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Leveraging Public Procurement to Drive Local Innovation

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Executive Summary

Public procurement represents a powerful yet underutilised lever for governments to drive innovation and address complex societal challenges. With public expenditure on goods and services accounting for 10-15% of GDP in OECD countries (OECD, 2023), strategic use of this purchasing power could catalyse the development and adoption of cutting-edge solutions by the private sector. This briefing explores the theoretical foundations and real-world evidence for using procurement as an innovation policy instrument.

Conceptually, public procurement can "pull" innovation by providing assured demand to justify private R&D investments. Public organisations also act as lead users, allowing pivotal interactions between buyers and producers. Additionally, centralised purchasing helps overcome market failures hindering innovation. While techniques like pre-commercial procurement exist, barriers such as risk aversion and siloed budgets hamper practical implementation. Drawing on literature and case studies, this briefing examines factors influencing the innovation impacts of procurement, including scale, technical capacity, and political factors.

It then shares international examples of public procurement driving sustainable innovations across sectors like healthcare, energy, and transportation. The briefing also highlights how emerging technologies are enabling more transparent, efficient and innovative public procurement practices. Finally, it discusses the UK's new Procurement Act as an opportunity to embed innovation in public purchasing. Overall, this piece of work aims to provide insights for policymakers on leveraging procurement as a catalytic innovation policy instrument.

Introduction

The Local Policy Innovation Partnership (LPIP) Hub, funded by the ESRC, aims to support local authorities and partners in addressing social, economic, and environmental priorities through innovation and the adoption of evidence-based policies. A key theme for the LPIP Hub is promoting innovation, which involves the discovery, development, and diffusion of new ideas, technologies, and ways of working. Innovation is critical for driving productivity and economic growth, and for tackling complex policy challenges.

One mechanism highlighted for supporting innovation is through public procurement and purchasing. Public procurement of innovation or 'innovation procurement' refers to a situation when public authorities use their buying power to purchase new innovative solutions, acting as a customer and creating market opportunities for businesses developing cutting-edge products and services. This can help drive research, development, and commercialisation for suppliers while also allowing the public sector to modernise by finding innovative and creative solutions to policy problems.

According to the UNECE Policy Handbook (2023), public procurement can drive innovation in several key ways:

- **Acting as a lead customer** - By guaranteeing sizeable purchases of innovative products or services, governments can incentivise companies to invest in developing new solutions and help innovators cross the "valley of death" between R&D and commercialisation.
- **Catalytic procurement** - This is where government acts on behalf of end users to procure innovative solutions to pressing societal challenges and needs. This stimulates innovation even in areas where government is not itself the end user.

- **Functional procurement** - Specifying the problem to be solved or outcome required, rather than prescribing the technical solution, provides flexibility for suppliers to propose innovative approaches.
- **Pre-commercial procurement** - Funding the R&D phase for developing innovative solutions, without committing to purchase the end product, provides incentives for innovation while sharing public and private risk.

There are many examples from Europe and elsewhere demonstrating the power of public procurement to drive sustainable innovations in sectors like transport, telecommunications, energy, and health. With the right approach, public procurement can be a strategic tool to develop innovative domestic firms and address pressing societal challenges. To implement such innovation-enhancing procurement (IEP), the Policy Handbook recommends steps like reviewing legal frameworks, building capacity of procurement officials, fostering partnerships between stakeholders, and exchanging best practices.

However, doing so successfully requires overcoming challenges like risk aversion, lack of capabilities, and misaligned incentives. Strategic approaches, capacity building, partnership models, and legal reforms may help unlock procurement's innovation potential. Overall, public procurement represents a significant yet underutilised opportunity for governments to stimulate innovation, address socio-economic goals, develop domestic firms, and enable the transformative power of emerging technologies. However, it requires coordinated efforts to adopt strategic, innovation-oriented approaches tailored to national contexts.

This briefing provides an overview of the theory and evidence on public procurement as an innovation policy lever, shares case examples of successful implementation, and offers recommendations for policymakers and public sector leaders looking to harness procurement as a strategic driver of innovation.

Other Innovation Policies

A 2022 report published by the Centre for Economic Performance (CEP) suggests that a mix of R&D policies is needed to increase research and innovation in the EU (Teichgraeber and Van Reenen, 2022).

“R&D policy” is an overarching term which includes research and science and technology policies, and overlaps considerably with “innovation policy” (Doern and Stoney, 2009). Innovation policy is much broader than R&D policy, since it also includes commercialisation and various demand-side policies (Georghiou et al., 2014).

A review of the innovation literature found a mix of policy instruments are needed to help channel resources to firms in order to incentivise or reward innovation efforts (Bruce and de Figueiredo, 2020). They include:

1. Direct R&D support: Subsidies on R&D projects (i.e. sharing the cost of R&D) provide finance in the form of grants or providing guarantees to others; public procurement (buying or promising to buy goods or services that result from business innovations); and tax credits (Guellec and van Pottelsberghe de la Potterie, 2003). These are otherwise referred to as ‘downstream market incentives’ or ‘demand pull’ and aim to increase the size of markets (Nemet et al., 2018)
2. Indirect R&D support: The funding of the operation of public colleges and universities; paying third parties to provide services that firms require to innovate (such as government labs); transfer of technology sponsored or held by governments, or preferential access to data such as health or mobility records; supporting knowledge networks. These ‘technology push’ policies increase the availability of new knowledge.

Technology push and demand pull policies are both necessary, given the substantial variation among technologies and between industries (Barbier, 2020). For instance, technology push is important in early stages and demand pull in later stages of the R&D process; meanwhile incremental innovations depend on demand pull while radical innovations require technology push. In addition to a mix of policy instruments, there is also a need for R&D policies to be integrated, not just with closely connected areas such as HE policy and innovation policy, but also with policies for other sectors, including industrial and economic policy, health policy, environment policy, and defence or security policy (Martin, 2016). Public procurement is an example of a demand pull policy which should be part of a policy toolkit.

Public Procurement as an Innovation Policy Tool

Public procurement accounts for 10-15% of GDP on average in OECD countries (OECD, 2023) and provides a mechanism for the public sector to act as a lead adopter and demand catalyst for innovative new solutions. There are several theoretical mechanisms linking procurement and innovation, including demand pull, interactions between public lead users and producers, and helping firms overcome market failures. The theoretical basis linking public procurement and innovation is rooted in several concepts identified by Dale, L., & Bryson, J. (2012). Climate market accelerator – Pilot study: Public procurement and innovation.

- Demand can "pull" innovation by providing guaranteed markets to justify investments in R&D (Edler and Georghiou, 2007). Public buyers with sufficient scale can constitute "early markets" for innovations (Georghiou, 2006).
- Public organisations are often "lead users" whose needs foreshadow general demand, making user-producer interaction pivotal for successful innovation (Lundvall, 1988; Von Hippel, 1986).
- Public procurement can help overcome market failures like scattered demand and high transaction costs (Edler et al., 2005).
- Scale of demand: Sufficient orders to achieve economies of scale and offset risks (Uyarra & Flanagan, 2010). Larger, aggregated procurement provides incentives for firms to invest in R&D and innovation by guaranteeing production levels. This helps firms benefit from economies of scale and offsets uncertainty.
- Technical capacity: Buyers must have expertise to specify performance requirements and evaluate solutions (Rothwell, 1984). Public organisations with greater technical expertise are better able to specify performance requirements and evaluate innovative solutions. This facilitates innovation.
- Political factors: Elected officials tend to prefer low-risk, short-term projects and spreading contracts across regions (Dalpé, 1994).
- Industry and product characteristics: Procurement works best as an innovation stimulant in R&D-intensive industries and for products in the early stages of development.

Awareness of the value of public procurement in stimulating innovation is rising. However, actual implementation lags behind with few practical guides (Kahlenborn et al., 2011). There are several barriers in realising the innovation potential of procurement in practice. These include issues in the public sector such as risk aversion, lack of capabilities, budget fragmentation, and legal uncertainties. The literature identifies several factors that can affect the ability of public organisations to use procurement to stimulate innovation, including:

- While various techniques like pre-commercial procurement and performance-based contracting can make procurement more innovation-friendly, evidence indicates that uptake remains still limited. To strengthen procurement as an innovation tool, the report (Dale and Bryson, 2014) recommends actions like:
- Adopting strategic approaches that embed innovation goals into procurement planning
 - Building technical and managerial capacities in procurement units
 - Fostering partnerships between procurers, suppliers, and other stakeholders
 - Exchanging international best practices
 - Allocating dedicated budgets for pre-commercial procurement

Practical examples of successful implementation of public procurement remain valuable for policymakers and public buyers looking to leverage procurement to drive innovation. Thankfully, a range of case study collections provide great examples of public procurement being used to stimulate innovation across diverse sectors and geographies:

- The European Commission's Buying for Innovation (B4I) database contains over 100 case studies of successful innovation procurement across Europe ([The European Commission, 2022](#)). Examples cover areas like healthcare, construction, energy, transport, and more.
- The Innovation Procurement Brokers (IPB) network has curated case studies on innovation procurement implementation from different countries and sectors ([Innovation Procurement Platform, 2020](#)). These provide practical insights into the processes and outcomes of real-world cases.
- The U.S. General Services Administration's Office of Acquisition Management showcases innovative procurement practices in the federal government through their case study collection ([Procurement Innovation Resource Center, 2024](#)). Topics covered include utilising new technologies and partnering with small businesses.
- Nordic Innovation has compiled case studies of innovation procurement projects in the Nordic region across areas like health, energy, and smart cities ([Jungsberg et al., 2023](#)). These demonstrate how procurement is being used to drive innovation regionally.
- Urban Living Labs (Voytenko et al., 2015) and Open & Agile Smart Cities ([OASC, 2024](#)) have case studies of how cities globally have implemented innovation procurement to address challenges related to energy, waste, mobility, and smart city solutions.

These case studies provide valuable insights into how public procurement can be undertaken successfully across different contexts stimulating innovation. By highlighting practical examples, they help provide models for public buyers looking to harness procurement to drive innovation and social benefit. As illustrated by these examples, purchasing power gives governments tremendous potential to shape markets and boost innovation through strategic procurement practices.

Tech-Driven Procurement

Public procurement as an innovation policy tool has now been driven by new technologies and innovative approaches. According to a recent report from Connected Places Catapult, titled "The Art of the Possible in Public Procurement" (Harbour et al., 2024), emerging tools like artificial intelligence and data analytics have huge potential to improve procurement outcomes. The report highlights several case studies of technology-enabled procurement. For example, machine learning algorithms helped detect bid rigging in Brazilian government auctions, leading to major cost savings. The UK government used analytics to identify over \$80 million in potential savings on energy contracts. Other applications include blockchain for contract management and the Internet of Things for smarter asset monitoring.

According to the report, some of the key potential benefits of tech-driven procurement include:

- Increased efficiency and cost savings
- Enhanced risk management
- More transparency and accountability
- Higher quality service delivery

Realising these benefits requires overcoming challenges around risk aversion, lack of technical skills, and resistance to change among procurement officials in public organisations. The report argues that culture change and capacity building are imperative and advocates for integrating procurement into strategic planning to drive innovation. It encourages expanding criteria beyond lowest cost bidding. Embedding social value and sustainability goals into procurements is also recommended. The report shares several best practice case studies that demonstrate the power of innovative procurement strategies. With the right vision and execution, technology-enabled procurement can become a major lever for governments to improve services, support local business, and drive social progress. It is imperative to enable the implementation of these on the ground (see the work by Conrad).

An Opportunity for Innovative Procurement Strategies: the UK's Procurement Act 2023

The UK recently passed the Procurement Act 2023 (Cabinet Office, 2022), which provides an opportunity to accelerate the adoption of tech-driven transformative procurement practices. The Act marks an important shift towards a more modern, simplified procurement system in the UK. Some key features of the new Act are as follows:

- Consolidates over 350 existing regulations into a single, unified regime that is quicker, simpler, and more transparent. Removes duplication across different sectors.
- Creates a central digital platform for supplier registration and viewing procurement opportunities. This will help small businesses access contracts.
- Requires contracting authorities to deliver value for money, maximise public benefit, enhance transparency, and act with integrity.
- Allows flexibility in competitive tendering through a new "competitive flexible procedure", so procurements can be tailored to specific needs.
- Makes it easier to exclude or debar suppliers which pose unacceptable risks, such as those involved in modern slavery. Introduces a public debarment list.
- Strengthens contract management requirements like on-time payment of suppliers and performance assessments.
- Emphasises transparency through required notices at all stages of procurement.
- Retains certain exemptions such as those for defence, national security, and healthcare services.
- Gives oversight authorities more power to investigate compliance and enforce the new rules.

Conclusion

Public procurement represents an important opportunity for governments to stimulate innovation and address pressing societal challenges. This briefing has provided the theoretical basis linking procurement and innovation, including its place within the wider policy toolkit context. It has also examined factors shaping the innovation impacts of procurement, including scale, capabilities, political dynamics, and legal contexts. The theory supporting public procurement as an innovation policy tool is strong. Nevertheless, whilst techniques exist to make procurement more innovation-friendly, barriers like risk aversion and siloed budgets limit uptake in practice. Realising the full potential of procurement as a strategic innovation policy requires concerted efforts to implement supportive frameworks, develop capable institutions, and promote cultural change amongst producers.

The Local Policy Innovation Partnership (LPIP) Hub has a potential role to play in enabling local authorities to leverage procurement as a driver of innovation. For example, the LPIP Hub will gather evidence and assess the transferability of findings on successful innovation policies aimed at capacity building, best practice sharing, and collaboration. These three outcomes are all needed to unlock procurement's innovation potential at the local level. Additionally, the LPIP hub will build connections between different policy stakeholders, which is needed to help position procurement as a strategic driver of innovation and positive economic and social change.

In summary, procurement holds significant promise as a demand-side innovation policy lever, if implementation challenges can be overcome through appropriate strategies, capacities, incentives and leadership. Progress will require sustained efforts by policymakers, public sector leaders, and other stakeholders to unlock the full innovative potential of public purchasing power. The ideas and evidence presented in this document and ongoing work by City-REDI aim to support these continued efforts to position procurement as a driver of innovation and positive economic and social change.

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