

## STEPPIN, STANDARDS IN PROCUREMENT AND INNOVATION

Leendert van Bergeijk and Joep Frijdal\*

**ABSTRACT.** Public procurement has been found to be an effective instrument for demand driven innovation policy (Edler, 2007). Public procurement can help to reduce or even abolish some of the hindering factors of the diffusion of innovative technologies and products. But how do standards foster innovation? In which cases? By what standards? The project STEPPIN looks into how innovation amongst bidding companies can be fostered by improving the way in which existing standards are referenced in European public procurement processes. An analysis of a practical case demonstrates how standards can be used in a tender. Two different standards have been used in combination with additional technical requirements, each having an effect on the opportunities for the supplier to innovate. Recommendations to enhance an innovative effect are presented. This paper shows the practical use of standards and its ability to foster innovation.

### INTRODUCTION

Public administrations have a huge impact in the economy being the largest procurers of goods and services. A stronger role for standards in support of innovation is important for the European effort to address economic, environmental and social challenges. While the lack of standards, the limited uptake of new standards items or the slow updating of existing standards hamper the uptake of innovation, standards which are lively, strong and well implemented has the power to accelerate the access of innovation to both domestic and global markets (EC, 2008).

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\* *Leendert van Bergeijk, M.Sc., is a Consultant, Virage Environment & Management, and Assistant Project Manager of the STEPPIN project. Joep Frijdal is Managing Consultant, Virage Environment & Management and Project Manager of the STEPPIN project.*

The appropriate use of standards in public procurement may foster innovation, while providing administrations with the tools needed to fulfil their tasks. Instead of prescribing particular technical solutions, the use of technology-neutral standards allows contracting authorities to call for advanced performance and functional requirements (e.g. relating to environmental aspects or to accessibility for all), thus stimulating the search for innovative technologies that provide best value for money in the long term, while ensuring safety and interoperability (EC, 2008).

An interesting example with respect to the use of standards is a tender of a German police department. The objective of this tender was to acquire comfortable and protective fabric that will be used to manufacture protective garments. Although appropriate standards were used in the tender documents, additional requirements did limit the options for the suppliers to provide innovative solutions. (See chapter “Personal Protective Equipment”).

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### **STEPPIN PROJECT**

The project STEPPIN (Standards in European Public Procurement Lead to Innovation) is funded by the 6<sup>th</sup> Framework Programme. It is part of a series of projects addressing the interrelation between standards and innovation. Whereas the other projects have a specific sector or technology focus, STEPPIN addresses the potential standards can play in public procurement processes to promote innovation.

The main objective is to stimulate innovation through reference to standards in public procurement. STEPPIN has to ensure that knowledge that is being created is attractive for purchasers and is written in their professional-language so they can use it.

The approach of the project is to start from a survey of the present situation, via analysis and extensive discussion and involvement of networked stakeholders, via a practical handbook and knowledge gathered in STEPPIN databases for procurement to a motivated and interested group of early users in all 25 Member States.

## **INNOVATION**

STEPPIN uses the definition of innovation of the Organisation for Economic Co-Operation and Development (OECD). It defines an innovation as the implementation or diffusion of a new or significantly improved product (goods or service) or process. But a new marketing methods or a new organisational methods in business practices are also innovations.

Innovation activities are scientific, technological, organisational, financial and commercial steps which actually, or are intended to, lead to the implementation of innovations. Specifically, a product innovation is the introduction of goods or services that are new, or significantly improved, with respect to characteristics or intended uses. This includes improvements in technical specifications, components and materials, incorporated software, user friendliness or other functional characteristics.

A process innovation is the implementation of new or substantially improved production or delivery methods. These include considerable changes in techniques, equipment and/or software (OECD, 2005).

In general it can be said that inventions are not necessarily innovations. They become innovations when they are implemented successfully.

## **STANDARDS**

Standards do play an important role when two or more parties need to understand each other: Standards facilitate communication by providing terms and their definitions; they describe characteristics of parts and how they look like so that other parts can be produced to match; they help to define quality of a product or a service so that parties know what they get and what to look for when checking for quality. This is also true when two parties are linked by a contract, as is the case in procurement. The purchasers as well as the tenderers want to be sure that they understand each other's language, and that they have the same notion of the goods or services procured and offered.

The use of standards is an easy way to ensure this understanding when setting up tenders as well as bids; in addition to this referring to a standard can save time as standards contain all or most of the information about the (technical) requirements for a product or service. The use of a standard limits the volume of the specifications

in the tender text; the risk of making a mistake in describing a product or service is minimized and the terms used and defined in a standard help all parties to talk about the same aspects. Standards also help to get the best offers and to get innovative solutions for a specific need and create a level playing field because all suppliers can use the same standards.

Knowledge about standards and how to use them is therefore important to be able to take full advantage of the benefits of using standards in procurement. It is important to realise that standards are developed through a consensus process, involving participants all interests concerned: industry, authorities and civil society, and that the use of standards, except when related to CE markings, is voluntary.

For purchasers the most relevant parts of a standard are the scope and the provisions or requirements

### **CE Marking**

Free movement of goods is one of the cornerstones of the European single market. For certain product groups essential health and safety requirements have been set out in European Directives. Products that comply with these essential requirements can then be placed on the market everywhere in the EU.

For each Directive specific harmonised standards exist. Conformance to such a standard implies that the product complies with the essential requirements. However the use of these standards remains voluntary and manufacturers are free to choose any other technical solution that provides compliance with the essential requirements. They may prove conformity through one of the conformity assessment mechanisms referred to in the respective Directive

The CE marking of products covered by these Directives is mandatory. The CE mark guarantees conformity with the essential requirements, irrespective of whether the product applies the mandated standard or other technical specifications complying with the essential requirements.

The 'new approach' Directives are total harmonised directives. This means that member states may not derogate from the essential requirements, which are adopted by taking into consideration high levels of protection. Moreover, member states may not refuse CE marked products/services on grounds of technical inadequacy, unless the escape procedure provided for within the directive is followed.

There are at the moment some 25 ‘new approach’ directives and a few hundred of harmonised standards created in their context (see [www.newapproach.org](http://www.newapproach.org))

For public purchasers this implies that whenever they are procuring goods that are covered by these Directives they have to accept every offer that complies with the directive even when this compliance has been proved in a different way than with one of the harmonised standards. They cannot change the essential requirement, but they can add other requirements.

### **Standards and Innovation**

Standards and innovation can go hand and hand. Procurers are looking for the best value for money; the best value is not only determined by the price but also by how a product or service is fulfilling the requirements and needs of the purchaser. There may be solutions available that the purchasers have not learned of – to gain access to these solutions the purchasers must describe the performance that is needed so that the suppliers can offer a product or service that fits exactly these needs. Such innovative solutions are no accidental side effects – the purchasers can push the suppliers even without increased risk, if a standard is used to define the required performance. Therefore, the intelligent use of standards can lead to innovative solutions.

To push this process, the purchasers must make use of the right kind of standards; standards can be used for minimum criteria but also for award criteria tied to the performance specified in the standards, a better performance will get a higher score so that suppliers are invited to offer the best solution they can provide, including innovative solutions. If purchasers need a better performance than is defined in the standard, it is possible to demand a performance surpassing the performance requirements defined in a standard. They cannot change the essential requirements of CE marked products. In order to promote or allow innovative solutions, i.e. both the development of innovative products by the tendering companies and the option of the procuring organisation to buy innovative products, the procurers should preferably reference functional or performance standards or measurement standards, i. e. specifications defining maximum input, e. g. of energy, or minimum output, e. g. printed pages per minute, instead of specific design or product standards (Blind, 2008).

Performance standards are standards which describe a certain function or performance of a product or process. This is reflected in

the technical requirements in the standard. These standards allow the supplier to offer various solutions, within the frameworks of the standard, for the product or process. These standards can replace detailed technical specifications in the tender documents. This does prevent that a specific product is being required.

Measurement standards are standards, which describe methods to measure specific qualities of a product, service or process. The quality of a product, service or process in this standard will be guaranteed by a certain value as a minimum requirement. By choosing the right value for a product, service or process the supplier has the opportunity to offer an innovative solution at an interesting price.

Using measurement standards in a cleaning services contract make it possible to define the degree how clean a room should be instead of the frequency it is being cleaned.

### **PERSONAL PROTECTIVE EQUIPMENT**

Personal Protective Equipment (PPE) is an important sector where public procurers are fostering innovation. Huge amounts of public money are used for PPE. Last month the US MoD announced that they will buy over the next 12 months at least \$100 million worth of personal protective fabrics from TenCate, a leading manufacturer of protective fabrics. Innovation is important for improving comfort and safety performance of PPE products throughout their entire use and life cycle, creating added value to buyers and users. The PPE market has recently been identified by the European Commission as one of six Lead Markets offering significant growth potential for innovative products and services at European and global scale.

The following case demonstrates the importance of public procurement (in this case a German police department) in combination with the use of standards to foster innovation in the PPE market. This CA used two standards that can foster innovation in this particular case: a performance standard and a measurement standard.

#### **Case German Police Department**

A German police department wanted to tender comfortable and protective police fabric. In the tender document they described clearly what they wanted to buy and what performance was required.

The CA wanted to buy flame-resistant and antistatic fabric for the manufacturing of comfortable and protective police garments. The fabrics have to be CE marked in conformance with the Council Directive 89/686/EEC for Personal protective equipment of 21 December 1989. This Directive contains the essential requirements for i.e. flame-resistance and antistatic properties.

The CA was able to cover this CE marking by specifying the appropriate standards, which cover the essential requirements for this CE marking.

The essential requirements for the electrostatic properties for instance are covered by the standard EN 1149: *Protective clothing - Electrostatic properties*.

This standard has Europe wide acceptance because it is an EN standard. It is a performance driven standard because it describes performance requirements for the dissipation of electrostatic charge from the surface of materials for garments.

The CA made reference to this standard in their tender document as follows: “The police garment should be permanently antistatic and not be a direct conductor. The discharge of 10% of the original existing tension must be within < 0.5 second. In addition to antistatic properties no risk may exist when working with electrical equipment and cables either. Electrostatics must be in the proportion of EN 1149.” This EN 1149 standard gives a supplier the opportunity to innovate. Because of the performance character of the standard, a supplier has the possibility to offer different types of fabrics.

Another requirement for the fabric was colourfastness. The tender document makes reference to the standard ISO 105 B02 (*Textiles – tests for colour fastness*), which deals with the so-called ‘change of colour intensity’ in other words: the way the colour-tones of the fabric change by the influence of the light. A colourfastness of 5 is required. The existing (functional) standard ISO 105 B02 contains the highest value of ‘8’ for this component. In short; at a value of 8 the changes in colours will hardly be influenced by light (100% conservation of colour).

## **SUPPLIER**

In an interview the supplier, TenCate, was asked for its opinion about the opportunities for innovation provided by this tender. Normally suppliers offer in this case a Nomex product, which is

lightweight, flame-resistant, comfortable and complies with the EN 1149 standard. Because of the use of this standard the company TenCate B.V., which was the final supplier for these fabrics, should have been able to offer more innovative solutions such as, for example, their Millenia Light® product. This product is the lightest outer shell presently in use, which offers the possibility to develop a very comfortable police garment. In addition Millenia Light® gives more flame and thermal protection and has more strength and durability than Nomex. And this product also complies with the EN 1149 standard.

But TenCate wasn't able to offer this innovative solution, because the CA added specific technical requirements in addition to the requirements from the performance-based standards. The CA did specify that the fabric should be composed of 93% Meta-Aramid, being equivalent to Nomex. Furthermore the fabrics should be supplied in the colours moss green, dark green and dark blue.

These additional requirements did limit the innovative opportunities and made it impossible for TenCate to offer their innovative products which are not composed of 93% Meta-Aramid and that are often available in a natural (e.g., yellow) colour. That is the colour of the fibre materials used in the Millenia Light® fabric and those fibres cannot be dyed.

If the CA had not required the 93% Meta-Aramid, TenCate would have been able to develop a new product of similar performance as their Millenia Light® product, that can be dyed in the required colours. However, the combination of the required colourfastness and the required composition of 93% Meta-Aramid, did lead to another innovation.

Pre-dyed fibres makes the Nomex fabric extremely expensive. An inexpensive Nomex fabric, which is dyed afterwards, does not reach the colourfastness value of 5. TenCate solved this problem, leading to a low cost fabric with a colourfastness of 5.

## CONCLUSION

The main conclusion that can be drawn from the applied theory in practice, is that standards are able to foster and support the development and diffusion of innovative solutions during public procurement, if and only if, the CA uses standards in an appropriate manner. In the case for example, the CA should not have required additional detailed technical specifications in their tender document.

These additional requirements limited the opportunities for innovation provided by the standards that were used. The case demonstrates that new products, like Millenia Light®, will be developed and/or diffused by the implementation of a single or a whole set of standards. By the supposed increase of range of potential fabric suppliers (Blind, 2008), the company TenCate was encouraged to provide a more innovative solution, like their Millenia Light® product, to be ahead of their competitors. The early involvement of potential suppliers and the communication of the selected standards in advance of the publication of the tender to the market could have helped the CA to benefit from the selected standards (Blind, 2008). The supplier could have made them aware of the limitation of the additional detailed technical specifications. In that situation, the CA should probably have avoided these additional detailed technical specifications.

In general, the appropriate use of standards can play an important role in procurement by:

- Increasing efficiency of the tendering process,
- Reducing the risk for both, the procurer and the tendering companies, usually attached to innovative solutions,
- Providing objective baseline criteria for cost-effectiveness in public procurement,
- And also helping to promote the development and diffusion of innovations through public procurement.

The STEPPIN project takes this up with a practical handbook for public procurers and policy makers. This handbook is one of the deliverables of the project and will be available in a concise paper version and in a web-based version (including toolsets). The handbook provides a practical approach for the use of standards in procurement activities. It will help to understand standards and it will give guidance how to find and use them. It will include the relevant legal aspects. It will be a practical instrument to be used in the day-to-day work of a public procurer.

## REFERENCES

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