# SPECIFICATION, EVALUATION AND VERIFICATION REALISING PUBLIC PROCUREMENT FOR INNOVATION

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## ABSTRACT

The non-arguable goal of public procurement is value for tax-payers money and a more effective and better public service. However, being a politically available instrument, public procurement may also be utilised to reach other societal or political goals. One such goal, which has raised an increased interest lately, not least due to the financial and subsequent economic crisis, is public procurement of innovation. The ambition is then increased growth, employment and export opportunities for business entrepreneurs, and a better society, by opening up the public procurement for innovations in entrepreneurial companies.

A general recommendation is to use functional or performance requirements, to avail the market actors to propose innovative solutions. However, there is a distinction between these two alternatives, and also an additional, higher level of specification, by defining the desired effects. The balance between setting criteria that on the one hand allows the tenderers to propose innovative solutions, and on the other hand is able to evaluate and verify, is very delicate. The higher level on the scale, e g towards effect definition, the more abstract the criteria to be evaluated. This makes it more difficult to correctly evaluate different proposals to each other, but also to ascertain compliance with the original demand. It also increases the risk exposure.

The level of criteria setting has to be decided with the risk exposure willingness, and the judged possibility of evaluation in mind. It is also a matter of the level of market and technological availability on the buyer's side, whereas sometimes it may be more advantageous to be very precise in specifying the demand, instead of leaving it to the market actors to propose solutions, which is often considered the main alternative. These aspects will be further analysed and scrutinised in this paper.

## INTRODUCTION

Public procurement, starting out as a means of acquiring what the contracting authorities of the public sector needs, not being subject to any other considerations, has undergone an evolution since the mid 1950's. At that time some of the current Member States of the European Union, as well as many other countries, used public procurement more or less as a protectionist means, having specific rules promoting purchasing from domestic suppliers. This has changed, as a result of the World Trade Organisation, WTO, agreements, in particular with the Government Procurement Agreement, GPA, being signed by many countries, having specific rules on opening up cross-border trade for public procurement.

On top of the GPA, in Europe specific rules on public procurement for Member States and associated states were implemented during the years 1989 to 1993[1], aiming at strengthening the "internal market". This, by means of enforcing cross-border trade, clarifying and developing the principles of the Treaty of the European Union, relevant to public procurement, namely the principles of non-discrimination, transparency, mutual recognition and proportionality. These principles are based on the free movement of goods and services.

The strengthening of the internal market is based on the political ambition to "to generate sustainable, long-term growth and create jobs, to foster the development of businesses capable of exploiting the opportunities generated by the single market and competitive in global markets, and to provide taxpayers and users of public services with best value for money"[2].

After 1993, when EC Directives were being implemented and applied in the increasing number of Member States, case law and application experience, together with an increased understanding by policy makers of the potential of public procurement to fulfil political objectives, lead to a discussion on the need for adjustments – simplification and modernisation – of the Directives. As a consequence thereof, the European Commission issued a Green Paper on public procurement in 1996[3].

Two of the issues of particular interest to be considered by the EC Directives were environmental criteria and social considerations, to be promoted in public procurement. In the revised EC Directives[4][5], from

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[1] Directives 89/665/EEC, 92/13/EEC, 92/50/EEC, 93/36/EEC, 93/37/EEC, 93/38/EEC

[2] GREEN PAPER PUBLIC PROCUREMENT IN THE EUROPEAN UNION: EXPLORING THE WAY FORWARD, Communication adopted by the Commission on 27th November 1996 on the proposal of Mr. MONTI

[3] Ibid.

[4] 2004/18/EC and 2004/17/EC

[5] In this paper the Directive 2004/17/EC is being left out, and not being referred to, because it concerns procurement in the utilities sectors, and have less restric-

2004, to be implemented by the Member States by January 2006, these two criteria were introduced in the Directives[6] as possible criteria to set.

Following this, further interest has risen on other considerations to be taken in public procurement. The logic behind this is that public procurement, being performed with tax-payers money, may be used for the best of the society, as a wider interpretation of value for money. Promoting innovation is one such example.

Promoting innovation with public procurement, or Public Procurement for Innovation, is not a radically new phenomena. It has previously been explored as Technology Procurement. However, there are some differences in these two concepts.

Whereas Technology Procurement has mostly been used to drive technological improvement, Public Procurement for Innovation, PPI, is wider in its scope. Firstly, it is not restricted only to technology, i.e. goods, apparatus, technological systems, buildings, etc., but also includes services, including presumptive replacement of buying products with buying services, or combinations thereof. Secondly, PPI opens up for more radical innovations than Technology Procurement, which traditionally has been resulting more in incremental innovations or sometimes aiming at diffusion of existing technology.

## METHODS

In the older, now replaced versions of the EC Directives on public procurement it was an obligation to refer to standards, according to an order of precedence, unless it was not possible to do so. In the new Directives, however, a parallel clause was introduced, allowing the contracting authority to formulate the technical specifications "in terms of performance or functional requirements"[7]. Other means, such as "variants", were also developed. However, in this paper, the performance or functional requirement specification will be explored.

The expressions "performance" and "functional" are mentioned in the Directives with "or" separating them. In everyday speech only "functional" seem to be predominant, implicitly including also "performance" requirements.

However, there is a difference in understanding and practical application of these expressions. In effect, and as expected, functional requirements describes which functions a specified object should have. This could be a description of, e.g. how the blades of a wind power station should work, how the turbine should transfer the energy, how the energy

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tive ruling. However, the methodology is relevant also for procurement under this Directive.

[6] E.g. in Article 26; "The conditions governing the performance of a contract may, in particular, concern social and environmental considerations."

[7] Article 23, 3(b)

should be converted to electricity, etc. This is on a higher, less detailed level than if you describe the shape of the blades, the construction of the turbine, and its parts, etc., which is referred to as "detailed" technical requirements.

Performance requirements, however, will describe which performance the wind power station should fulfil, e.g. how much energy it should produce, under which circumstances.

Here we have three levels of requirement specification; detailed, functional or performance based. The further towards performance requirements specifications are constructed, the more freedom is left to the supplier to propose solutions, whereas, with very detailed requirements specified, there is less room for supplier innovations. Functional requirements are in between, leaving more space for innovations, or at least inventions or improvements of existing technology.

This could be described in escalating levels, the "lowest" and first, with respect to PPI, being the use of detailed specifications of requirements. The next, "more advanced" level would then be functional requirements, and consequently the third level would constitute the use of performance criteria, to describe the subject matter of procurement.

In my studies, and discussions with public procurement colleagues, practitioners throughout Europe, on "functional specification", as said, a distinction between "functional" and "performance" requirement specification is rarely done in practice. One reason may be that in practice there is a thin line between the two levels and that it is considered of pure academic interest.

This may be true, but if a systemic approach is being used, it may diminish the risk of confusion and misunderstanding on the supplier side. If the purchaser is clear and consequent on methodology and criteria it will be more obvious what is the goal of the purchase.

Digging deeper into this, I have come to the conclusion that even making use of the "highest" level, i.e. setting performance requirements, does not stimulate enough the innovativeness of the market. My recommendation would instead be to go even further, in specifying the desired *effects* the contracting authority wants to achieve, i.e. "effect specification" of requirements.

To be able to do this properly, you need to go deeper into the user's situation – not leaving out other stakeholders, of course. One method of doing this is by a so called Problem Detection Study, PDS, as described in *what customers want* (Ulwick, 2005). The idea is to "go behind the curtain" and accentuate problems the users experience with the product, service or system, which the user may not even be aware of until being asked the trigging questions. This, instead of just asking them what they would want, which has proven ineffective, because they often aren't aware of the possibilities, and are often too much locked in with existing solutions.

The outcome of a PDS and analysis will form a good basis for setting up Key Performance Indicators, KPI's, which can become the natural input to an "effect specification" for procurement. Giving the market KPI's to consider will open up their minds to propose innovative solutions. In the example of a wind power station, not even a wind power station would be mentioned. Instead, the purpose of the energy need may be described. The market may well propose a wind power station solution, but may just as well resolve the problem in other ways, e.g. by means of energy needs reduction, alternative problem resolutions, etc. One criterion could be environmental considerations, for example a KPI for green energy, even giving bonus points in the evaluation for excess achievements.

A result from the above, a fourth level could be introduced, as a means of setting requirements, see fig 1.

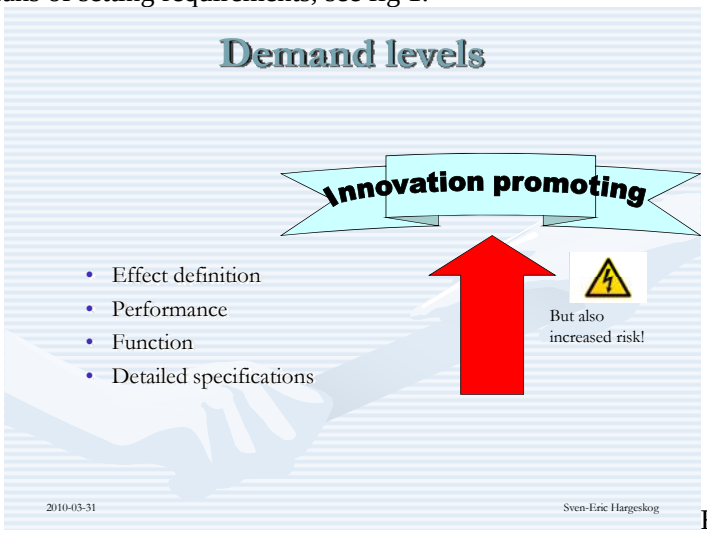


Fig.1

Figure 1 illustrates that promoting innovation will be increased when requirements are specified at a higher level, the higher the better. However, this is a conditional truth. It is very dependent on other prerequisites, such as the risk averseness of the buyer. It is also depending on the maturity of the market, and whether or not there are, or can be created, incentives for the market to allocate resources to develop and propose solutions meeting the buyer's requirements.

Another important condition is the level of competence on the buyer side, as regards the subject for procurement. The more knowledge vested by the buyer, and being on the forefront by the buyer's experts, the more likely the buyer has enough competence to drive the market development in a desired and fruitful direction. This could well motivate the use of a lower, perhaps even the lowest, level of specification. The conclusion is

therefore that a thorough analysis should be performed before deciding on which strategic level the specification requirements should be defined at.

## RESULTS

Four main levels of how to specify requirements have now been defined, see Fig. 1. A guiding principle is that the more space and freedom given to the market to propose solutions, the more innovative ideas may be presented in tenders. By choosing a higher level of specifying requirements, more freedom is given to the market to make use of their knowledge. However, if the buyer has leading edge knowledge, a lower level on the scale could be used to steer the market towards a desired development.

The criteria specified will be used, not only in the evaluation to choose the best offer, but also for verification in the contract stage, as well as follow up on functions, performance and/or effects on the long run. Instead of detailed requirements, key elements of desires are defined. This could be referred to as Key Performance Indicators, which is an established expression. More correctly would be to exchange the word “performance” with “functional” or “effect” respectively, when applied on these respective levels. To simplify, in this paper the expression Key Performance Indicators, KPI, will be used for all levels.

The higher up on the scale for specification of requirements, the fewer criteria will normally be defined. Defining KPI’s on the effect level would most likely result in rather few criteria, since the desired result is described in which effects to be achieved on an overarching level. For each effect, it is likely that some performance and/or functional requirements are defined, which indicates that it will normally require a larger number of criteria on these levels, whereas it is almost self explanatory that specifying on a detailed level will require a large number of criteria to be defined.

## DISCUSSION

There are some considerations to be regarded before deciding strategy for specification level of requirements, and in determining the KPI’s.

The higher on the scale towards effect definition of requirements, the more “vague” or “unclear” they may seem to be. However, it is very important to be very clear about which effects are desired, and define few but significant criteria, describing these effects. They should be “technology neutral”, which means that they should be valid independently of the various solutions for achieving the effects described. Unless this is ascertained, it may prove difficult to compare solutions with totally diverging concepts, e.g. one proposal is based on service provision, another on supplying an apparatus, a third a methodology, and a fourth a system. Since this requires thorough preparation and involvement of experts and

stakeholders, enough resources may not be allocated, leading to a risk for uncertainty and lack of transparency in evaluating the proposals.

Another thing to be considered is if there is an asymmetry in competence between the market and the buyer. If the buyer has extensive and detailed knowledge on the subject, it may be considered if this knowledge should be used to influence the market development, in particular if the buyer has a size or buying power that may be attractive enough to influence the market.

Not less important is whether or not there are incentives on the market to appreciate the initiative to invite for innovative proposals, which may render non-negligible costs in preparation of tenders. It should also be considered if such incentives could be created or reinforced by the buyer, e.g. by means of collaboration with other buyers, commitments, etc. Should there be a lack of incentives, the buyer could even consider a pre-commercial public procurement procedure, whereby the buyer buys research and development services, in order to drive the market to a maturity level, creating conditions for a subsequent "commercial" public procurement procedure.

The increased risk exposure, not only due to the difficulty in evaluating alternative proposals of a great variety, but also as a consequence of the probability of receiving proposals that have never been tested in a live application – which is an obvious outcome, being the underlying purpose of PPI – must be analysed and managed beforehand. It is not risk reduction, but preparedness and reduction of the consequences of risk possibly occurring. An example of risk management is to allocate the risks to the party best in control of them, and best in position to effectively handle them.

## CONCLUSIONS

If the ambition is to promote innovations with public procurement, it is essential to allow the market actors freedom to make use of its innovative powers, and to ascertain sufficient incentives for them to make efforts to exert themselves in proposing creative solutions. At the same time risks must be allocated to reduce the consequences as much as possible, and measures taken to handle risk occurrences in the best way should they be realised.

If the judgement is that the market innovativeness has a potential to contribute to useful and effective solutions, defining the requirements so that they make this possible. Opening up for such innovative proposals may be escalated from detailed technical specifications, providing the buyer has a strong detailed knowledge of the subject to be purchased, via functional specification, performance specification and effect specification, all depending on the preparedness to take risks, knowledge of the market, ability to specify ultimate operational goals, and transfer them to KPI's. It is also dependent on available resources, in time and risk capital.

Such KPI's need to be designed in a way so that they are able to be used in evaluation of tenders, to choose the most advantageous offer, but also to follow up and validate the fulfilment of the contract.

## REFERENCES

Ulwick, A. W. (2005). *What customers want.* The McGraw Hill Companies.