



Demand-based and User innovation policies

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Innovation Studies Group

Cherries Webinar series

“The role of need in open and user-led innovation in healthcare”, 22 September 2020



Universiteit Utrecht

My background

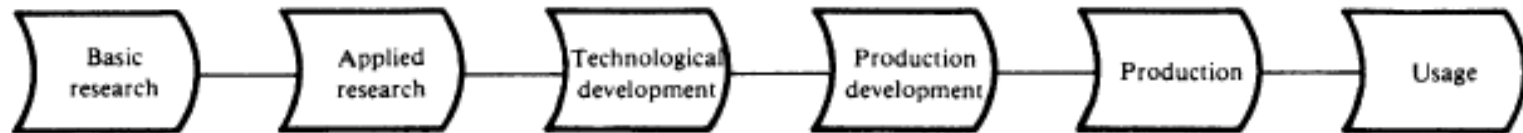
- Thesis: role of users in healthcare innovation
- VU, Dialogic, Rathenau Instituut
- Innovation studies group (UU)

- Demand articulation in emerging tech
- User-driven innovation
- Public-private partnerships
- Innovation and regulation



Linear innovation model

FIGURE 1
A Six-Stage Linear Model of the Innovation Process



Demand side of innovation

- Supply side instruments dominate
- Why is the demand side interesting?
- SAPPHO-study:
 - Pairwise comparison of 'twins'
 - Level of success
 - Most important explanation: 'user needs understood'

SAPPHO updated — project SAPPHO phase II

R. Rothwell, C. Freeman, A. Horsley,
V.T.P. Jarvis, A.B. Robertson
and J. Townsend

*Science Policy Research Unit, University of Sussex, Brighton,
UK*

Research Policy 3 (1974) 258–291

Project SAPPHO consists of a comparative analysis of 'paired' successful and unsuccessful technological innovations, where one half of the pair is a commercial success and the other a commercial failure. In phase I of the project twenty-nine pairs were investigated, seventeen in chemical processes and twelve in scientific instruments. Five main areas of difference between

Rothwell, Freeman et al (1974); later also Teubal (1976) and Pavitt (1984)



Users seem to matter... and have innovative ideas

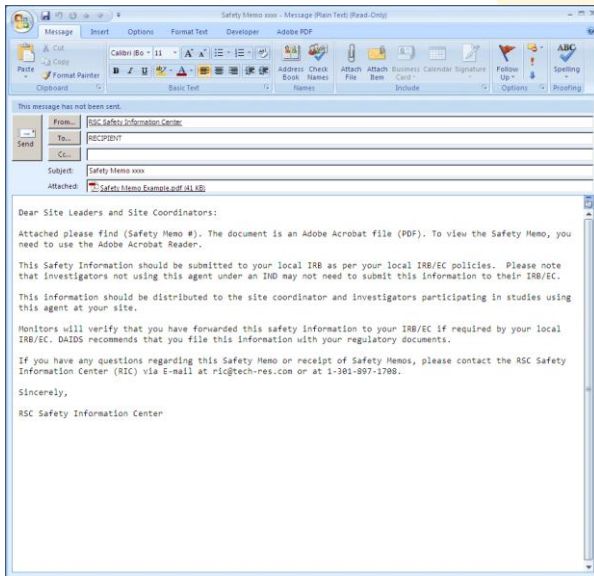
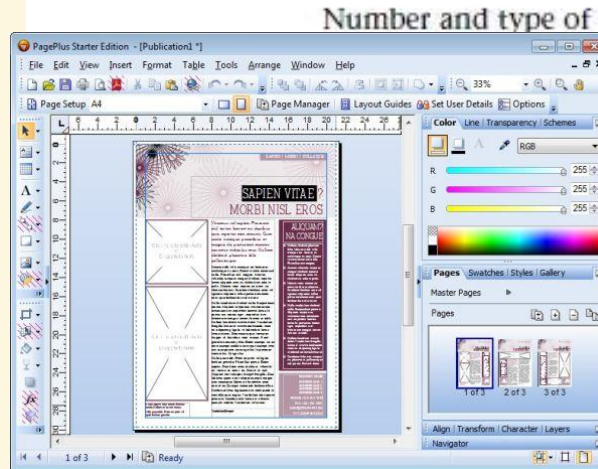


Table 2.1

Many respondents reported developing or modifying products for their own use in the eight product areas listed here.



Number and type of

Percentage developing and building product for own use

Source

4. Surgical equipment

261 surgeons working in university clinics in Germany

5. Apache OS server software security features

131 technically sophisticated Apache users (webmasters)

Consumer products

6. Outdoor consumer products

153 recipients of mail order catalogs for outdoor activity products for consumers

7. "Extreme" sporting equipment

197 members of 4 specialized sporting clubs in 4 "extreme" sports

8. Mountain biking equipment

291 mountain bikers in a geographic region

24.3%

Urban and von Hippel 1988

36%

Herstatt and von Hippel 1992

26%

Morrison et al. 2000



19.2%

Lüthje et al. 2002

Read more: Von Hippel (1976; 1977; 1988; 2005)



Reasons to involve users

- Creative potential users (e.g. 'experiential knowledge')
- Increase effectiveness of R&D process
- Increase chance of implementation
- Responsive to societal/ethical debate
- Formulate response to market failure
- Democratizing innovation



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Pandemic influenza



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Priority Medicines for Europe and the World

Warren Kaplan
Richard Laing



November 2004

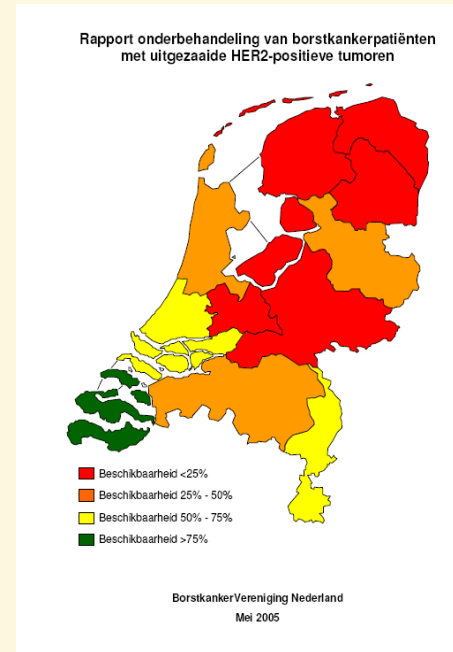
World Health Organization
Department of Essential Drugs and Medicines Policy



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Reasons to involve users

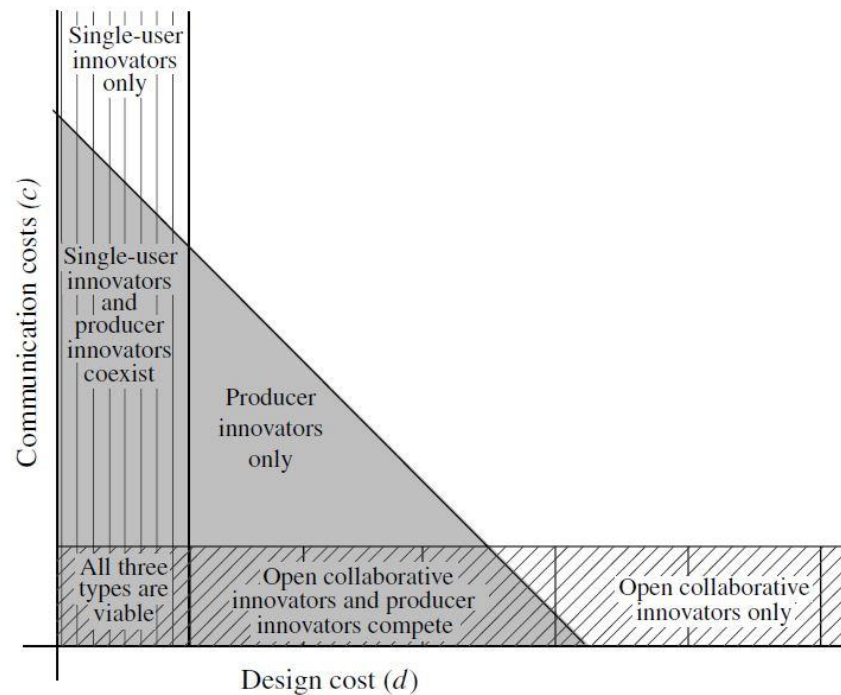
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Users, collectives of producers

- Communication and design costs determine single-user, collective or producer-innovator-only innovations

Figure 3 Bounds of Viability for All Three Innovation Models



Baldwin & Von Hippel (2011)



Demand side of innovation policy

- Aim: induce innovation through:
 - Increasing demand for innovation
 - Defining new functional requirements
 - Improving user involvement
- Rationales?



Demand side rationales

- Market and systemic failures
 - Adoption externalities (first-mover learning costs; allocation of preferences; path dependency)
 - Information asymmetries users-producers (demand articulation)
 - Disfavoring user innovators
- Demand and economic growth
 - Notion of 'lead markets'
- Societal goals
 - Address grand societal challenges

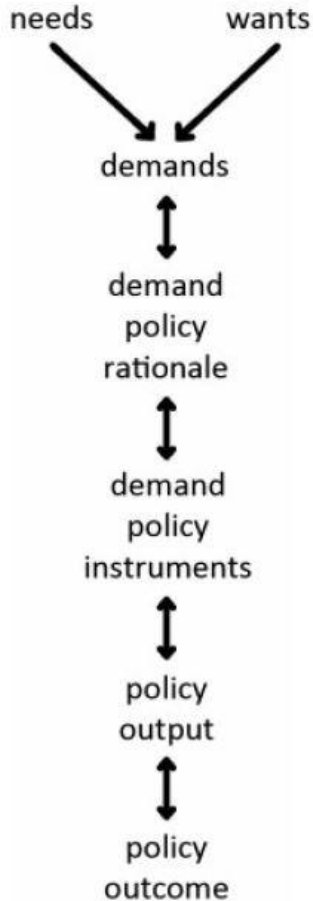


Three challenges



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Demand articulation challenge



demand and supporting market creation.

Innovation existing

demand articulation and demand instruments to support uptake of innovation, standardisation, regulation, training
Example: ride sharing services

as above, plus
discourse organisation to define challenge and link emerging markets for innovation to challenge
Example: antiretroviral products against AIDS in Africa

Innovation to be developed/emerging

- as left, plus
- user (citizen)–producer interaction
- complementary supply measures, infrastructure, demonstration
- Example: electric vehicles
- as above plus
- articulation broad to involve all actors relevant for challenge in order to define challenge and identify technologies needed, support complementary technologies, infrastructure
- Example: solutions for ageing populations

Boon & Edler, 2018

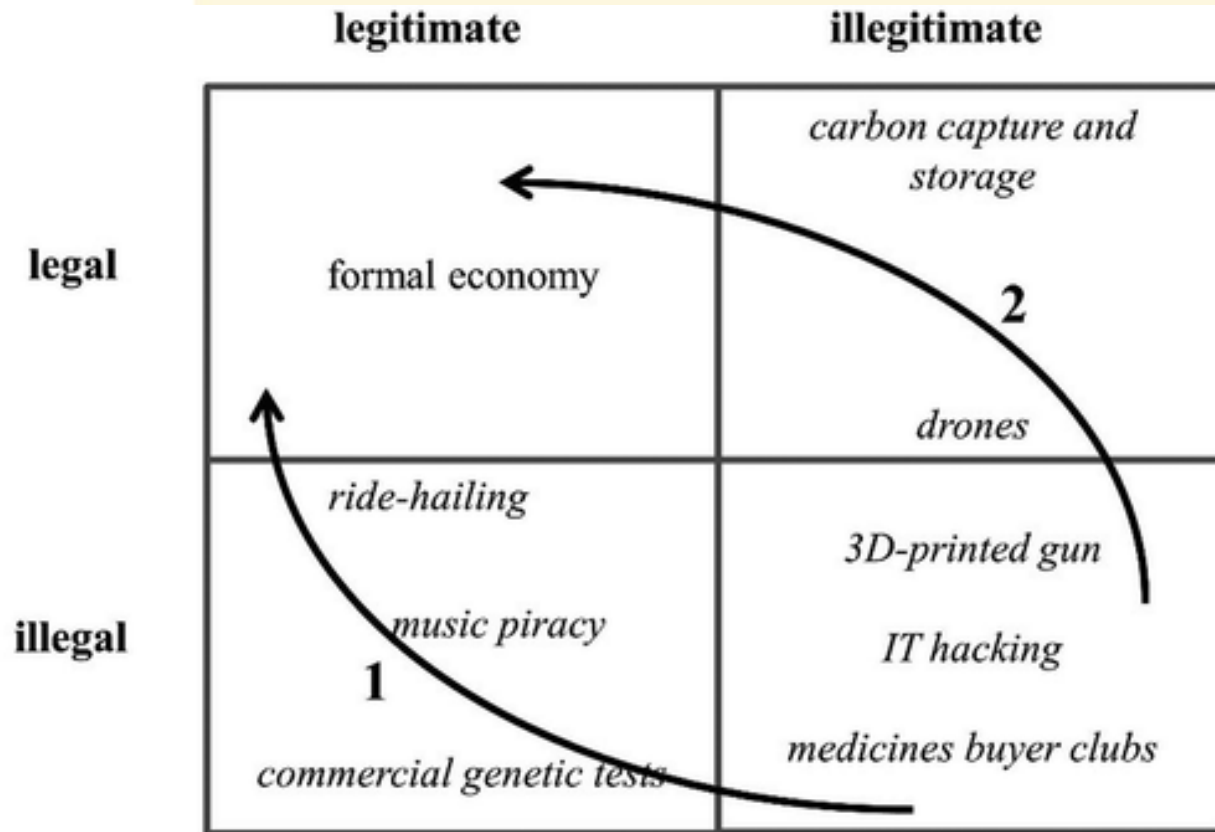


Co-creation challenge

- Who to involve?
- How to ensure equal contributions?
- How to set up interaction that maximizes creativity?
- Protective spaces versus institutionalization



Institutionalization challenge



Institutionalization challenge

A few keywords:

- Upscaling
- Market formation
- Regime formation
- Institutional entrepreneurship





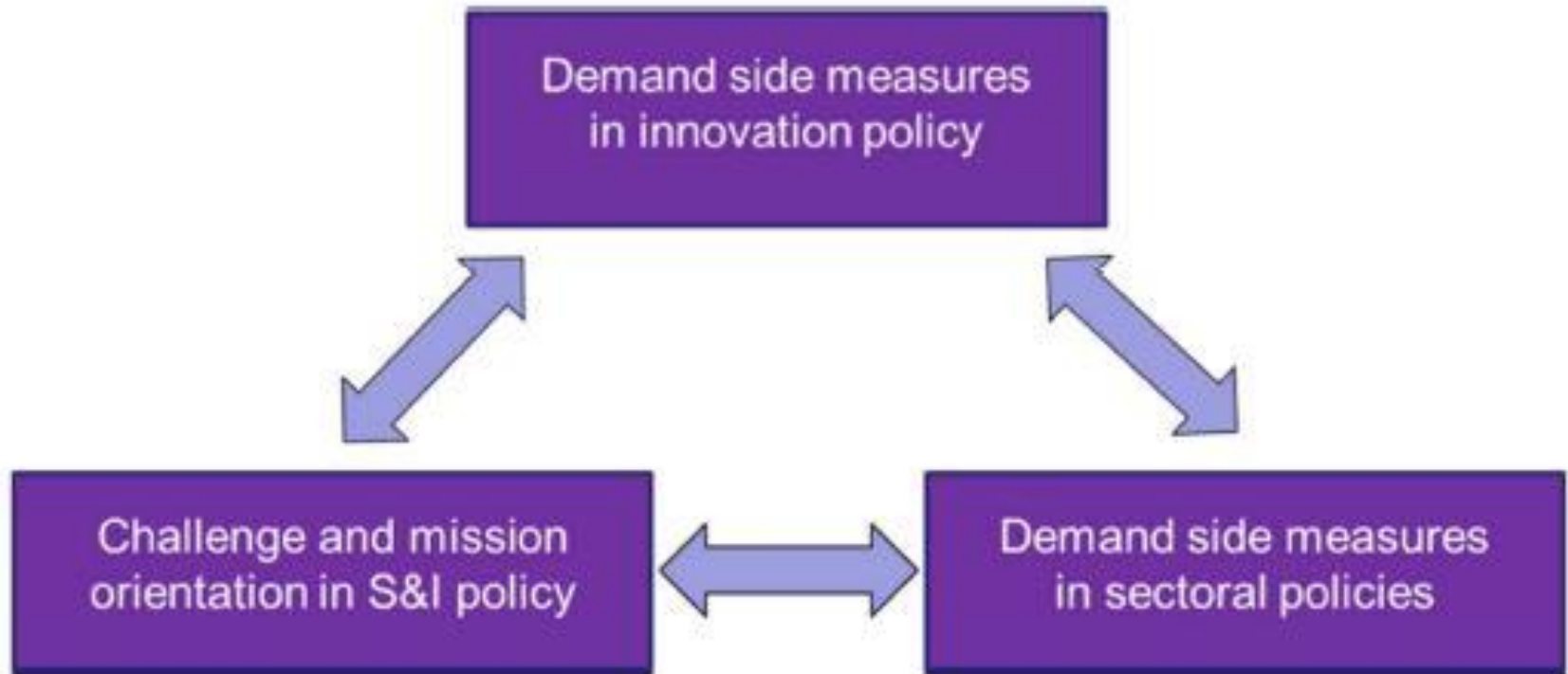
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Thank you for your attention

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Demand side policy

Figure 1: Directionality in Innovation Policy



Boon & Edler, 2018

