

Demand Oriented Innovation Policy

Presentation at the Six Countries Programme
INNOVATION AND PROCUREMENT WORKSHOP

Manchester, November 16, 2005

Jakob Edler

Fraunhofer Institute for Systems and Innovation Research
jakob.edler@isi.fraunhofer.de



Structure

- **Definition and Typology of Demand Oriented Innovation Policy**
- **Justification and Leverage**
- **Demand orientation in public policy**
- **Pitfalls and Bottlenecks**
- **Critical Factors of Demand Oriented Innovation Policies**



Demand oriented Innovation Policy - Definition

Set of public measures to

- induce innovations and / or
- speed up diffusion of innovations,

through

- increasing the demand for innovations and/or
- define new functional requirement for products and services

➔ often linked to sectoral policy aims (e.g. sustainability, energy efficiency, infrastructure, health system)

➔ *Public Procurement* as part of a wider policy approach



Public Procurement as part of a wider approach: A Refined Typology of Demand Oriented Policy

- 1) **Public Demand / Procurement**
 - General procurement
 - Targeted Areas, State as Lead User of Innovations
- 2) **Support of private demand**
 - Cooperative and catalytic procurement
 - Demand subsidies
- 3) **Enable / Marketing**
 - Adjustment of training programmes, curricula etc.
 - Awareness Measures,
 - Labelling / Marketing (eco-labels)
- 4) **Regulation**
 - Norms for product information
 - Norms as for performance of products and services
 - Legal security for usage of new products/services (electronic signature)
- 5) **Systematic Approaches:**
 - Combination of demand measures
 - Combination of supply and demand, e.g. Lead Markets (e.g. ambitious regulations in connection with support programmes)

Across the board of demand oriented policies: little systematic knowledge



Justification and Leverage



Justifications of Demand Oriented Innovation Policies

- Market failures
 - Information problem:
 - Lack of mutual understanding producer – user
 - Lack of awareness, trust (users)
 - Lack of skills (users)
 - High entry costs, but high scale and network effects likely
- Lead Market potential
- Sectoral Policy Needs
 - More effective, more efficient public service
 - Public need, normative policy goal



The Innovation Leverage of Public Demand (1)

The size of public demand

- Public Demand in Europe: 16 % of GDP

State as lead user:

- Bearing of high entry costs
- Signal (demonstration of functionalities) to private consumers / Awareness
- Acceptance of innovations in combination with sectoral policy aims (danger?)
- Spill over:
 - Complementary innovation (network effects)
 - Speed up of Diffusion
 - „Upgrading“ of technological competition



The Innovation Leverage of Public Demand (2)

Direct effect on suppliers:

- Clear market expectations, security (return on innovative investment, contract before innovation activity)
- Critical mass
- More near to market R&D

Inter-active specification of functionalities:

- Common „discovery“ of possibilities
- Common learning (supply and demand)
- Risk reduction through interaction and discourse



Demand orientation in public policy (defence excluded)

- Only UK with comprehensive, strategic approach as for innovation policy :
 - Procurement as integrated part of horizontal Innovation Strategy
 - Specific co-ordinated Activities in Sectoral Procurement
(Construction sector, market intelligence, discourse moderation, supply-demand)
- Mixed signals: Some had turned their backs, now renewed interest
- Many examples in sectoral policy – but not designed/sold as innovation policy
(demand subsidies, regulation (energy))
- Scandinavia, 1990s: Market Creation Programmes for Energy Efficient Consumer Products
- USA: dual use (defence) , energy, various activities at state level (e.g. Toll System)
- Netherlands: PIA Approach
- Germany: innovation offensive, re-discovery (not operative yet)
- EU: A new offensive, various measures, procurement regulation (Competitive Dialogue); general awareness measures (see presentation by José Ramon Tiscar)



Demand Oriented Innovation Policy: Pitfalls and Bottlenecks

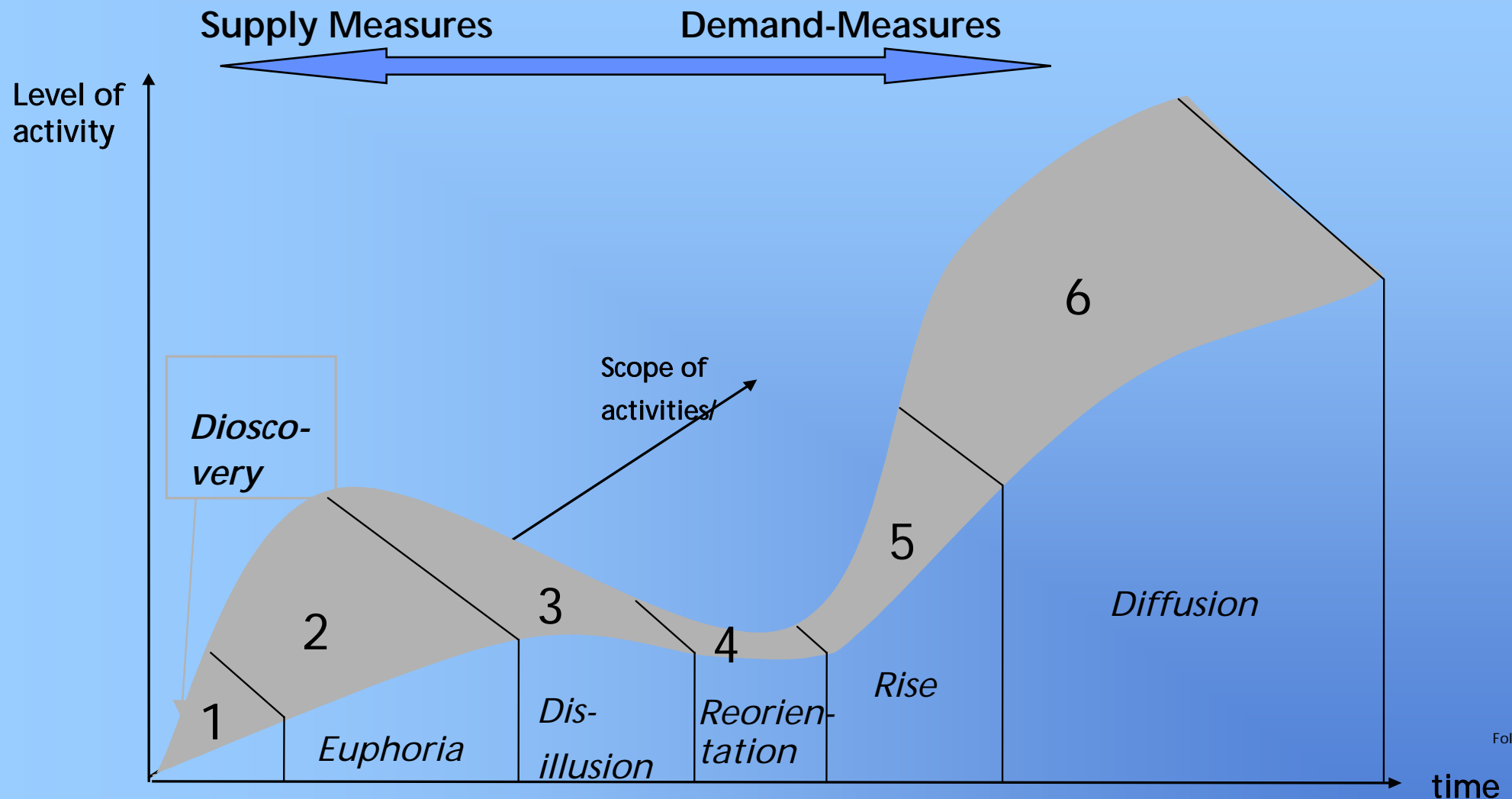


Pitfalls and Bottlenecks - *General*

- Lack of co-ordination
Innovation policy – Procurement Policy – Sectoral Policy
- Lack of Awareness in Sectoral Ministries
(goal attainment/better service and procurement)
- Systemic approaches?
 - Neglecting public action to spur private demand
 - Neglecting failures and potential in private demand
 - Lack of sound justification of public action: what is the market failure?
 - Over-Complexity: where are we on the innovation cycle?



Over-Complexity: Innovation-Cycle and Policy Approaches



Folie 12

Source: FhG-ISI 2005 (Dreher, Frietsch, Schmoch, Edler)



Pitfalls and Bottlenecks: *public demand*

- Risk aversion and problematic incentive structures on all levels
 - Departments: delivery of policy
 - Agencies: cost of failure
 - Procurer: individual careers
- Potential conflict: efficiency vs. innovation (initial costs)
- Privatisation: leverage diminished?
- Fragmentation of public demand (critical mass to be mobilised?)
- Who benefits?
 - Innovation vs. regional/local economic support
 - National Champion Policy – International Firms
 - SME disadvantaged (little power in negotiations, interactions)
 - Over-dependency on specialised suppliers
- Readiness of business?



Critical Factors of Demand Oriented Innovation Policies

General

- Strategic integration of innovation into all public policy
- Combination of sectoral policy aims and innovation
- Horizontal and vertical coordination / strong leadership
- More evidence-based innovation cycle orientation

Procurement

- New Rationale: Procurement as Part of *Innovation policy*
 - Risk with the state
 - Patience and backbone
 - Industry as partner – early interaction needed (such as „competitive dialogue“)
 - Functional targets (Performance), life cycle costs ("m.e.a.t.")
- Build up of expertise in public policy-making
 - Knowledge on public needs, definition of sectoral strategies (includ. Foresight)
 - Knowledge on supplying markets (structures, potential, technological feasibility)
 - Knowledge on spill over effects (networks, diffusion)
 - Legal expertise (new forms of contracts, life cycle, risk)
- Systemic Approaches: Combination with other demand and supply measures



Thanks for your attention

Jakob Edler

Fraunhofer Institute for Systems and Innovation Research, Karlsruhe

j.edler@isi.fraunhofer.de

www.isi.fhg.de

slide 15



Annex: Some Examples

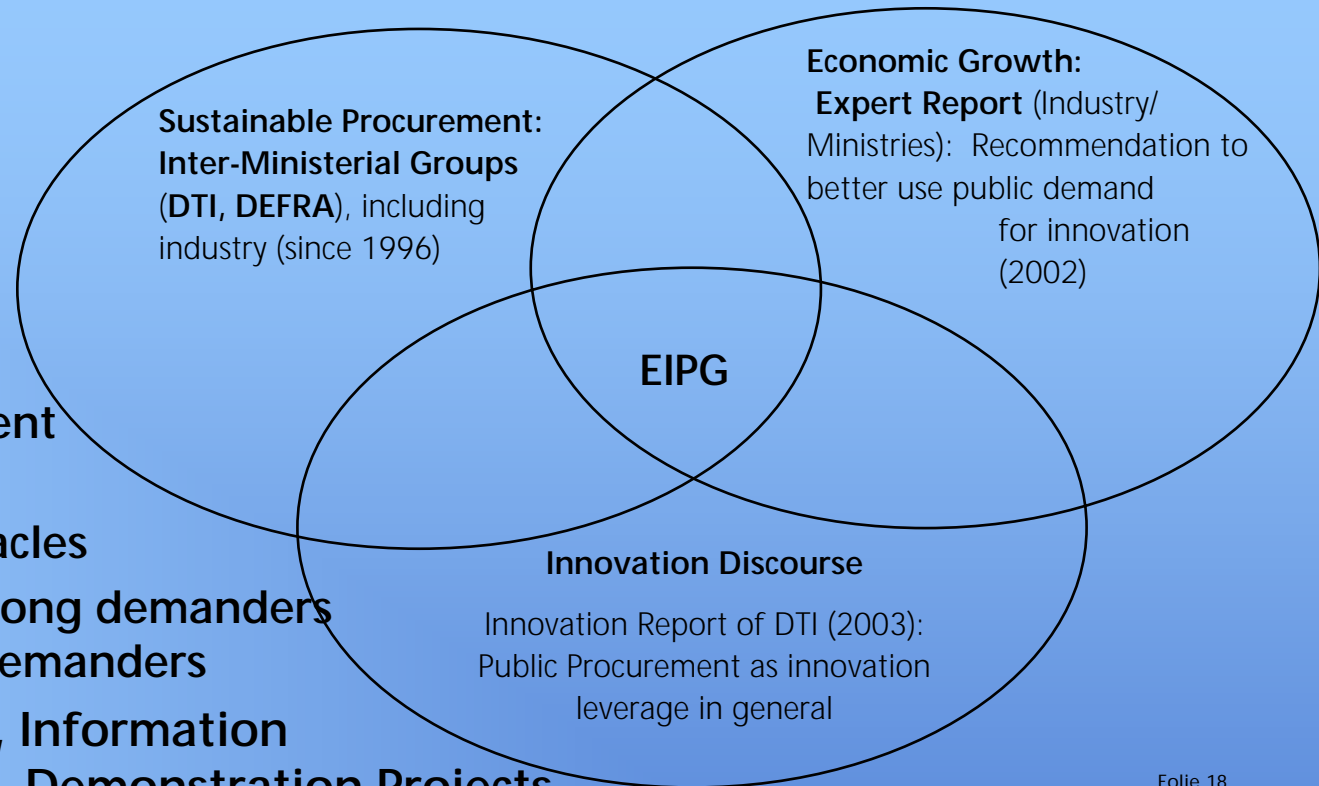


Example 1: Procurement as Innovation Policy Tool: The strategic approach (attempt?) of the United Kingdom

- Public Demand and Innovation integrated in strategic documents – high level of importance and visibility (DTI, Cabinet Office, other ministries)
- Objective: all public procurement to be defined as innovation policy tool *also*
- Inter-ministerial working groups - Integration of ministerial top level
- Integration of OGC (Kelly Report) and DTI activities (Innovation Report)
- Connection of strategic and operative level
- Training and awareness of procurers
- Broad understanding: strategy for local procurers
- Clear implementation plan and controlling
- Sectoral pilots (Construction):
 - Integration of suppliers as well as regional and local demanders
 - Market transparency – Reduction of information asymmetries (what will be demanded, what can be supplied?)

Example 2: Sustainable *and* Innovative Procurement (UK)

- Idea: State as lead user to spur development and diffusion of sustainable products
- Integration of different (formerly separated) discourses
- Environmental Innovation Procurement Group (EIPG):
 - Industry chair, Ministries, Agencies
 - To use sustainable procurement as innovation driver
 - Reduction of regulative obstacles
 - Improved communication among demanders and between suppliers and demanders
- Measures: Market Transparency, Information Campaign, Training of Procurers, Demonstration Projects
- Main Effect:
 - Structural integration of innovation and sustainability debate
 - Integration of all public levels and industry, expectation: spill over to private procurement



Folie 18



Example 3: Energy Efficiency and Innovation (Sweden)

- 30 Procurement Programmes at national, regional, local level (1990s)
- High variety of approaches, one responsible agency: NUTEK
- Basic idea:
 - Build up of combined demand for energy efficient products (Industry and consumers)
 - Common specifications in common tenders
 - Market transparency
 - life cycle approach
 - Awareness Measures (national (Media Campaigns, Labels, Demonstration Projects, etc.)
 - Partly supplemented with demand subsidies
 - Monitoring of the market Penetration
- Effects: Market Diffusion, Economies of scale
- Lessons:
 - Technology specific mix of measures needed
 - horizontal and vertical coordination (bundling of demand)
 - Excellent market knowledge (suppliers), competence to bundle demand
 - Long-term approaches



Example 4: The wake up in Germany

Innovation Offensive: 16 Impulse Circles

One of Which: State as Factor for Innovation

- Public Procurement and Innovation
- State as Supporter of Targeted Technologies (Strategic Procurement)
- State as Regulator
- State as Manager of Large Infrastructure

Participants:

- Various Ministries (federal level)
- Procurement Agencies
- Federations of Municipalities
- Business Federations

Outcome: Brochure for procurers and decision makers at all levels



Renewed interest for (public) demand as innovation leverage

- EU-Context: Barcelona/Lisbon-Strategy
 - EU: ETAN-Group „Direct Measures“ (3%-Context)
 - IPTS - ESTO paper (memo)
 - EU-Expert group on „Public Procurement - Private R&D and Innovation“,
 - International Benchmark of innovative procurement (Edquist et. al. late 1990s)
 - Procurement as part of 3% action plan
 - Kok-Report, German, France, UK – Note on Innovation
- UK: Procurement as part of innovation strategy, conceptualisation of DTI and Cabinet Office
- Ireland: Forfás-study
- Germany: Parliament – on-going study

