A central question for cities when responding to governance challenges is how to procure and finance innovation driven solutions.

Public procurement can be a significant driver of market innovation. As a major consumer, the public sector has considerable potential to act as a demand side driver, encouraging innovation in both products and services.

There is no shortage of budgets and finance streams in cities. The key is how these budgets are aligned to innovation. An awareness of the potential for technologies to transform city services will help cities to view mainstream budgets as a mechanism to support innovation.

Budget savings are often the most significant factor motivating new practices or initiatives in cities and yet, many departments and teams work in siloes making the wider process challenging. Investing in Smart city solutions has the potential to save costs or even generate revenue for cities. Cities need to engage Smart thinking around the use of existing budgets, new funding opportunities and their wider impact.

Municipalities have a low-risk approach and Smart finance is often seen as high-risk. To make progress, cities need to carefully consider the use of tools like cost-benefit analysis and return on investment as part of their case making. These tools help to articulate the often hidden, value adding services that exist when data and connected technologies are used (e.g. mobility as a service.) This bonus element makes a stronger case for private investment with public funding.
Key Issues for SmartImpact partners

How to engage with the market?
Cities need new ways to purchase innovation driven solutions. Standard procurement specifications do not provide the agility and flexibility needed to deliver non-standard goods and services. Engaging with the market in a new way and developing an innovation procurement approach requires a real step change.

How to reduce risk?
Funding innovation is slow because an investment opportunity normally needs to be secure and low-risk to attract attention. With a limited track record, higher complexity and a greater number of stakeholders involved, many Smart projects are seen as unstable and risky.

How to reduce upfront costs?
Smart technology rarely deals with one discrete area. By its connected nature it is more complex and entails investment into several connected products, often needing calibrating for local circumstances. This raises the overall costs associated with concept design, managing stakeholders and contracts.

How to leverage synergies between departments?
The lack of cross agency and departmental working is a main barrier to driving effective procurement outcomes. A large scale lighting LED upgrade, for example, run by one department, will generally focus on energy savings. However, there is opportunity to deliver additional outcomes for example, environmental monitoring benefitting multiple departments with better outcomes for citizens.
Lessons learnt from SmartImpact partners

SmartImpact cities have found ways to drive investment from both public and private money towards innovative and clean technologies, often as pilots. Pilots are good ways to trial solutions; however, demonstrating proof of value and pathways to mainstream takes time.

Too many Smart city initiatives begin and end with pilots that fail to validate value. The focus can often be on ‘proof of concept’ when, in fact, it is ‘proof of value’ that is needed. Cost benefit analysis (CBA) is an important tool in demonstrating proof of value and holistic cost benefit analysis for Smart city investments should account for social and ecological benefits.

Technology, infrastructure and services in cities are subject to procurement processes. Processes are often not suitable for innovative technologies and services because of the constantly evolving market. Innovation procurement methods have the potential to overcome some of these challenges.

Cities also need to be aware of the options and opportunities to finance Smart city developments and they need the knowledge and capacity to exploit them.
Procurement and finance in Smart urban innovation

Existing business models, finance and funding instruments and procurement schemes do not always fit today’s city challenges. The procurement of innovation and the use of alternative procurement instruments help cities invest in problem solving, rather than procuring pre-described technologies.

There have been innovation procurement successes demonstrated using Pre Commercial Procurement (PCP) in Dublin and Public Procurement of Innovation (PPI) in Eindhoven.

Pre Commercial Procurement (PCP) helps to develop R&D and innovation-based solutions for current city challenges. In these circumstances the instrument is directed at solutions that are not readily available on the market. PCP was used in Dublin city to find solutions that would improve cycling conditions, to detect illegal dumping of waste and avoid the obstruction of gullies. It is important to define generic criteria to foster and encourage the creativity of the solution developers.

Public Procurement of Innovation (PPI) helps cities to procure innovative solutions that are already available on the market, but maybe not known to the procurer or those that need to be adapted to local circumstances. PPI was used by Eindhoven to specify an innovative purchase of Smart street lighting and to make use of the extra benefits this connected lighting offers. PPI involves engagement with the market prior to defining a tender. This can happen in the form of competitive dialogue or negotiations.

The lack of capability in cities to identify innovative solutions, with few dedicated resources, is a deficit that needs to be addressed. Cities need to create better links with innovators to understand the potential for innovative solutions and their finance implications.

The city of Porto has invested in its eco-system via ScaleUp Porto, which supports and promotes activities, programmes and strategies to attract investment in the city. CityVerve has allowed Manchester to work closely with innovation companies.

The fragmentation of service delivery due to the cross cutting nature of innovation means that the budgeting and procurement of services sits outside normal organisational structures. For example, the procurement of lighting in Eindhoven, was a major project involving a number of processes including a PPI and the Competitive Dialogue process for tender. The principle being that the market party is the expert. Eindhoven began with a market consultation to investigate the feasibility of the roadmap light tender. They selected three market parties and held discussions with them on topics such as providing open access to data, business models, securing continuous adoption of innovations and involvement of citizens before selecting a consortium to deliver the project.

Cities need to better understand the financial opportunities available to them. There are many options ranging from traditional lending through to crowdsourcing or citizen investment. These include looking at alternative options such as combining different sources of funding and diversifying risk, while enabling benefit sharing across a number of parties. For example: green bonds designed to facilitate earmarked funding for sustainability focused projects; Public/Private Partnerships (PPPs) co-funded by private and public sector stakeholders; civic crowdfunding; venture capital or social impact bonds. A key take away is that the city needs to come-in as an entity that is able and willing to take the first potential loss of a Smart city investment.