CAIUS - Cascading Innovation
Upstream the Supply Chain through Procurement Processes in Energy, Healthcare and Water Services in Finland

Hlekiwe Kachali and Isabell Storsjö

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Keywords: Innovation, public procurement, civil preparedness, supply chains, energy, healthcare, water services

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Dr. Hlekiwe Kachali and M.Sc. Isabell Storsjö
Hanken School of Economics
Department of Marketing, HUMLOG Institute
P.O.Box 479, 00101 Helsinki, Finland

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SUMMARY

Generally, policies dealing with public procurement, innovation or preparedness are worked on and crafted separately. However, looking ahead to and planning for potential crises Finland might face necessitates the consideration of procuring innovative solutions to challenging problems. Nevertheless, for public authorities, investment in preparedness is a balance between serving the current needs of the community, reducing disaster risk, and also looking ahead to what the future needs might be and being ready for those needs. Public authorities must deal with uncertainty and simultaneously take a long-term view, while using public money efficiently and effectively.

In Finland, the National Emergency Supply Agency (NESA) collaborates with public and private organisations to facilitate preparedness activities. This type of association is a step to civil preparedness through policy intervention, such as through the use of innovation oriented public procurement. Preparedness is however everybody’s business; both public and private enterprise. The private sector can take on a more expansive role as part of civil preparedness through their own investments and in partnership with public authorities.

This report is intended for those with an interest in the different aspects of public procurement, innovation, preparedness, supply chains and public-private partnerships, as well as scholars working in these areas. The challenges listed herein can be used to inform those who work with the public procurement process while the recommendations are useful for those who look to develop this space.

Our investigation sought to bridge the divide between policy and existing practice, as well as how it can be improved. We brought together information from various entities, mainly from Finland, with an interest in this larger subject area. Contributions were made by subject matter experts, industry representatives, public administration officers, practitioners and scholars. We distilled the information gathered and brought to light the challenges and hindrances, and then looked ahead by offering recommendations.

Key findings

Taking into account the size of the public purse, competing interests for public funds and revised EU regulations on public procurement, including a stronger emphasis on innovation oriented procurement, the project investigated:

- how public procurement processes can be developed to align with innovation as a performance objective;
  - the parameters within which public procurement processes should function to comply with public procurement legislation while fostering innovation in the supply chain;
  - the joint cross-sectoral parameters of innovation in public procurement; and
- how procurement processes lead to cascading innovation (upstream, between suppliers, and between industries)

As with other areas, innovation oriented public procurement, both as a policy goal and as a means to achieving other policy objectives such as preparedness, has had its successes and its challenges. To start, it is important to understand the
frameworks/guidelines, e.g. legislation, within which public procurement processes exist and are operationalised if they are to promote innovation. We found that public authorities and organisations are compelled to procure for innovation mainly as a result of policy change on the EU, national or local level. Furthermore, procuring for innovation is not strategic; procurers do actively search for solutions and engage with industry, but this is mostly outside the procurement procedure and would benefit innovation oriented public procurement if included as part of formal procedures. Of concern to public procurers is risk management; public policy needs to devote more efforts to addressing risks associated with innovation oriented public procurement.

Second, other policy goals – or evaluation factors – such as sustainability and preparedness are included as an afterthought in the process instead of as a main component when designing what and how to buy. Preparedness is in many cases not at the forefront when public procurement occurs. In general, preparedness policy is based on previous events and pre-existing structures. Innovation and preparedness policies are dealt with separately, but they need to be seen as part of the wider landscape. The communities of practice involved in public procurement, preparedness and innovation are not large. While this poses its own challenges, it also enables “know-who” as well as room for initiation and development of inter-personal and inter-organisational relationships.

Moreover, we identified that there exist factors common to the different sectors involved in public procurement. Public procurement is seen as complex and centred on cost, the process more focused on the how versus the what. Innovation oriented public procurement was laid out as a high-level political goal, and there are support programmes, but incentives may be necessary at the procurer’s level. In addition, innovation oriented public procurement involves multiple stakeholders and interests - this calls for a “whole of government” approach along with alignment among different actors, regulations and policies in order to balance the multiple goals of public procurement.

As to the question regarding how procurement processes can result in cascading innovation, public procurement regulations and processes can be the platform providing a baseline for actors involved in the process. Also, effective operationalisation of innovation oriented public procurement includes the ability to demonstrate innovative solutions, however there are few internal references in Finland showing such solutions. Finally, skills building, competence development, information management and dialogue are some important components that should be developed in the area of innovation oriented public procurement.
**Keywords:** Innovation, public procurement, civil preparedness, supply chains, energy, healthcare, water services

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CONTENTS

1 Introduction ..................................................................................................... 1
  1.1 The CAIUS project .............................................................................................. 1
  1.2 Public procurement for innovation, public procurement of innovation, innovative public procurement? .............................................................. 2
  1.3 Public procurement legislation .......................................................................... 3
  1.4 The timeliness and importance of this work ..................................................... 4
2 Method............................................................................................................. 4
3 The Case Sectors .............................................................................................. 5
  3.1 Energy ................................................................................................................. 5
  3.2 Healthcare ........................................................................................................... 7
  3.3 Water Services ................................................................................................... 8
  3.4 Sectoral similarities ........................................................................................... 9
  3.5 Sectoral dissimilarities ...................................................................................... 10
4 What is NESA for? ......................................................................................... 10
5 Innovation Oriented Public procurement in finland AND ITS Challenges .. 11
  5.1 The Finnish market........................................................................................... 11
  5.2 Policy and regulation; whole of government .................................................... 12
  5.3 Innovation versus existing infrastructure and practices .................................. 13
  5.4 Risk perception ................................................................................................. 13
  5.5 Leadership ........................................................................................................ 14
  5.6 Knowledge ......................................................................................................... 14
  5.7 Supply considerations ....................................................................................... 15
  5.8 Preparedness in Finland ................................................................................... 15
6 Forecasting; the future of preparedness ....................................................... 16
  6.1 Tailor to different scenarios .............................................................................. 16
    6.1.1 Extended supply networks ........................................................................ 16
    6.1.2 Reliance on electrical energy and other technology .................................. 16
7 Innovation in preparedness .......................................................................... 17
8 Recommendations ........................................................................................... 17
  8.1 Recommendation 1: The frameworks exist; no need to reinvent the wheel....18
  8.2 Recommendation 2: PPI as strategy, PPI as business...................................... 18
  8.3 Recommendation 3: Risk management ............................................................. 18
  8.4 Recommendation 4: Data and information management ................................ 18
  8.5 Recommendation 5: Responsibility and accountability .................................. 19
  8.6 Recommendation 6: Capacity and participation ............................................. 19
  8.7 Recommendation 7: Adopting new language ................................................ 19
  8.8 Recommendation 8: Managing expectations ................................................ 19
  8.9 Recommendation 9: Transparency and clarity ............................................. 20
9 Cascading innovation through public procurement ........................................ 20
10 What next?...................................................................................................... 21
11 References...................................................................................................... 22
APPENDIX 1: INTERVIEW GUIDE ..................................................................... 23
APPENDIX 2: report from the CAIUS public seminar held at HANKEN on 17th November 2016 ................................................................. 24
FIGURES

Figure 1  Energy sector supply chain in Finland ............................................................. 6
Figure 2  Healthcare sector supply chain in Finland...................................................... 8
Figure 3  Water services sector supply chain in Finland............................................... 9
1 INTRODUCTION

Public procurement makes use of taxpayer money to purchase goods, services and works for the public good and for the needs of the citizens, including healthcare, continuous and safe energy and water supply as well as arrangements for crisis and disaster preparedness. Even as public budgets have come under pressure, there has been increased scrutiny on public procurement as an instrument not only for the provision of goods and services but also in addressing other policy goals such as the stimulation of innovation (Tekes, 2016).

The European Commission\(^1\) (EC) asserts that public procurement for innovation can be used to structure adoption of innovative solutions. New public procurement directives (2014/24/EU, 2014/25/EU) aim to “increase the efficiency of public spending, facilitating……participation of small and medium-sized enterprises in public procurement, and to enable procurers to make better use of public procurement in support of common societal goals”.\(^2\) The directives introduce several means to this end, e.g. innovation partnerships between procurers and suppliers.

Innovation is herein considered “an idea, practice or object […] perceived as new by an individual or other unit of adoption” (Rogers, 1995) while public procurement for innovation involves “buying goods and services in a way that stimulates the supply chain to invest in developing better and more innovative solutions to meet the unmet needs of an organisation” (Hérnandez Garvayo, 2013).

1.1 The CAIUS project

CAIUS was a 2 year research project carried out by the Humanitarian Logistics and Supply Chain Research Institute at HANKEN School of Economics, with Finland’s National Emergency Supply Agency (NESA) as case organisation. NESA is a specialised agency that acts as a nerve centre for Finland’s emergency supply network and collaborates with representatives from both the public and private sector.

The primary objective of the project was to develop an understanding of innovation through procurement processes, with a particular focus on public procurement. The project’s focus was on innovation as a positive performance objective, extending the notion of innovation to the supply chain and to the cascading, or domino effects, of innovation throughout the supply chain. As a research project carried out by the HUMLOG Institute and in the context of civil preparedness in Finland, procuring for disaster preparedness as well as for other events naturally had a role in the study. When disasters happen, it is possible for communities to be crippled and for recovery to be long and protracted. It has been demonstrated that prior investment in civil preparedness and mitigation activities can be more lucrative than in paying for recovery efforts post-disaster.

In the research project, we investigate the actors involved, the processes, the aids, the challenges, the roles and responsibilities as well as the effects on civil preparedness. The specific research questions were:

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1) How can the public procurement processes be developed in order to be aligned with the performance objective of innovation?

1a) what are the parameters within which public procurement processes should function to comply with public procurement legislation while fostering cascading innovation in the supply chain?

1b) what are the joint cross-sectoral parameters of innovation in public procurement?

2) How do procurement processes lead to cascading innovation (upstream, between suppliers, and between industries)?

This report presents the overall findings from the study, on innovation oriented public procurement in Finland, within the contexts and constraints of regulations, processes and a desire to fulfill societal needs. The authors had a practitioner audience in mind when writing it up, and the report is therefore descriptive and normative, focusing on the sectors, the challenges in the current system and recommendations. Even as the report contains findings based on investigations in specific sectors and with Finnish actors, many of the lessons gleaned are applicable in other sectors and countries.

This report is only one of the outputs from the CAIUS project. Other output includes a public seminar to discuss the report’s findings and next steps; teaching modules based on project findings; and journal papers and other publications. As indicated above, an earlier version of this report was distributed to participants in the research project’s concluding seminar, which was held at Hanken on 17th of November 2016. The challenges and recommendations described in the report were presented to the participants, and further discussed in two breakout sessions, one focused on healthcare and the other focused on energy and water services. A summary from the seminar with its discussions can be found in Appendix B.

1.2 **Public procurement for innovation, public procurement of innovation, innovative public procurement?**

As outlined by Atkinson and Sapat (2012, p. 363) procurement can be a tool, i.e. a mechanism for acquiring products, and a process with “outcomes and impacts that are policy-related ends in themselves”. Borrás and Edquist (2013) add that procurement can be used as a policy instrument while Georghiou et al., (2014) put forward that policy ambitions regarding use of public procurement have taken different forms; from exclusively targeting public procurement to spur innovation, to public procurement situated within policies with a broader remit.

In both the academic and non-academic literature, three descriptions of innovation and public procurement appear to be used more frequently; public procurement for innovation, public procurement of innovation and innovative public procurement. We’ll look at each one briefly in turn.

Public procurement for innovation is described as that which is deliberately aimed at achieving, promoting or enabling innovation that has effects outside of the purpose of the discrete purchase. As well, it can be employed to mitigate grand societal challenges such as global warming, aging societies, pandemics or security (Borrás & Edquist, 2013; Edquist & Zabala-Iturriagagoitia, 2012).
Public procurement of innovation, on the other hand, is the act of procuring innovation, and this applies to ordering something that needs to be innovated before demand can be met (Borrás & Edquist, 2013), or procuring goods, services or works considered to be innovations by the buying organisation.

Innovative public procurement refers to the way in which procurement is carried out. This means that there is a possibility to evolve the procurement activity within legal boundaries, or by introducing innovative procedures in the framework itself.

It is important to note that no one term was defined for the purposes of this study. Informants were asked about innovation and public procurement as well as preparedness and sustainability. Contrasting the interviewee responses against the definitions above, it is clear that responses referred to all three terms singly or in combination. As such, unless otherwise stated, the findings herein relate to public procurement for innovation, public procurement of innovation as well as innovative public procurement. Public procurement for innovation and public procurement of innovation will be used interchangeably and PPI refers to both. We sometimes use the umbrella term innovation oriented public procurement.

### 1.3 Public procurement legislation

The EU’s classic directive (2004/18/EC) on public procurement, and sector directive (2004/17/EC) on public procurement in the utilities (water, energy, transport and postal services) sectors, have been incorporated in the Finnish legislation, specifically the Act on Public Contracts (348/2007) and Act on public contracts by contracting authorities in the water, energy, transport and postal services sectors (349/2007). The directives from 2004 were repealed in 2014, when the Parliament and the Council of the European Union gave two new directives on public procurement (2014/24/EU) and procurement by entities operating in the water, energy, transport and postal services sectors (2014/25/EU). The legislative package also included a new directive on the award of concession contracts (2014/23/EU), as well as a regulation governing access for non-EU markets to the EU’s public procurement market that is still under negotiation.

The new directives (European Commission, 2016) are aimed at simplifying and making more efficient the public procurement process, and give special attention to small- to medium-sized enterprises, total life cycle costs and competitive dialogue. They introduce the new procedure innovation partnerships and enable cross-border joint procurement. The European Parliament asserts that the revised regulations are to encourage competition, while ensuring value for money in procured goods, services and works through innovation and consideration of environmental and social aspects.

The new directives were to be incorporated in national legislation of the Member states by 18th of April 2016. In Finland, the approval of the new national public procurement acts was delayed until December 2016 – so when the study was carried out, the acts from 2007 still applied (although some procurers had received guidelines on how to consider the new EU directives in their work starting from April 2016). The new acts (1397/2016 and 1398/2017) came into force on January 1, 2017.

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1.4 The timeliness and importance of this work

Procurers have to balance anticipating future trends while at the same time preparing to serve society’s current needs, with currently available resources. Innovation oriented public procurement, while being a policy goal in itself, can also be used as a way to achieve other policy objectives.

Public interest may be more immediately concerned with health, economic and social impacts while for civil preparedness, prevention, mitigation and continuation of societal functions are key. Over time, disaster risk awareness has improved - research shows that investment in preparedness activities can prevent or mitigate effects of crisis or disaster more effectively than efforts put into post-disaster operations. Finland’s National Emergency Supply Agency, NESA, has the mandate to design and plan for security of supply. In the Finnish model, it is recognised that civil preparedness should involve both public and private enterprise. This has led to collaboration between public authorities and private organisations. This type of collaboration brings together the capacity of public authorities representing the people, with the specialist capabilities of the private sector, which has, sometimes innovative, resources applicable in disaster management.

In looking at public procurement for innovation in the Finnish context, we sought to understand what challenges relate to PPI as a policy goal and as an enabler for other policy objectives. Furthermore, much work has been done on innovation, on public procurement as a policy tool, on preparedness, and on innovation in supply networks. However, little exists on the intersection of these areas.

This report presents public procurement and innovation within the contexts and constraints of regulations, processes and a desire to fulfil societal needs. Additionally, in light of the EU directives on the use of public procurement to invigorate innovation, another aspect we examined is how innovation can be cascaded in supply networks via public procurement. Cascading innovation in a supply network ensures that the benefits of innovation are diffused and possibly adopted widely.

The report is laid out as follows; we start by introducing the case sectors and briefly outline some of the similarities and dissimilarities. This is followed by a brief discussion on NESA’s position and some of the challenges faced in public procurement and innovation, after which we take a look at public procurement and innovation through the preparedness lens. We end with recommendations on surmounting the listed challenges, discuss cascading innovation in supply networks, as well as the next steps in this work.

2 METHOD

Data was collected through interviews, searches in legal texts and documents, and from organisations’ websites. Interviewees were included in the study through snowball sampling. The sectors were first selected together with the National Emergency Supply Agency, who also suggested the first informants. 84 interviews were done with 92 informants, in English, Finnish or Swedish (or a combination of two of those languages), between May 2015 and July 2016. In the end of each interview, the interviewees were asked to suggest other persons who could contribute to the study, and the next interviewees were then contacted based on the suggestions. Not all individuals contacted wanted to take part in the study or even respond to the request. The snowballing stopped when the researchers concluded that the study was saturated.
In the interviews, a semi-structured interview guide was used (see Appendix A) to guide the researchers, but questions were also removed or added depending on the flow of the interview and the profiles of the informants. Some interviews were carried out with two informants, and/or two researchers. The interviews were recorded with the consent of the informants, and transcribed. The transcriptions were sent back to the informants, and in some cases the transcripts were returned with comments or requests to have sections removed. The comments and requests were noted down in the final versions of the transcripts.

Legal texts were chosen based on the direct relation to the topic, e.g. public procurement, and informants’ mentioning of the laws or legal areas during the interviews. The legal texts were mainly used to support the analysis and descriptions of the research context.

The interviews were listened to, and transcripts read several times by the researchers. The software NVivo was used as a tool to organize the data and support the analysis. In addition, several meetings were held among the researchers and together with NESA to discuss the findings as they evolved.

3  THE CASE SECTORS

In Finland, public authority accounts make up a large part of overall procurement in health (Nordic Council of Ministers, 2010), energy and water services, which are sectors vital for citizens' wellbeing. The sectors are dependent on each other to varying extents. They also affect other sectors, e.g. agriculture.

In order to understand public procurement for innovation in the sectors in this study, it is important to understand some sectoral aspects in the case sectors. In all three sectors, some of these aspects are comparable, others not; however, they influence the supply network and by extension innovation oriented public procurement.

3.1  Energy

Finland’s electricity and gas markets follow the EU’s directive on liberalisation and deregulation. Grid integration has occurred with Finland belonging to ENTSO-E, with cross-border transmission networks spanning Europe. Looking ahead, PPI in this sector calls for harmonisation of energy security with sustainability and affordability. The targets for sustainability have been set at both European and national levels, what is needed now is how to respond to and plan for reaching these targets while preparing for uninterrupted supply. Figure 1 illustrates the Finnish energy sector supply chain.

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4 https://www.entsoe.eu/news-events/former-associations/nordel/Pages/default.aspx
The study of the energy sector included both heat and power supply to households, industry, and public and private organisations. Power supply must further be divided into electricity and transmission of electricity, since the production and transmission is carried out by different companies, and paid for separately, although they are very much connected to each other. Electricity comes from national and international electricity producers, transmitted through international, national and local grids. Heat is produced either at the user end through different methods (of which burning of fuel is one) or centrally by heat producers or combined heat and power producers.
Among the organisations included in this study, public procurement is carried out by the electricity and heat producers, and grid operators (electricity and heat is also procured by public organisations, but the procurement by the end-users had a minor role in the study). These actors procure goods such as spare parts and fuels, works such as construction of new plants, and services such as maintenance and consultancy services through public procurement procedures. R&D procurement were mentioned by the informants, but is often carried out using a lighter procurement procedure than those set out in the public procurement legislation.

3.2 Healthcare

Residents in Finland have the right to universal healthcare. The healthcare sector involves numerous actors, both public and private. The provision of healthcare is decentralized and is mainly public with three tier financing most of which is raised via municipal taxes. For healthcare, the Ministry of Social Affairs and Health\(^5\) is the highest decision maker, the administering of primary healthcare is at the local government level and hospital districts oversee specialised services. Figure 2 shows the healthcare sector supply chain in Finland. Health, or welfare, promotion is one of focal points of Finnish healthcare with disease prevention being an example of this. Lastly, Finland has companies engaged in medical research and health technology.

\(^5\) http://stm.fi/en/frontpage
Figure 2  Healthcare sector supply chain in Finland

The public sector care providing units exist on both local (i.e. communal health care centres) and regional level (i.e. university and central hospitals). Some units have a national specialization for certain treatments. These care providing units are served by separate units (often part of the same care consortium, or owned by municipalities) such as hospital pharmacies, warehouses and laboratories. Public procurement is carried out by all these units, although the goods (i.e. devices and pharmaceuticals) procurement has in most cases been centralized to the logistics and pharmaceutical units. The supply side is for pharmaceuticals dominated by international companies, who then uses mainly two distributors in Finland, while the supply of medical devices and other material is more diverse with big and small suppliers and distributors both nationally and internationally.

3.3 Water Services

In Finland, provision of water services is primarily by public water and sewerage utilities owned by the municipalities (see figure 3). In the main, these municipal water utilities are coordinated as quasi-independent municipal enterprises within the municipality. A large part of Finland’s population, at least 90%\(^6\), are served by centralised water supply

\(^6\) http://www.vesiyhdistys.fi/english.html
while 80% are connected to public sewerage systems linked to wastewater treatment plants. The water services sector is affected by both changeable and extreme weather. Additionally, Finland has a water safety plan (WSP) outlined to guarantee safe drinking water at all times.

![Figure 3 Water services sector supply chain in Finland](image)

The water treatment plants serve end-users locally or regionally with fresh water and/or treatment of waste water. The treatment facilities procure works such as construction, services such as maintenance and consultancy, and goods including pipes, pumps and chemicals to serve their purposes.

### 3.4 Sectoral similarities

In all three case sectors, public authorities are seen as having dual roles; regulator and procurer. The sectors procure and provide goods/services for public benefit at the same time being bound by regulation, which provides common guidelines and ensures transparency. While innovations exist, suppliers in the case sectors show risk aversion in proposing innovative solutions in public tenders primarily because of service levels they should meet under current contracts and the associated penalties should solutions not meet these service levels. On the procurer side, several informants articulated that the possibility of a bidder suing them for wrongful supplier selection caused them to be extremely careful in tender specifications and requirements, which may sometimes lead to not considering innovative solutions.

Case sector informants described innovation being affected by functional and organisational silos, both within and outside their organisations. It appears that in many organisations subject matter experts are not necessarily procurers and do not always
exchange information on the best possible solution or how to procure such a solution. Informants also pointed to the time and effort needed to prepare requirements as per the procedures, and in case there is a need to buy larger quantities, they feel it is sometimes easier to start with what they already have. For instance, several procurers mentioned that when a contract runs out they start by looking at the old contract and their current assortment.

3.5 Sectoral dissimilarities

There is a trend in healthcare and water services to create larger units, e.g. closing down healthcare units and moving away from households being responsible for their water supply. In energy, the informants talked about an opposite future trend for the longer-term, a need to move towards small-scale production.

Both healthcare and water services are not as deregulated as energy. Furthermore, compared to energy and water services, an important part of the healthcare sector supply chain for supplies is outside Finland while the actual healthcare service is in-country. For energy and especially water services, production capacity is relatively local. In fact, the energy sector exports some of its output while healthcare does not. Additionally, healthcare and energy suppliers are still obliged to have several months’ worth of emergency stock which has a limited shelf life.

Furthermore, end product specifications for pharmaceuticals and medical devices can be very complex whereas for energy and water services the product delivered to the end-user, electrical energy or water is the same regardless of mode of delivery. In healthcare, informants emphasised that innovations need to be rigorously tested before they are introduced in the system and long development lead times also influence the innovation of new products.

4 WHAT IS NESA FOR?

The Finnish government characterises security of supply as ensuring that society functions under all circumstances. Finland’s National Emergency Supply Agency (NESA) is mandated to plan for supply reliability and considers energy, healthcare and water services as critical sectors which must function in crisis both for operational continuity and because they are crucial for the wellbeing of Finnish society. NESA further recognises private enterprise as important partners since they administer a considerable percentage of infrastructure, services and goods. Therefore, a cornerstone of secure supply is public and private sector collaboration with private organisations participating in disaster preparedness activities through initiatives within the National Emergency Supply Organisation’s (NESO) sectors and pools. Collaboration between public and private organisations is a key ingredient in preparedness; successful public procurement of innovation is one form of collaboration keeping in mind that both procurers and suppliers need to balance their immediate priorities against their long-term perspectives.

It is important to recognise that NESA can act as a central information and data depository as well as be the spoke in what should be a communication wheel. This is necessary, but it may not be sufficient. From analysis of responses from interviewees,

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7 See www.nesa.fi
8 See http://www.nesa.fi/security-of-supply/public-private-partnership/
questions arise; can NESA also take on the role of an agitator or stimulant or do they exist solely for support purposes? Additionally, in looking at the supply network and the possibility to use innovative solutions in preparedness, at which points in the supply network would NESA be most effective in affecting procuring innovation for preparedness?

5 INNOVATION ORIENTED PUBLIC PROCUREMENT IN FINLAND AND ITS CHALLENGES

It was noted that there are several positive aspects in the intersecting areas of public procurement, innovation and to a lesser extent civil preparedness. The existence of processes, procedures and regulations acts as a baseline standard for the actors engaged in public procurement activities. Regulations and procedures are seen as a way of ensuring a fair and efficient process.

Furthermore, the public procurement process allows for the more effective use of public resources which can also result in improved quality of provision of public services. Another advantage is that the process allows for choice between multiple suppliers while also enabling cooperation and collaboration between public and private actors. This means that organisations with specialist knowledge are able to provide goods, services and works for public benefit.

As with all things, there are challenges to effectively operationalising innovation oriented public procurement. These challenges are listed in the sections that follow and can be seen as aspects that should be given additional consideration during the process and as part of the bigger picture, and that can be further enhanced.

5.1 The Finnish market

Governments and public authorities in Europe have had to work with budget cuts and constraints. Finland is no exception; the size of Finland and of the Finnish economy influence the number and presence of organisations in Finland, the size of these organisations and how much they invest in innovation.

Challenge 1 Number of actors

Procurers pointed to the number of organisations in Finland for certain products and services being so small that it is comparable to having a monopoly, leaving procurers with little choice on where to turn in looking for a greater range of possible solutions. On the other hand, both procurers and suppliers acknowledged that size and resource limitations could be used to drive the formulation of innovative solutions, especially for innovative solutions that are multi-purpose and increase value for money.

Challenge 2 Finland’s geographical position

Finland’s geographical placement makes it reliant on mainly maritime and aviation supply networks. Moreover, similar to other countries, Finland makes up a part of and is dependent on global supply networks. This makes Finland vulnerable to volatility in global supply, thereby making security of supply a critical issue.
Challenge 3 Innovations from SMEs

Small- to medium-sized enterprises (SMEs) were not the focus of this study. However, it emerged from the interviews that SMEs can be especially prone to how public procurement for innovation is structured and carried out. Interviewees pointed out that this was likely due to SME size and resource limitations. Involving SMEs is also part of the new EU directives. In contrast however, some informants communicated that SME size can be an advantage as it makes them nimbler than larger organisations.

5.2 Policy and regulation; whole of government

The creation as well as use of innovation policy is affected by governance at different levels; local, regional, national and international. In Finland for example, NESA, TEKES, Motiva, Fimea as well as various government departments and ministries are involved with different aspects of innovation and public procurement. Informants described various measures that do not complement each other and yet crises and disasters know no policy or regulatory boundaries but instead require collaboration.

Challenge 4 Fragmented but overlapping policies and regulation

Procurement and innovation policies are quite specific to the issues they are aimed at, however their use is affected by other regulations. For instance, regulation on how government funds can be spent on innovation versus government funds not being spent on R&D for private enterprise; or requirement on safety stock of pharmaceuticals and the standards in building code versus the freedom to put requirements in procurement in an innovative way.

Challenge 5 Perceptions about public procurement regulation and practice

The open and restricted procedures are most commonly used by interviewees. The interviewees told two different stories about public procurement regulation, the first being that the regulation is too complicated and rigid, making it difficult to include innovation in procurement, while the second account was that the regulation does not limit procurers in being innovative.

Many procurers seem to rely on established procurement practice, which includes existing categorisations of products to be procured as well as the use of spreadsheets and forms. Procurement might therefore be focused on established practices, instead of looking ahead and procuring for a desired outcome. Also use of standard requirements such as certifications, when not necessary, was brought up as a problem by interviewees other than procurers.

Informants from all sectors reported that public procurement legislation provides guidance; however, they perceived it as sometimes being rigorous, leaving little room for adjustment after the process is set in motion. Procurers and suppliers alike noted that this inflexibility results in minimal risk taking by procurers who then default to previously tried solutions as opposed to unproven innovative alternatives. Importantly however, it can be said that Finland does have the institutional, policy and infrastructural frameworks to operationalise public procurement of innovation.
5.3 Innovation versus existing infrastructure and practices

In all three case sectors, it is evident that there has been substantial investment in infrastructure, e.g. power plants, dams and hospitals.

Challenge 6 Fitting innovations within existing structures

The life-time and desired return on investment can have an impact on the willingness to change to new technologies or solutions; this applies to not only energy production and water purification plants but also to the medical equipment, e.g. procurers consider whether innovative solutions will fit into existing walls in a hospital, or if they can be integrated with existing systems and ways of working.

Challenge 7 Learning curve

The use of new solutions oftentimes requires end-users to learn how to work with them. This takes time away from other tasks. Additionally, the procurer may also have to deal with acceptance issues among end-users, both internally and externally. All of this may discourage purchase or proper use of new solutions.

5.4 Risk perception

Procuring something that is new to and untried by an organisation, or procuring something that does not yet exist or by using a different procedure, is not without risk. The literature on public procurement illustrates that this can be a contributing factor to procurer risk aversion (Georghiou et al., 2014).

Challenge 8 The procured outcome does not meet needs or expectations

Procurers pointed to leaning towards solutions that have been tried and tested and have been seen to work previously. With procurers being indirectly answerable to the public via the use of money from the public purse, procurers in the case sectors perceived the cost of failure in selecting a solution that did not work, as high. Contracts are made for 2-4 years and a solution that does not meet expectations will remain in the organisation during that time. The outcome of the procurement is not necessarily altogether bad, but can come with problems such quality issues, e.g. taste of water, or usability of medical supplies.

Challenge 9 Fear of failure

Procurers’ fear of failure includes the failure when solutions don’t properly serve the public, and the professional failure of the procurer(s) who selected the unsatisfactory solution. In other words, reputational considerations are one reason for the risk aversion sometimes seen in public procurement. Finland’s Market Court⁹ was a concern for several informants, although the number of cases in the court does not seem so high. In trying to ensure fairness and correct interpretation, how requirements are set has the ability to make the process even more bureaucratic, laborious and non-responsive to innovation as the requirements can be tightly defined leaving little room for consideration of innovative solutions.

⁹ http://www.markkinoikeus.fi/sv/index.html
**Challenge 10 Supplier risk**

Suppliers do not have advance knowledge of the outcome of a tendering process, but might need to make stocks available before the procurement decision is reached. Supplies might be country specific, which is the case in healthcare with language and packaging. Bidders, especially in healthcare, put forward that they need to balance the risk of obsolescence or loss of sales when allocating stock in advance, with the risk of contract penalties for not delivering on time because of long delivery lead times.

When it comes to non-goods procurement, suppliers may also risk losing their competitive advantage when giving offers that involve innovative ways of doing things. The openness of the procedure could discourage them from describing their offer completely.

**5.5 Leadership**

Informants reported that a required element is support for public procurement and innovation at strategic and leadership levels, both political and otherwise; leadership involving a vision for the organisation, for the sector and with connections to peers in other sectors.

**Challenge 11 Finding the right governance model for PPI**

Leadership can influence decision making at various levels and to different degrees. Support from leadership is required in order to bridge the gap between what is known, what the political reality is and how solutions can be implemented.

**5.6 Knowledge**

Finnish society is characterised by specialisation. This is visible in division of work between government at different levels, actors in different sectors, and specialists working in industry and public services.

**Challenge 12 Source(s) of innovation**

Informants across the three sectors articulated that innovation and related processes was siloed. Additionally, personnel carrying out the procurement function are rarely the subject matter experts in the area of possible innovation.

**Challenge 13 Fragmented competence and expertise**

Procurement has become a more specialised function. This is, in part, associated with innovation silos discussed above. The mandate for innovation is seen to lie with research and development (R&D) departments. Interviewees expressed that this attitude complicated information exchange between procurers and subject matter experts.

Moreover, several informants, both on the procurement side and the preparedness side, said that it is challenging for them to get subject matter experts to understand why they need to use procurement procedures or why they need to consider preparedness issues in their work.
5.7 Supply considerations

As shown above, procurement has supply and demand sides. There are supplier side challenges that can affect procurement.

**Challenge 14 Unwillingness to enter into tender processes**

Companies may not be willing to take part in procurement procedures because volumes are too small or too big; because they lack resources or knowledge to go through the procurement process; or because they know (or assume) the authority will eventually have to turn to them to procure the needed or wanted item.

**Challenge 15 Imbalance between procurement process and delivery timeframes**

Resources are scarce everywhere, but an issue that emerged from interviews was the time it takes to carry out procurement. This may range from a few months to half a year. This timeframe can be cumbersome for both procurers and suppliers. Conversely, a problem for some healthcare suppliers was the short intervals between a procurement decision being made and the start of the contract.

**Challenge 16 Paucity of reference cases**

This point is, in part, related to the procurer’s and supplier’s risk tolerance. Without tried solutions, it is difficult to convince procurers of the efficacy of a proposed solution. Procurers are reluctant to select a solution that has not been proven to work. However, without a market for innovative solutions, organisations will not innovate and will not offer for tender innovative solutions.

5.8 Preparedness in Finland

Finland uses regulations as one mechanism to ensure availability of supplies and continuity of critical functions in strategic sectors. There are several actors, e.g. Fimea, NESA, involved in overseeing that obligations such as keeping safety stock are followed.

**Challenge 17 What are we preparing for?**

There are numerous stressors that cities or municipalities are exposed to. Issues of sustainability, climate change, financial competitiveness and civil preparedness add to these stressors and can make people and infrastructure susceptible to the impacts of these issues. And so, while meeting present needs, cities and public procurers are more likely to also need to consider preparing for the future.

Some of the informants expressed that the current system of ensuring safety stock levels is outdated. They indicated being uncertain as to what situations the stocks, usually based on past consumption, are for and the levels of stock needed for different situations. The obligations on what to be stored are also not all-encompassing, so that the obligatory storage of critical material might not correspond with devices or supply needed to manage the critical material. Also, innovative solutions such as solar and wind power or new transportation modes do not seem to have been considered as alternatives in current preparedness plans.
Challenge 18 Preparedness outside core operations

In all sectors, both companies and authorities have preparedness or business continuity plans and measures in place. Seemingly however, these plans relate to the core operations of the organisations. However, it remains open how organisations perceive the preparedness of other sectors that are vital for the continuity of their own operations, for example the supply of fuel to emergency power generators or the health of maintenance personnel.

6 FORECASTING; THE FUTURE OF PREPAREDNESS

In Finland, an aspect of preparedness and humanitarian response is that it is linked to a system already in existence for other purposes, and with local stakeholders. In this case, it is connected to the structure of service provision, administration, politics, bureaucracy and decision-making, including in the case sectors. In order to appreciate preparedness and response, it is necessary to understand the systems they are linked to as well as priorities, needs, core capabilities and how different actors interact.

Taking into account the already described intricacies of the public procurement process, the solutions needed in normal or “business-as-usual” periods are not immediately available. In other words, there is normally enough time to make procurement decisions in normal times. This is not so in the case of crisis or disaster when solutions are required urgently. For this reason, it behoves us to prepare for such situations ahead of time. Additionally, because crises or disasters occur infrequently but with possibly grave consequences, we have to get the response right the first time, there is no rerun.

Preparedness and response call for better integration of security of supply, social, economic and other relevant policy. PPI is one way to achieve this. Preparedness measures can occur as part of a bigger picture, and innovation oriented public policy is one of those pieces.

6.1 Tailor to different scenarios

There are myriad threats to Finland’s welfare, economy, environment and security. The severity of these threats is dependent on the probability of their occurrence and to what extent they would affect people or disrupt business-as-usual. This means that preparedness is predicated on external factors.

6.1.1 Extended supply networks

Due to interconnected global supply networks, Finland is susceptible to internal and external events. Extra-national aviation and maritime supply networks are an essential ingredient in preparedness. There are uncertainties from global unpredictability, e.g. financial or weather related, meaning that events can occur with little to no warning.

6.1.2 Reliance on electrical energy and other technology

From our analysis, some preparedness measures are contingent on the availability of electrical energy and other technology. This raises the question; are we over-reliant on power and technology, especially information technology, in the formation of our preparedness initiatives? While technology is important, it should not be a substitute for fundamental system design and infrastructure. An added element is the human reaction and interaction with technology in relation to planning for preparedness and response.
7 INNOVATION IN PREPAREDNESS

Currently, policy such as that of public procurement and that dealing with innovation or with preparedness, is crafted and worked on separately. Additionally, at the EU and at the state levels, innovation and preparedness have become high profile issues both as policy goals in themselves and as contributors to other desired social outcomes; innovation as a driver of competitiveness and sustainability and preparedness as a driver of resilience in an increasingly turbulent global landscape.

However, both innovation and preparedness if dealt with in isolation can lead to misunderstanding of the factors that affect them were they looked at as part of a bigger picture. This bigger picture includes, e.g. influences from outside of the formal system as well as policy misalignment which may make implementation and outcomes less effective. Analysis of the data from this research shows that there are several factors which show that linking innovation and preparedness makes for a more efficient way of working and has numerous benefits.

First, it is likely the same agencies making plans for everyday provision of services as are involved in planning and procuring for crisis or disaster. For instance, a municipal authority may procure electrical energy for its residents while also working to ensure that distribution and supply are uninterrupted should a crisis occur; in Finland crisis preparedness may include stockpiling of fuels. Furthermore, it is also likely that it is the same public authorities, subject to public procurement regulations, who are likely to procure during peacetime as during crisis or disaster. Thirdly, Finland does not exist in isolation, it is a part of what are now complex global networks. This means that now more than ever, the prospect of Finland being affected by events occurring in a different part of the world is higher, e.g. the effects of Eyjafjallajökull’s 2010 eruption in Iceland affected air travel in Europe and other parts of the world. Disasters can have a major impact on a country’s economy and on the wellbeing of its citizens. In addition, it is difficult, if not impossible, to prepare for all disasters. However, being innovative in preparing for multiple hazards and possibilities can be one part of the preparedness landscape.

Therefore, it follows that public authorities need to actively incorporate preparedness and disaster risk plans into their normal procurement and other operations. Effective use of resources is one of the tenets of public procurement regulation and processes. It has been acknowledged that procuring authorities are increasingly subject to budget constraints, purchase of solutions that serve multiple purposes, innovation and preparedness in this instance, is a more effective use of resources. Lastly, it also delivers on other policy goals as an innovation oriented public procurement approach is multi-pronged; it allows for the procurement of innovative solutions and for innovation of the procurement process itself. For example, incorporating preparedness in everyday procurement is innovative while procurement of an innovative solution useful in and outside crisis enhances our preparedness.

8 RECOMMENDATIONS

The recommendations included here provide a common foundation for the different sectors, however their operationalisation may look different for different sectors and organisations. It should be noted that the recommendations are linked.
8.1 Recommendation 1: The frameworks exist; no need to reinvent the wheel

Effectively utilising and strengthening existing government systems and structures can promote information flow, dialogue and collaboration. This uses resources such as time and money better than trying to establish new methods. It is important to work towards improved integration and coordination of current initiatives in order to advance policies for the successful execution of PPI.

There are different parts of the ecosystem that are designed to provide support for different functions, e.g. Motiva, TEKES, NESA and attendant regulations. The trick lies in using these different arms to achieve overall success. Presently, they do not seem to be used to their full advantage; there is room for better integration. Actors need to have a more holistic picture and to work with this system as far as possible.

8.2 Recommendation 2: PPI as strategy, PPI as business

At the heart of it public procurement is about transactions, about buying and selling and it can also be about entrepreneurship. In addition to the public benefits sought, procurers and suppliers need to look at innovation oriented public procurement as being similar to a business deal. Organisations can then look at PPI from the perspective of how to do business. This way of working can be incorporated into organisational strategy, planning and risk management.

From the supplier perspective, a contribution to PPI can occur if and when businesses recognise that innovative solutions are important to their consumers, staff, shareholders and financiers. If it contributes to optimising what businesses want to achieve, PPI will be seen in a different light.

8.3 Recommendation 3: Risk management

Risk management in public procurement should also be explored; there does not seem to be a clear, over-arching risk management system taking into account how risks are analysed, rated and categorised. For instance, the organisation and not the individual could assume responsibility in case of failure. Moving away from reputational to fiduciary or financial risk management may encourage procurers to be more considerate of new, possibly untried solutions. Procurers should feel empowered to make PPI decisions.

Another avenue is for public and private organisations to be willing to share the risk in the development and implementation of innovation and innovative solutions. However, for this to happen, procurers and suppliers might need to work with seemingly conflicting regulations. Furthermore, how contracts are awarded also needs to evolve. For instance, different parts of a contract can be allocated to multiple organisations instead of just one.

8.4 Recommendation 4: Data and information management

The actors involved in various stages of public procurement all seem to be collecting information and data. The question is; what is this used for? Is there another, better use of the data available now and to be collected in future? In our investigation, no one actor pointed to accessing or using data from those they may not work directly with to

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8 See for example http://www.finnishwaterforum.fi/en/expertise/
inform their public procurement of innovation decisions. What are the different ways of looking at this information or data and how can we translate this knowledge into practice?

8.5 Recommendation 5: Responsibility and accountability

In executing PPI, there are multiple stakeholders, each with their own interests as well as a complex web of incentives. Who, or what, is accountable for the decisions made or not made regarding PPI? Information gleaned from informants shows that accountability has to do with enforcement, representation, justification of outcomes and being answerable. It is clear that linking PPI to local issues is crucial in advancing its agenda at the city level. The strength of the link between a city’s or a municipality’s PPI policy and its local interests can only assist in how costs and benefits are viewed.

8.6 Recommendation 6: Capacity and participation

Enhancing capacity for implementation and execution of PPI includes empowerment and capacity building for various levels of government and local authorities. Successful public procurement requires a wider range of skills and capabilities which procurers do not always possess. This suggests a closer working relationship between the different specialisations; e.g. the procurer and the subject matter expert. In order to be understood and used effectively, intricate processes and legislation demand knowledge and supporting functions. This highlights the need to build institutional capacity within organisations to implement PPI policy.

For capacity building, one aspect is for stakeholders to take up a learning approach to PPI including learning about what’s new, what’s available and what’s possible in the market. This means that PPI can be informed by practical experience, taking into account what new advantages innovative solutions can bring while avoiding solutions that do not necessarily fulfil newer requirements because they have been seen to work.

8.7 Recommendation 7: Adopting new language

Both suppliers and procurers need to acknowledge and understand the existence of innovative ideas and solutions. However, for reasons detailed in earlier sections, the language used in PPI should be more inclusive, e.g. in setting requirements, writing bids and proposals. This makes it possible for those who do have innovative solutions to put in tenders also.

8.8 Recommendation 8: Managing expectations

Another element important to innovation oriented public procurement is that of what people have come to expect. What are realistic expectations for what can be achieved with public procurement and innovation and how can they be managed? On the whole, it is critical for the different stakeholders to understand what can be done or achieved within existing laws, regulations and processes. This should be looked at from the perspective of the supplier and the procurer. Private organisations will likely be looking for a return on their investment to ensure that that their resources have been spent on something that will benefit them in the long-run. For instance, R&D investment in pharmaceutical products can be long and costly. Similarly investment in public works such as a new dam or power plant can be expensive.

Specifically, for SMEs, it might be beneficial to look at them more holistically. Not just what they can offer procurers or suppliers but also, does the SME have the capacity
necessary to deliver a successful solution? Additionally, what can the SME get from this venture? This may help to overcome the issue of SME size and capacity.

8.9 **Recommendation 9: Transparency and clarity**

As previously pointed out, there is a complex web of policy, regulation, incentives and dis-incentives related to PPI. This is time and resource expensive and makes it difficult to get commitment from private, and especially SME, organisations. Also, the public sector needs to explain, with clarity, how business can contribute in a way that does not impede their business plans. Apart from possible incentives, businesses need to understand the strategic logic of innovation oriented public procurement.

9 **CASCADING INNOVATION THROUGH PUBLIC PROCUREMENT**

Cascading innovation in a supply network increases the chances that the benefits of innovation are diffused and possibly adopted widely. From interviewee descriptions, innovation oriented public procurement affects actors beyond the first-tier supplier-procurer relationship. Innovation can cascade in the supply chain beyond the primary supplier to their supplier(s) and customers, as well as beyond the procurer to the general public and other end-users.

The factors that may impede or interfere with public procurement and innovation have been laid out. The recommendations outlined above are aimed at helping to overcoming some of these challenges. Keeping the challenges, recommendations and revised EU directives on public procurement in mind, we evaluate some of the ways in which innovation can be cascaded in a supply network.

It emerged from the picture painted by interviewees that there are formal and informal structures affecting the cascading of innovation in supply networks. Informal here means outside the public procurement process or outside supplier organisation innovation processes. Starting with the formal structures, there are different stages at which PPI can influence the cascading of innovation in a supply network. One such point in public procurement is during needs identification and before the drafting of requirements. It is here that the procurer can carry out market research to learn about products available for procurement as well as products in development. For first tier suppliers, knowledge of a ready market for innovative solutions can act as an incentive for them and their suppliers to invest in innovative solutions.

In addition, another way for public procurement to spur innovation at different levels of the supply network is through the use of the competitive dialogue procedure. This can enable procurers to act as intermediaries between end-users and suppliers; as Kachali et al. (2016, p. 249) noted, “the procurer’s role can be in getting end-user needs directly to the supplier and also in using their expertise to translate end-user needs into requirements suitable for tender”. They concluded that “the inclusion of customers involves going beyond the first tier supplier and procurer interface and can be used to cascade innovation in the supply network” (p. 249).

Informally, innovation can be cascaded in supply networks through inter-organisational collaboration on research projects. Public sector organisations in all three case sectors
reported engaging in development projects with industry outside the public procurement process. As Kachali et al. (2016, p. 249) also noted

“such collaboration contributes to strengthening the supplier-procuer relationship for the longer-term which may be used to advantage in the formal public procurement process. When the new EU directives incorporated, such collaboration can be formalised and undertaken in the form of innovative partnerships, and the outcome of the partnership directly procured by the public organization”.

Suppliers interviewed for this research pointed to their organisations still following what can be called the classic innovation cycle where innovation is seen as something carried out by R&D departments. This means that the innovation process is linear and technology or supply driven. However, this way of cascading innovation does not necessarily take into account the modern consumer’s contribution to cascading innovation, another informal structure. For innovation to be successful, the technology must meet the consumer’s needs. Taking the electricity market as an example, distribution of power is an innovation technology which in itself does not take into consideration how the power is used. Effective realisation is how this not only serves the customer’s needs but also how the energy company benefits from this service provision. This means that the innovation process is therefore no longer just pushed from inside the organisation to the consumer, it involves a circular feedback loop with information from the consumer. Here also, public procurement can act as a bridge between the supplier and the end-user.

**10 WHAT NEXT?**

Despite all of Finland’s advancement and the goals attained, there still exist societal needs and challenges to be tackled, now and in the future. Some of these demands, such as better preparedness, can be met via the use of innovative solutions. However, how should we quantify or qualify the successful use of PPI as there is a whole ecosystem within which it is situated? Should the overall outcome be considered or should the different partners in the network define individual success factors? Additionally, the question on what specific role innovation should and could have in preparedness in Finland is yet to be comprehensively answered.
11 REFERENCES


APPENDIX 1: INTERVIEW GUIDE

Background
Name: 
Title: 
Organization: 
Years of experience: 

Sector:
1) Can you tell about the sector you work with
2) Who are your major customers, and which type of procurement rules apply to them?

Procurement (from the supplier perspective)
3) Can you explain how your customers typically procure from you? (PROCESS)
   a. How do public procurement regulations impact on the process?
      i. Who is your contact at the customer level?
      ii. Which challenges do you face in public procurement?
   b. How do you prepare for emergencies?
      i. Pre-positioning, buffer stock, replenishment – intervals, who does what, what does the law dictate
   c. What do you do in the case of emergencies / pandemic alerts?
      i. What happened in the case of avian flu / swine flu? (H2N1)
      ii. How do processes change in states of alert vs. state of emergency? At which point do which processes apply to procurement?
   d. What triggers innovation in the sector?
      i. Who initiates innovation? Can you give some examples?
      ii. How do your customers procure for innovation from you? (TRIGGER?)
      iii. How are the innovation parameters set? (CORRELATION TO OTHER SECTORS)
4) How do you procure from your suppliers?
   a. Who are the main suppliers, what do they supply, with what kind of contracts (framework, ongoing, replenishment...)
   b. How does innovation for one customer/purpose impact on other customers / sectors?
      i. How does it impact on suppliers upstream your supply chain?
      ii. How do you procure for innovation?

Innovation
5) How does innovation in your sector occur?
   a. What/ who triggers innovation
   b. What is the process of innovating
   c. What are the challenges
   d. Can you tell some examples of innovation in your sector, how it occurred (the process)

Sustainability/ Future systems
6) How does sustainability (ecological) factors influence
   a. The procurement process now and in the future?
   b. The procurement in the disaster situation?
7) Do the sustainability factors influence the preparedness of the sector?
APPENDIX 2: REPORT FROM THE CAIUS PUBLIC SEMINAR HELD AT HANKEN ON 17TH NOVEMBER 2016

CAIUS Seminar: Public procurement for innovation and preparedness

Date & Time: 17th November 2016, 9:30-15:00 || Place: Hanken School of Economics, Helsinki

Hosts: Hlekiwe Kachali & Isabell Storsjö

Agenda

08:30 – 09:30 Arrival, registration and coffee

09:30 – 12:30 Session I

09:30 – 09:45 Welcome

Timo Korkeamäki, Pentti Professor of Finance and Dean of Research, Hanken

Christian Fjäder, Director-Policy, Planning and Analysis, NESA

Gyöngyi Kovács, Erkko Professor in Humanitarian Logistics, Hanken

09:45 – 10:00 Project and seminar overview

10:00 – 10:15 Description of sectors and supply networks

10:15 – 10:30 Challenges of Public procurement for innovation

10:30 – 10:45 Coffee break

10:45 – 11:15 Challenges of Public procurement for innovation, continued

11:15 – 12:00 Breakout sessions – sectoral discussion

Facilitators:

Ira Haavisto, Director, HUMLOG Institute

Kaisa Hernberg, Development Director, Climate Leadership Council

(Mika Aaltola, Programme Director, Finnish Institute of International Affairs was scheduled as facilitator, but cancelled due to illness)

12:00 – 12:30 Summaries from break-out sessions and discussion

12:30 – 13:30 Lunch

13:30 – 15:00 Session II

13:30 – 14:50 Plenary session with audience interaction on the topic “Where do we go from here: recommendations and solutions”

Panel members: Representatives from Climate Leadership Council, HUMLOG Institute (the Finnish Procurement Lawyers Attorneys Ltd were scheduled to participate in the panel, but cancelled due to illness)

14:50 – 15:00 Closing of the seminar

15:00 – Cocktails
Session I

The seminar was attended by approximately 30 individuals from different organisations and sectors. The organisers had built the program to allow for discussion, and the participants were engaged from the start, asking questions and sharing their own views and experiences. One participant commented this afterwards: "The seminar had a wonderful and participatory start. The hosts managed to create a very relaxed atmosphere where many participants shared their thoughts and expertise."

After the welcoming words and introduction to the seminar and research project, the challenges of procuring for innovation and preparedness were explained. In the words of one of the seminar participants:

“The definition of innovation seems to be confusing... In many economic theorisations, innovation is something that is or aims to be commercialized. However, in this project, innovation seems to include anything that is new to a person. A more profound discussion on innovation would have been beneficial though. From my personal standpoint, I think it is great and more humane to include the individual in the definition, leaving more room for the agency of human beings.”

After presentations of some of the findings from the research project, the seminar broke into two different sessions for further discussion on the challenges of procurement; one focusing on the utilities sectors (energy and water) and one focusing on the healthcare sector.

Utilities (energy and water)

The utilities group attracted the majority of the participants. The discussion was facilitated by Development Director Kaisa Hernberg from the Climate Leadership Council.

The group session started out with participants introducing themselves and expressing their general thoughts on what had been put forward in the morning presentations. A large part of the discussion centred around questions raised by the group:

- How can procurement be a more strategic asset than a hassle? Procurement is a narrow field that most organisations hesitate to engage with; how can procurement be something considered not as a must but as something that gives advantages and strengthens the organization?
- Are we happy with the definition of innovation?
  - It should be more than a new idea, it should have value as well (commercial, financial, social) with a positive impact; it can also be incremental improvement
- How can procurement be made more innovative?
  - Who should decide?
  - More space for provider to decide how to solve problems. The law and regulation indicate procurement should not focus only on economic aspects
  - Safe options versus risk-taking
- Does the public have a new role?
- Requirements in public procurement:
  - Do procurers know the market and what it offers?
  - From where do innovations come – from the procurer or the offerer?
  - How can procurers’ familiarity with the market be improved?
  - How to set evaluation criteria?
- Innovative procurement process
  - Should attention be given to commercialism?
  - The extent of specificity – challenges in legal aspects
  - Innovation through e.g. hackathons, “SLUSH”, or open innovation platforms (outline problems and ask for solutions in platform)
  - Can requirements be open?
  - Alternative bids (in the new law)
  - For service level agreements (in normal / emergency / recovery), describe the outcome but leave open the ways this can be reached (reliability of service a point to relate to this)
Organise several stages of the procurement process (involve providers in discussion on requirements and possible solutions), or esimarkkinavuoropuhelu to tell providers about upcoming procurement to allow for preparation

- Support in-house start-ups
- Still difficult for SMEs to enter as it is expensive
- Environmental criteria as part of economic growth driven by innovation

**Healthcare sector**

The healthcare sector group was facilitated by HUMLOG Director Ira Haavisto, and focused on challenges and future areas of research. Discussion included whether actors identify with the outlined challenges; the relationship between the public and private (and so called dormant partnerships); and the evaluation of the supply chain in “normal” versus “special” cases and the buffers. On public procurement and the use of categorization in the sector; do they inhibit or allow for innovation? Technical details can be quite precise.

In relation to preparedness, the group discussed whether it is just scaling up or also preparedness for black swan event. There was a call for more info-sharing, collaboration, forecasting, but also policy-maker involvement (“Why prepare?”) and clarification of roles and responsibilities. One alternative suggested is to move towards supplier collaboration and development. More dynamic public procurement could be possible. Supplying real needs was an issue also raised, together with the question of information-sharing and possibility for supplier development.

Future research suggestions included:

- Forecasting
- The SOTE reform and its potential impact on preparedness and public procurement
- Organisational caps in terms of structures and process (private-public)
- Public procurement scaling up, scaling down
- Practical tools, and research on them
- Information-sharing: big data
  - When and what is shared?
- Cooperation/competition

**Lunch**

Also the informal part of the program was appreciated:

“We were lucky to have really interesting lunch discussions! Ranging from Zambian preparedness systems to Finnish, Chinese and Kenyan healthcare policies, our perspectives got widened to a global level. There were healthcare professionals who shared their experiences from various perspectives, shedding light on the legal frameworks for medicine innovation and preparedness. Very inspiring!”

**Session II**

**Panel discussion with guests Kaisa Hernberg and Ira Haavisto**

Session II started with a summary of the group discussions before lunch, continued with some viewpoints from the panel guests, and continued with questions and comments from and to the audience, panel members and organisers. As in the morning session, seminar participants were actively adding their perspectives and expertise to the discussion. Some of the points raised were:

- Public procurement plays an important role in the cleantech market for new products and services
- Public procurement hinders adoption of more resource-efficient solutions
- Life cycle cost a rule with only few exceptions, and circular economy solutions, alternative energy solutions rather rule than good will of procuring organisation
- A question to for NESA: why should we think of combining innovation and preparedness? Should there be a separate body in charge in emergency situations?
o Comment from NESA is that [preparedness] governance is still as in the 80s, governance in silos.

- Who bears the responsibility for cross-sectoral issues? Are responsibilities only in the hands of the authorities?
  o An example from the water services sector: what if something [dangerous] is deliberately introduced into the water treatment process?
  o On the role of the citizenry in preparedness, have we lost some of the ability to prepare ourselves due to the welfare state?
  o Supply chain issues; authorities are not omnipotent; e.g. “Why can’t we get a certain medication to Finland?” – Because no-one wants to bring it here

- On aspirations, does Finland want to be the most innovative country?
  o What are the costs, both initial and over time?
  o What are the expectations?

- Who decides on externalities and who prices them?
- State budgeting puts restrictions on innovativeness in terms of resource utilization and using alternative solutions
  o Possibility for cash-based assistance as an innovative model?
  o What about alternative financial models such as renting devices and paying for the consumables? (But tricky due to the budgeting practices)

- Who gives the values to societal risk? Who should give value to societal risk?
  o Risk should be shared. But how?
  o Innovative processes, a lot of effort put into the expensive last 2%

Some of the recommendations:

- New contract design?
- Why do we have the right to procure for security (from the legal point of view) – clarification is needed

Outcomes asked for by seminar participants:

- Tools
Meddelanden från Svenska handelshögskolan

Hanken School of Economics. Working Papers.

2010


2011


2012


2016


2017