steel bridges

Of the 274 steel bridges built in the sixties and seventies, many of them are now scheduled for reinforcement and renovation. At the same time, the traffic must continue to flow. So what is the best approach? By launching a design contest, DG Public Works and Water Management provided a stimulus to companies, knowledge-intensive institutions and individuals to think about this question and come up with smart solutions. The prize was €500,000 for the most innovative idea. The jury received 165 ideas from the Netherlands and beyond. Ten of these were selected for further elaboration, and DG Public Works and Water Management made up to €100,000 available for each of these. On 13 October 2009, the jury chose the winning proposal at a well-attended symposium. It was a proposal that seemed feasible, was closely in line with the current method of reinforcing the bridge deck with High Performance Concrete, yet works a lot faster thanks to the use of prefabricated concrete slabs.

Characteristics of the procurement

- DG Public Works and Water management (Rijkswaterstaat) is the major public buyer in the Netherlands, procuring around 5 billion per year.
- The public authority was motivated to look for new solutions of a problem that couldn't be solved with existing methods and techniques.
- A specific programme was set up to attract innovative solutions.
- Stakeholders tendering the renovation of the steel bridges were involved, but there is not a strong commitment to use the new solutions. It remains a challenge to encourage innovative solutions in new tenders for renovation projects.

SPADES of Dutch Space

More than 10 years ago NLR, Dutch Space and the Dutch Ministry conducted a joint study to the feasibility of a precision-delivery parafoil system. The positive outcome resulted in the development of SPADES (Smart Parafoil Autonomous Delivery System), a reusable autonomously guided air delivery cargo system, in support of civilian and re-supply missions. Dutch Space received a 17% subsidy for the development of the system. The Ministry of Defense signed a contract in 2009 for the purchase of fifteen autonomously guided SPADES parafoils and became the first customer. The introduction of SPADES was hampered by rules, regulations and initial implementation problems.

Characteristics

The Ministry of Defence is one of the largest public buyers with an estimated budget of 3,7 billion euro.

- The ministry was cooperating with Dutch Space at an early stage, conducting a joint feasibility study. On a policy level there was perfect cooperation, operational knowledge and facilities of the ministry weren't used to its full potential.
 - 3.4.2. As the first customer the ministry expected a 100% perfect product, the industry was held responsible to

2304

solve introduction problems in the organization. *General innovation procurement*

Cell broadcasting

The Ministry of the Interior and Kingdom Relations (BZK) in 2005 was looking for alternative ways - besides the current capabilities using sirens, radio, TV and the Internet - to alert the public and communicate with them in crisis situations.

During a stock take of new technical possibilities, Cell Broadcast presented itself as an interesting candidate for alerting and communicating with citizens in a targeted way in crisis situations. This function - which uses the existing network to send messages to devices within a certain range - is already available as a standard feature in mobile networks.

The Ministry of the Interior issued a Request for Information (RfI) before summer 2008 for the subsequent tender of the NL Alert broker function. The reactions resulted in a set of functional specifications, allowing more parties to respond to the request for quotation. In addition to the agreement with the party who would act as the broker, the Ministry of the Interior also signed contracts with each of the three mobile network owners in Netherlands. These contracts were not tendered, but were negotiated in a process with all three parties together.

The Ministry of the Interior also applied for a subsidy from the then Ministry of Economic Affairs relating to 'ICT and social sectors', specifically to extend the alert service with the reading aloud of messages for the blind. Furthermore, the project team continued to look for situations where most people have their mobiles turned off, such as during sports activities.

In 2011 NL Alert is made available in addition to sirens (and radio/TV/Internet) to send messages via the mobile phone network to

devices with range of the transmitters in the area affected by the disaster. The contract with the economic operator that will support this service was signed in early 2010.

Characteristics

- Alerting citizens in crisis situations is a unique responsibility for public authorities.
- The importance to society of providing citizens with better information in crisis situations, as well as the political desire of the then Minister of the Interior to increase the ability of citizens to help themselves was the motivating factor for the Ministry of the Interior to seek new ways of alerting the public.
- The technology was available, implementation to use this as yet unused technology for the purpose of crisis communication required taking many technical hurdles in the field of standardization, deployment within networks, and settings of mobile devices.
- The procurement process was relatively complex, high-quality procurement knowledge at an early stage was essential, because the process demands flexibility and procurement expertise.

Statiq cooling

Following a hot summer, the property manager of this government building was asked to think about a solution for the excessive heat in the gymnasium of Noordsingel prison. Since the building had already been put forward as a possible sale candidate, an architectural solution would not be appropriate. A technical consultant of the Government Buildings Agency was requested to find a solution. Based on his knowledge of the market, he advised to implement statiq cooling, developed by a SME. This new cooling system works on the principle that warm air is cooled by water which then evaporates. A contribution from the Green Technologies Programme made it possible for the Ministry of Justice to achieve this solution as an early customer. At the time Statiq Cooling (SC) still had very limited application, despite its advantages: it consumes relatively little energy, it uses the outside air and can work in combination with open

2306

windows and doors. The Government Building Agency used a negotiated tender procedure with three installation contractors for the installation of the SC system.

Characteristics

- The Government Buildings Agency (RGD) is a large buyer on a market with public and private buyers.
- The property manager had an immediate problem to solve and was open to new solutions. A technical consultant had the market knowledge to come up with a viable solution. It also helped to achieve the objectives of the Energy Programme 2020 - savings of on average at least 2% a year and 25% within government-owned buildings.
- A possible threshold, higher purchase cost, was overcome by the availability of a subsidy.
- The tender procedure was simple, future use in larger projects can also be easy if this system could be incorporated in the schedule of requirements.

3.4.3. Analysis of best practices

Analyzing these 5 best practices, leads to the following conclusions:

- In all cases presented the lead customer had an active interest in new solutions to solve immediate or long term problems.
- Project managers and users are the driving force behind innovation procurements. In many cases they are taking the initiative and also play an important role in the customization of innovations. The innovation fulfills a need that can't be met by existing products and is often linked to goals of the project or strategic goals of the organization.
- A professional procurement is a prerequisite to procure an innovation. A key success factor in some of the cases was the involvement of a procurement officer at an early stage to allow for an active role in the entire tender procedure, as an equal partner of the project manager.

- The tendering process of the general procurements is not very different from a regular procurement. In one of these cases, statiq cooling, the procedure is relatively simple. Innovations can already gain better opportunities by incorporating the innovation in a schedule of requirements or dividing a single tender into a number of lots.
- Implementation of more radical innovations may involve change of the organization or technical regulations. These issues are often underestimated. A lead customer has to be involved in sharing the risks of introduction and taking away hurdles such as rules and regulations. Innovations cannot be regarded in the same way as mature products. The dike measurement solutions required new rules and regulations. It's really hard to change the organization.
- It's beneficial to link these demand based instruments to supply based subsidy schemes. This could also be realized on a higher level, linking innovation strategies and subsidy schemes to solving societal challenges and innovation procurements.

4. Support of public innovation procurement in Europe, on national and eu level

In many European countries the national government supports public procurement of innovation. The starting point is usually the stimulation the implementation and export potential of innovations. It's important to support public procurement of innovation, because the process, especially if it's strategic innovation procurement, costs more money and takes more time on the short term. Beneficial effects are usually paying off on the long term.

In this article I will give a brief overview of the support of innovation procurement in European countries and of the European Commission.

The United Kingdom

The objective of most innovation procurement activities is the Government as an intelligent lead customer, using innovation to meet

2308

public sector challenges and to supporting innovative companies, – especially SMEs. Different schemes are used: a PCP programme, SBRI and Forward Commitment Procurement (FCP). There are SME Product surgeries, Ideas portals (MoD CDE, NIC).

Belgium

An action Plan for PCP and PPI was launched in 2008. The knowledge Centre Pol hosted by IWT (Innovation Agency) developed a legally approved methodology in 3 phase: Innovation Platform, PCP and Commercial Procurement. The programme has a back Office with platform managers, website and guidance. 48 projects are defined by public authorities, 15 approved. The budget is 10 million euro. Launched projects are the E-book platform, Cultural GPS for Citizen (ICIS), Towards a more sustainable greenhouse horticulture and Visual Flanders : Image archiving and processing chain improves the accessibility of crucial information for public services.

Sweden

Sweden has a long experience of catalytic procurement by the Swedish Energy Agency. There's high level political attention on innovation procurement, independently and as enabler in innovation policies and initiatives. The innovation agency, VINNOVA, has the overall responsibility innovation procurement based on Government Inquiry on Innovation Procurement (2010). A PCP initiative is launched in April 2011 (process support and part-financing contracts). In different areas there's specific attention to innovation procurement. The Ministry of Health and Social Affairs has initiated a Government Inquiry on the regulatory framework, The Swedish Environmental Management Council promotes and supports green innovation procurement and the NICE (Nordic Innovation Centre) has published a report: "How Public Procurement can stimulate Innovative Services". There's also Increased regional/ local interest in the Sane region and the City of Vasteras, partner in many EU consortia.

Finland

The Ministry of Economic Affairs and the Economy coordinates public procurement. The innovation agency, Tekes, is responsible for funding scheme for public procurement of innovation rewarded to procurement unit. Focus areas are construction, water, social and health care, energy, safety and security. More than 20 innovation procurements are funded, there's an Intention to fund PCP projects. Funding up to 75% for planning and R&D, 50% other costs. Integrated innovative service concepts have been implemented in new urban areas.

Spain

The National Strategy to Innovation (E2I) foresees the establishment of PPI's instruments. It involves an action Plan, working group and a

- Inter-ministerial Working Group. Goals are:

1. Improvements of Public Services (efficiency gains)
2. Leveraging funds towards R&D entrepreneurial activities
3. Supporting commercialization of entrepreneurial activities.

Within each programme, like the aging programme, there's a specialised Gateway to foster PPI, to identify potential PPI cases (PCP and FCP), give technical assistance the procurement bodies on R&D matters and foster PCP and FCP cases. Guidance is given on the legal framework and best practices.

Enterprises, business associations and platforms and public authorities show profound interest in this programme. There's an increased use of Public-Private Partnership Contract and the Competitive Dialogue.

The Netherlands

Since 2004 the Netherlands has a pre commercial procurement programme, Small Business Innovation Research (SBIR). In 2009 we started our activities on public procurement of innovation, linking to the non-catalytical part of the SBIR programme. In the former cabinet there was funding for PCP activities, the SBIR programme. The PPI programme was a combination of guidance, building a network of public authorities and collecting best practices. There was also a

2310

cooperation with Rijkswaterstaat to organize early market participation activities.

Our new cabinet has an economic policy, focusing on key economic markets (de topsectoren). Representatives of the key economic markets were invited to draft an agenda. One of the constraints was a considerable cut on subsidies. Stakeholders of most key economic markets, like high tech systems management, creative industries, watermanagement, pointed out the importance of public innovation procurement. As a result our cabinet aims to spend 2,5% of the total budget on public innovation procurement. A programme, focusing on the societal challenges dynamic traffic management, watermanagement, raw materials, public buildings and surrounding areas, safety and security, health care, facility management and maintenance and energy efficiency will be realised in close cooperation with national and regional public authorities. Projects of other public authorities are stimulated and used as a best practise to encourage public authorities. A wide range of PPI instruments can be used, including our PCP programme, SBIR. As much as possible we will link supply and demand instruments. A virtual meeting point for supply and demand on innovation procurement will be developed.

Eu support

The eu has supported precommercial procurement activities for the last five years. Since 2011 they also support public procurement of innovation on topics, like transport and public lightning. In the new framework, horizon 2020 both precommercial and public procurement of innovation will be supported.

CONCLUSION

In this paper an overview of different types and instruments in public procurement of innovation is presented. We also showed some best practices in the Netherlands and support schemes of the eu and in different European countries. Based on these findings I draw some preliminary conclusions:

- There are two distinctive types of public procurement of innovation, used in different situations. In both type of procurements an active lead customer is needed, focusing on “ what” is procured and not just on “ how” it is procured.
- It’s important to use the suitable type of procurement, using a variety of procurement instruments, depending on the wishes and needs of the lead customer.
- It’s useful to encourage public authorities to interact with each other and with the market and build business cases that will link the different stages of public procurement of innovation. Link also demand and supply schemes if possible.
- Public procurement of innovation projects can be used as best practices, to stimulate public authorities to pick it up in a positive way
- It’s important to support public procurement of innovation, especially strategic innovation procurement.

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