**Project Name: Policies for Research and Innovation in Small Member States to Advance the European Research Area ERA-PRISM**

# Deliverables D 4.2:

# Best Practice Case Studies

**Introduction**

This report explores small countries' capacity to implement innovative public procurement through the identification and analysis of local case studies. A common template for mapping information on these cases was designed to allow the easy comparison of information relating to:

- The procuring agency
- What was procured and why it is innovative
- Agency information and policy background
- The procurement process
- Impacts
- Lessons Learnt

The review of the case studies indicates ways in which small countries could take advantage of this instrument and the barriers that need to be overcome. The conclusions highlight ways of improving the approach to innovative public procurement and the possibilities for joint action to advance this agenda.

# 1 Case studies

Case studies form an important means for those developing new policy approaches and instruments to benefit from the experience of others. Apart from engaging with the sometimes complex and unpredictable nature of real world procurement, they also offer the possibility to reduce errors in the future and capture ideas that worked. Perhaps most importantly they demonstrate that success is possible (as well as in one case a failure to achieve the intended innovation). The ERAPRISM project has compiled a database of available case-studies. Helpful as these are, few are situated in small countries so it was decided that project partners would conduct and report on a new set of cases, in some instances building on work that had been done previously. The six examples presented here are:

- X-Road – Estonia
- Active Data Centre –Malta
- Hospital Catering – Malta
- IWC Steam Explosion – Latvia
- Waste/garbage collection – Iceland
- Ljubljana Smart Card – Slovenia

In this report summaries are presented. Full versions of the cases are to be found on the ERA-PRISM website in the Best Practices Repository (www.eraprism.eu/).

## 1.1 Case 1: Integration of different public sector databases of into one information system – X-Road project

| **Country:** Estonia | **Procuring Agency:** The Estonian Informatics Centre (RIA) |
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**What was procured and why it is innovative:**

The X-road (X-tee in Estonian) was the object of the procurement. It is an original working system, the first in the world to connect all governmental information systems. It was developed and implemented in Estonia. It is now the backbone of the Estonian e-Government system, which provides a technical and organizational environment that enables secure data transfer between e-government databases and between individuals and governmental institutions.

**Agency information and policy background:**

RIA was established by the Estonian government to solve the main IT problems common to several state organisations and to arrange the work of the state's information systems.

IT procurement activities conducted by RIA are generally part of the wider activities that are conducted in accordance with the Estonian Information Society Strategy 2013.

**The procurement process:**

The procurement team was formed especially for X-Road and consisted of qualified professionals. Since 2001 it has procured different versions (from 1st to 5th) of X-Road, and in most cases the negotiated procurement procedure with notification was used. Market studies were conducted before each procurement exercise, and the procurement team then produced a detailed structure of design as technical requirement. For the 5th version, a two-stage negotiated procurement procedure with notification was used – the first stage aimed to identify eligible tenderers, while the second stage was focused on selecting the most cost-effective tender. A 'points-based system' was developed for awarding the contract, with technological completeness and value for money as criteria.

**Impacts:**

X-Road provides new technological possibilities for creating public services – it has increased the state's administrative ability and decreased the need for resources for administration. X-Road has been presented in different international exhibitions and conferences, and it has been positively audited by international experts for several times. It has been recommended as a model for other countries. Some elements of the X-Road solutions will be adopted to create information systems in Serbia and Azerbaijan. Negotiations with other countries are going on.

**Lessons:**

- The interest of all the stakeholders should be balanced to guarantee the success of projects.
- Constant monitoring and assessment are needed to ensure the development of the product.
- The implementation of new technologies may come across certain opposition. Specific strategies are needed to overcome this.
- X-Road is a strategic technology and certain confidentiality rules should be followed, to protect the interest of the public.
- In this case, common technology solutions could be used in different areas, and joint procurement between different ministries was conducted. In this way cost-saving benefits were obtained.

## 1.2 Case 2: ICT infrastructure to support the Active-Active Data Centre concept

| **Country:** Malta | **Procuring Agency:** the Department of Contracts on behalf of MITA |
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**What was procured and why it is innovative:**

An Active-Active Data Centre system is based on the concept of having two geographically separate data centres to mirror and operate synchronously, which is a change from the previous Data Recovery Site system which was inactive until required. In this case, the ICT infrastructure for the Active-Active Data Centre was procured, namely the enterprise server and storage consolidation project.

**Agency information and policy background:**

The procuring agency was the Department of Contracts (whose mission is to regulate public procurement activities on the principles of fairness, transparency and non-discrimination) on behalf of Malta Information Technology Agency (MITA, former MITTS)[1], which is a government agency focused on providing ICT services to the Public Sector).

The project formed part of the ICT Infrastructure Change Programme, which was started in 2001 with the aim of revolutionising the Government's ICT infrastructure. The direction set by Government in its ICT projects for Malta provided the mandate.

**The procurement process:**

The procurement team consisted of executives from the Department of Contracts and MITTS, and the process lasted from April 2005 (preparation) to November 2006 (contract awarded), with a negotiated procedure adopted. Rather than technical specifications, a set of business requirements were stipulated to increase the potential innovativeness of this project. Value for money was the key criterion used, which can be expressed as the lowest long term cost over the lifetime of the project, at the quality expected. Three bidders were shortlisted for the negotiated procedure phase, with the tender being awarded to one company. The contract entailed a 7-year partnership agreement for EUR8.8 million including VAT.

**Impacts:**

- The product performed as well as expected and was more efficient than what it replaced.
- The product met the target in terms of cost-efficiency, but it cannot be directly compared with its predecessor due to different/additional functions, and lack of information of the previous system.
- The level of service to the end-users improved due to the specified business requirements.

**Lessons:**

Like any innovative solutions, it was not easy to implement the product in the organisation but the difficulties were not insurmountable. No reference groups were used.

[1] MITA was Malta Information Technology and Training Services Limited (MITTS) at the time of this case, which was then transformed into a government agency in 2009.

## 1.3 Case 3: Catering Services to Inpatients at Mater Dei Hospital

| **Country:** Malta | **Procuring Agency:** the Department of Contracts on behalf of FMS |
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**What was procured and why it is innovative:**
A new hospital catering system based on B-POD system was procured. The innovativeness of this system is that it adopts an advanced procedure of pre-plated cook-chill system which ensures that food is tastier, fresher and more hygienic than traditional systems. The one in this case was the fourth one in the world.

**Agency information and policy background:**
The procuring agency was the Department of Contracts (whose mission is to regulate public procurement activities on the principles of fairness, transparency and non-discrimination) on behalf of the Foundation for Medical Services (FMS), and the services were procured for Mater Dei, St Luke's and Sir Paul Boffa Hospitals.

Leadership was provided by a high ranking official from the Ministry of Finance who was also a member of the FMS Mater Dei Steering Committee, and thus political support from the Ministry of Finance were ensured as well.

**The procurement process:**
The process lasted from April 2005 (preparation) to December 2006 (contract awarded), and a negotiated procedure with competitive dialogues was chosen as the procuring strategy. Technical requirements included the quality of the central processing unit, other equipment and the menus, and price was the key criterion for awarding the contract. The tendering notice was published in the Malta Government Gazette in July 2005 and JSBZ Catering won the contract, which entailed a 10-year partnership agreement for EUR2,347,542 annually.

**Impacts:**
The solution procured allowed the Hospital to provide a high quality, catering service, with menus catering for the diverse needs of 900 patients in a much more healthy, hygienic and cost-efficient manner.

**Lessons:**

- This was the first time that a competitive dialogue process had been used in Malta, and through this bidders can show their capabilities and gain mutual understanding with the contracting authority.
- The competitive dialogue procedure led to appeals by unsuccessful bidders. This requires transparency in the process and the need to ensure that the process is conducted in accordance with ethical principles.
- Although the project was successful, FMS has not used the process again, which is mainly because open tendering is much less demanding as a procedure.

## 1.4 Case 4: Steam Explosion Pilot Plant of the Institute of Wood Chemistry

| **Country:** Latvia | **Procuring Agency:** the State Institute of Wood Chemistry (IWC) |
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**What was procured and why it is innovative:**
The erection of a pilot plant for auto-hydrolysis of wooden products using steam explosion was procured. This pilot plant was an original innovation in the domestic market (no industrial prototypes existed before), and although there had been similar pilot plants abroad already, this was the first time for the supplier in this case to build one.

**Agency information and policy background:**
IWC is focused on developing scientifically grounded, environmentally friendly and waste-less technologies, which can be used for obtaining competitive materials and products from wood and wood biomass. The motivation of the actors involved for pursuing an innovation was to obtain up-to-date equipment for investigations including contract research with local and foreign customers.

**The procurement process:**
The initiative to procure the steam explosion pilot plant was taken by leading researchers of IWC. They worked out a draft technical specification for the pilot plant. The Administration of IWC organised the procurement process based on an open procedure. The main criteria for procured techniques were most favourable price (70%), quality and technical services (30%) in accordance with the technical specification. The tendering notice was published on the homepage of State Procurement Monitoring Office. Only one application was submitted by "FIL&Co Ltd" and this small national company won this tender. The time scope was 12 months and the contract value was EUR 71,100 without any special preparation costs.

**Impacts:**

- The result fulfilled the expectations and researchers had an up-to-date pilot plant for deep and complicated investigations.
- The supplier gained valuable experience in building the complicated pilot plant. After this contract they also erected pilot plants for other research organisations.

**Lessons:**

- The procedure allowed a supplier without proof of concept for this kind of plant to go ahead, and by overcoming the difficulty of lack of experiences, the supplier managed it well and the difficulty did not affect the outcomes.

## 1.5 Case 5: Waste and garbage collection in the city of Hafnarfjordur

| **Country:** Iceland | **Procuring Agency:** the Division of Operations of Hafnarfjordur |
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**What was procured and why it is innovative:**
Environment friendly waste collection services using methane gas fueled trucks were supposed to be procured, but at the end the procurer picked the lowest bid, one which did not involve teh use of methane, and there was no innovatiion in this case. In summary this is a negative example of public procurement for innovation.

**Agency information and policy background:**
The Division of Operations within the administration of Hafnarfjordur is a local contracting authority, and the town of Hafnarfjörður is a local administrative body. With regard to policy mandate, while the government policy (and the municipalities as well) states that one of the goals should be protecting the environment, there are very few guidelines for the administrators and/or procurers to follow.

**The procurement process:**
The process in its entirety was about a year long including preparation and tendering process. The focus of requirements was mostly on the outcome, e.g. saving money and protecting the environment, but the environment-protection criterion did not work well because the policy was weakly enforced (by offerin a 5% price premium). Unlike the procuring administrators, who wanted to make the use of methane gas as fuel as a non-negotiable requirement, the political entity refrained from it. Finally the city accepted the lowest bid, roughly 125 million ISK (about 82 thousand Euros).

**Impacts:**
The service is not more or less efficient today than before, and this new contract did not increase or decrease the supplier‘s market share since this company had been working for the city for years.

**Lessons:**
The environmental criteria were not applied, as the general national policy strategy in this area appears not to be implemented at lower levels. Further, the opportunity to draft functional specifications and thus to call for novel, environmentally friendly solutions were not applied rigorously as a criterion for contract awarding. A chance was missed to link the two, the lowest cost alternative was selected without a real proof of combining high efficiency and environmental effectiveness. By nature this is not a ‘public procurement for innovation’ case.

## 1.6 Case 6: Ljubljana Smart Card

| **Country:** Slovenia | **Procuring Agency:** City of Ljubljana public holding company (Javni holding Ljubljana d.o.o.). |
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**What was procured and why it is innovative:**

The unified City of Ljubljana smart card. The smart card is to be used for public transportation, parking, city attractions/museums entry card, membership card (e.g. libraries), means of payment for various services and events. The innovation is mainly in the technical area as well as expansion possibilities. Main features are contact-free operation and deposit of credits with state-of-the-art communication options.

**Agency information and policy background:** The holding and connected companies are responsible for most of the civic service in the city of Ljubljana and adjacent areas – including but not limited to electricity, water supply, waste management and public transportation. It is in 87% owned by the City of Ljubljana. The rest is owned by surrounding municipalities. The mayor's office is striving toward a modern city in connection with cultural heritage.

**The procurement process:**

To stimulate innovation, the main requirements of the procurement order were that the smart card should be extendable to different applications and operated contactless. Suppliers were called upon to come up with their own solutions meeting these minimal criteria (some technical specifications, e.g. range of contact-free reading devices, and service response parameters were defined in more detail according to the specific intended uses of the smart card, also the size of the smart card was defined).

The specifications and all other questions were further clarified in the procuremen process before the bids were submitted by providing a period for answering questions posted by the potential bidders. The successful tenderer, is a medium-sized company, but very well known in Slovenia in the ICT sector. It has been awarded tenders by the government before and has excellent references.

**Impacts:** The system is still in its introductory phase with the smart cards available to the users for about 6 months – mainly used for bus service. After this first phase, expansion of functionalities to all mentioned above is to ensue. So far, the feedback is mostly positive and there have not been any major technical concerns. The arising issue is that no-one can access a bus without the card as cash payment is no longer possible. There have also been some issues with privacy protection.

Overall, the public have an easier, less complicated and more modern way of accessing the city services, especially when taking into consideration the future functionality expansions. Previously, they were using a plethora of paper copy tickets, membership cards,… and were not always able to predict what sort of payment would be possible for various kinds of services or tickets.

Lessons: Risk was managed through careful definition of legal, financial as well as technical requirements of the procurement process. The aim was to minimise the risks but only to the degree that would not hinder the freedom of the provider to introduce innovative solutions. The desired effects were mostly achieved, through contracting of a well-established local provider of high-tech solutions.

## 2. Insights and Implications from the case studies

In this section we compare the country case studies and draw insights from the experiences generated. The case studies vary in terms of the sectoral focus, the degree of innovation, the impact generated, the procurement procedure used, the problems faced and the learning generated.

It is noticeable that the two case studies which involved the greatest degree of innovation and the most complex procurement procedures (negotiated procedure and competitive dialogue) were both in the ICT sector – X-Road in Estonia and the Active-Active Data Centre in Malta. In both of these cases there was a clear need in government, so the needs of the purchaser were being met, but those involved went beyond conventional solutions to achieve an innovation-based result. It was not a coincidence that these procedures needed to be used – needs were complex and had to be articulated over a period of time with a significant degree of interaction. Nonetheless, **advanced procedures are not a panacea.**

**In the three case studies from the ICT sector, positive impacts are reported to date in terms of resource efficiency and timeliness of service**

- **X-Road** provides new technological possibilities for creating public services – it has increased the state's administrative ability and decreased the need for resources for administration.
- **Active Data Centre**: The product performed well as expected and was more efficient than what it replaced. The product met the target in terms of cost-efficiency, but it cannot be directly compared with its predecessor due to different/additional functions, and lack of information of the previous system. The level of service to the end-users improved due to the specific business requirements.
- **Smart card system** is still in its introductory phase with the smart cards available to the users for about 6 months – mainly used for bus service. After this first phase, expansion of functionalities to all mentioned above is to ensue. So far, the feedback is mostly positive and there have not been any major technical concerns. The arising issue is that no-one can access a bus without the card as cash payment is no longer possible. There have also been some issues with privacy protection. Overall, the public have an easier, less complicated and more modern way of accessing the city services, especially when taking into consideration the future functionality expansions. Previously, they were using a plethora of paper copy tickets, membership cards, and were not always able to predict what sort of payment would be possible for various kinds of services or tickets.

**Despite the challenges identified in these case studies, the experience gained from these PPI cases helped to inform subsequent PPIs**

- Steam explosion pilot plant: Results fulfilled expectations and researchers had an up-to-date pilot plant for deep and complicated investigations. The supplier gained valuable experience in building the complicated pilot plant. After this contract they also erected pilot plants for other research organisations.

- Waste and garbage collection: The service is not more or less efficient today than before, and this new contract did not increase or decrease the supplier's market share since this company had been working for the city for years.

- Hospital Catering service: The solution procured allowed the Hospital to provide a high quality, catering service, with menus catering for the diverse needs of 900 patients in a much more healthy, hygienic and cost-efficient manner.

The third case, hospital catering, though successful in its own terms, created scope for litigation by unsuccessful bidders. It would be a shame if a litigious procurement culture closed down the scope for innovative approaches. In the next section we explore further whether such an outcome is more likely in a small country environment.

The Steam explosion pilot plant shared with the X-Road case the elements of a lead market for the firms involved. In both cases the experience gained through the initial supply provided experience which could be used to gain future contracts and export markets.

We have included the Iceland case-study even though it did not result in an innovation (other than a minor service innovation in terms of more efficient refuse collection). The aim to use methane generated from rubbish as a fuel for the trucks was not achieved. It could be included that the incentive offered to bidders was insufficient. The actual size of this incentive depends upon the relative calculation of social return from green fuel. However, from an innovation perspective it could have made sense for other authorities and the supplier to contribute to this premium so as to establish the technology for use in other municipalities.

## Key Lessons Learnt from all the Case Studies:

- **Attention to Values: Ethics, confidentiality and transparency**

The competitive dialogue procedure led to appeals by unsuccessful bidders. This requires transparency in the process and the need to ensure that the process is conducted in accordance with ethical principles.

X-Road is a strategic technology and certain confidentiality rules should be followed, to protect the interest of the public.

The interests of all the stakeholders should be balanced to guarantee success.

- **Managing risk**

Risk was managed through careful definition of legal, financial as well as technical requirements of the procurement process. The aim was to minimise the risks but only to the degree that would not hinder the freedom of the provider to introduce innovative solutions. The desired effects were mostly achieved, through contracting of a well-established local provider of high-tech solutions.

- **Technical Expertise**

The implementation of new technologies may come across certain opposition. Specific strategies are needed to overcome this.

Constant monitoring and assessment of product development is needed.

The main difficulty of this case was the Supplier's lack of experience in constructing complicated (high pressure, high temperature) individual pilot plant without any industrial prototypes. In general they managed it well and the difficulty did not affect the outcomes.

Like any innovative solutions, it was not easy to implement the product in the organisation but the difficulties were not insurmountable. No reference groups were used.

- **Joint Procurement**

Joint procurement between different ministries could have cost-saving benefits.

# 2 Conclusions & Recommendations

These country case studies indicate that certain sectors do open up certain opportunities for small countries to experiment with innovation procurement. It is interesting to note that the ICT sector is prominent whilst there is only one case study from the health sector which is usually a high potential sector for PPI. Even as the project was being implemented and the case studies prepared, interest in the approach has increased with a request from Estonia to convene an information event on innovative public procurement. This was combined with the Project Meeting held in Tallinn in November 2010.

Interest is likely to increase further as a result of the Innovation Union initiative and other supporting measures from the European Commission. Interest and expertise in this approach are also likely to spread from some of the larger countries who have longer experience in this area, though they too are in a learning mode.

It is also the case that the small countries have some background upon which to build their capability. Some of the more challenging innovation-friendly procurement procedures have been used (competitive and technical dialogues) and both the case-studies and the survey have yielded examples of innovation emerging from procurements, even though much of that innovation was incremental or architectural (combining existing technologies in novel ways and/or in new situations). Survey data indicated some evidence of procurement linked to innovation in all of the countries. Future opportunities are also perceived.

In some respects the small countries have dissimilar approaches to public procurement. There is a greater tendency to have centralised structures but this is not uniform in all cases and joint procurement is occasional and normally limited to the Ministry level. There is also some variation on how prescriptive procedures are across government. No country studied has established a strategic policy on innovation procurement so far, despite various attempts and initiatives. This can be contrasted with a more institutionalised approach to green procurement.

Not surprisingly, human capacity to handle more complex innovation-related procurement has emerged as a key constraint in all countries. In some countries the capacity of local suppliers to respond is also questioned, linked to lack of local competition.

All the success cases are in the ICT sector and there may be reasons for this. The barrier to entry may be lower in this sector for SMEs, making it easier for them to operate in the area of innovative software. On a smaller scale, there is a higher chance of success.

While niche markets for small countries were widely seen as an opportunity the broader advantages of small size do not yet seem to have been exploited, including better coordination and easier aggregation of demand. Small countries can benefit from cooperating with each other by sharing details of processes for example tender specifications to favour innovation. Regulations and guidelines can be shared at European level. More than one small country could have joint order, e.g. energy or disposal systems. Whether we can help countries work to accelerate the lead market process and find way of disseminating solutions more effectively.