

A framework for innovation and public procurement: technologies, strategies and place

Elvira Uyarra, Kieron Flanagan

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Introduction/rationale

- Public procurement increasingly considered a useful tool to stimulate innovation as well as to advance other policy goals
 - Both at EU (Aho et Al, 2006; European Commission, 2007), and at national and regional level

Introduction

- This is not a new idea
 - Public procurement key factor for high-technology sector development in the US (Mowery, 1980)
 - Industrial policy tool in the 80s (Rothwell, 1984)
 - Renewed interest in the 90s as a means to boost technological innovation in Europe (Edquist et al, 2000)
 - Recently as a means to stimulate Innovation more broadly (Edler and Georghiou, 2007)
 - Policy through procurement (sustainability, social policy, regeneration, etc.) (McCrudden, 2004; OGC, 2010)

Introduction

- However, the understanding of the relationship between public procurement and innovation still limited, in three respects
 - Variety of goods and services procured by the public sector
 - Variety of innovation effects and types of innovation
 - Spatial dimension of procurement

Objectives of the paper

- Develop a framework and a typology to understand the interplay between public procurement, innovation and place (Uyarra and Flanagan, 2010)
- Use framework to characterise particular examples of innovation in public procurement in local government
- Assess current practices, identifying barriers preventing innovation
- Methodology: 25 in-depth, face to face interviews in the 10 local authorities in Greater Manchester. (NESTA, 2010)

Framework

- Existing typologies developed to understand innovation and procurement based on aspects such as:
 - The end users of the innovation, the strategic objective of procurement policy, innovation life cycle (e.g. Edler and Georghiou, 2007; Rothwell and Zegweld, 1981, Edquist and Hommen, 2000)
- No typology based on the nature of the *actual* goods and services procured.

Framework

- Supply networks differ according to the type of product (Fisher, 1997; Lamming et al, 2000)
- Supplier portfolio models (Kraljic,1983) suggest that not all suppliers should be dealt with in the same way.
- Literature on Complex Product Systems (CoPS) (Hobday, 1998): differences in the dynamics of innovation in CoPs vis-à-vis mass produced commodity goods
- Focusing on products helps us understand firm's use of technological competencies in products and processes to meet the specific needs of users.... and therefore to tailor policies better.

Framework

- We use Storper (1996) framework ‘innovation as collective action’: “different products will ‘demand’ different kinds of innovation systems (p.762) “
- Identifies 4 types of products, each associated with fundamentally different forms of markets and technologies
- Each product associated with
 - Different forms of competition
 - Innovation problem
 - Geographical patterns of relationships

Storper's (1996) worlds of production

Specialised products

Standardised products

<p>Basis of competition: quality Origin of innovation: user-producer relations (even co-invention) Interdependencies: traded+untraded Territorial proximity <i>The Interpersonal world</i></p>	<p>Basis of competition: price and speed of response Origin of innovation: demanded Interdependencies: traded and untraded Territorial proximity <i>The Market world</i></p>
<p>Basis of competition: learning Innovation dependent on extreme specialisation of key inputs Interdependencies: traded Little proximity <i>World of Intellectual Resources</i></p>	<p>Basis of competition: cost (by high volume production) Innovation: Innovation based on continuous standardisation Interdependencies: little, traded <i>The Industrial World</i></p>

Uncertainty

Predictability

Economies of variety

Economies of scale

Dedicated products

Generic products

Framework

- From the demand side (when is a key buyer), the public sector
 - Can reduce uncertainty through consolidation of fragmented demand (common specifications, bundling of contracts,...)
 - Alternatively it can demand a more adapted product or solution for itself or the end user
 - It can provide incentives for suppliers to innovate (technical dialogue, performance based specifications, incentive contracts, design contests, use of IP,...)
 - Or allow greater standardisation

Framework: Procurement Typology

	Specialised production process	Standardised production process
Dedicated market	Experimental procurement	Adapted procurement
Generic market	Technological procurement	Efficient Procurement
	<i>Economies of variety</i>	<i>Economies of scale</i>

Framework: Procurement Typology (Cont.)

	Adapted procurement	Technological procurement	Experimental procurement	Efficient procurement
<i>Role of the public sector</i>	Niche user	Large/sophisticated customer	Experimental/lead user	efficiency-driven customer
<i>Dominant motivation of procurement /award criteria</i>	Adaptation/ customization to specific needs <i>The best/better adapted solution</i>	Fitness for use, value for money <i>The best available/ most efficient solution</i>	Functional product performance <i>The most innovative solution</i>	Price, volume <i>Value for money</i>
<i>Product/ service type</i>	Diverse designs, customized	At least one product design	Emerging design, prototype, pilot	Mostly undifferentiated, standard
Potential Innovation type	Market Niche	Architectural	Radical	Incremental
Innovation-related risks on the supply side	Market uncertainty Fragmented supply	Insufficient/ unreliable demand to justify investment	Market uncertainty Poor user-producer communication Insufficient incentives (e.g. IP protection)	Obsolescence. Overdependence on public markets.

Examples from Greater Manchester

- 'Efficient' procurement
 - Example: Use of procurement cards to automate payments.
 - Innovation emerged in processes and in the supply chain in areas such as repair services and school meals
- New technical solutions (experimental procurement)
 - Process of co-invention between procurers and firms. Generally small, localised, one-off innovations
 - Examples
 - New recycling solutions
 - The slipper lighting column replacement solution
 - User-producer interaction, Importance of co-location
 - Technical knowledge of the procurer (but knowledge of markets)
 - Challenges at the diffusion stage. Problems of too adapted, idiosyncratic innovations.

Examples from Greater Manchester

- Adapted procurement
 - Examples: commissioning of more personalised services (e.g. social care, child care)
 - Strong interaction with end users to improve services (even co-design)
 - Localised interaction
 - Uncertainty in demand preventing development in markets
- Technological procurement
 - Large, technologically intensive, products and services
 - Examples: large infrastructure projects (construction, waste management)
 - Specialised knowledge of the market, specialist procurement knowledge (risk management), not so much technical knowledge
 - Large demand and incentives (e.g. risk sharing) in order to ensure the best technical solution.

Barriers

- Procurement practices
 - Transparency, standardisation of procedures, advertising
 - Internal standard procedures / decentralised procurement
 - Internal communication (with service areas, with commissioners of services)
 - Poor use of buying consortia
- Sharing of information, diffusion across procuring organisations ('Not Invented Here' syndrome)
- Competences and skills of procurers (esp. Commercial skills)
- Conflicting policy goals and rationales
- Poor use of incentives to innovate

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Definitional problem

- Procurement of innovations
 - Procurement of new goods and services
- Innovative procurement
 - Procurement goods and services better, in a more innovative way
- Innovation promoting innovation
 - Procuring better goods and services
- Policy through procurement
 - Procurement a better, more sustainable, outcome