

Innovation through Creation of Demand: The Role of Demand Side Innovation Policies

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Presentation outline

- Introduction
- Conceptual Issues on demand side innovation policies.
 - Purpose
 - Definition
 - Deficiencies to be addressed through demand side innovation policies.
- Some tools and practical examples of demand side innovation policies.
- Conclusion and Final Word.

Introduction

- Much as it is systemic in nature, innovation is to a large extent triggered by the interplay between the supply side and demand side (technology push and market pull) factors.
- However, very unfortunately science, technology and innovation policies have only dealt with the supply side factors (emphasis on R&D and human resources for R&D).
- But demand side innovation policies to stimulate demand are equally important, especially for poor countries such as those in Africa, with weak demand for innovative products and services

Introduction Cont..

- The major objective of this paper is to provide conceptual and practical issues surrounding the demand side innovation policies.
- The major purpose is to identify and demarcate them from other policy interventions so as to enable their selective use in the Tanzanian environment.

Conceptual Issues: Purpose of Demand Side innovation Policies



- As earlier explained, much as innovation is systemic in nature, it is basically an interplay between the demand and supply side.
- According to Rothwell & Zegveld (1985) and Lovio (1985), innovation is a complex interaction between the ‘supply’ (R&D labs, scientific and technical institutions) and the ‘demand’ (potential and actual users, and marketing organizations).
- However, of the two, the demand takes an upper hand:
 - Profit seeking firms are responsive to economic incentives, and it is the type of market demand that provides incentives for firms to seek avenues for innovation of higher degrees of novelty.

Conceptual Issues: The Purpose for Demand Side Innovation Policies Cont..



- According to Freeman (1992) movement to higher innovation capabilities happen under two conditions: *emergence of sophisticated demanding customers* and *scientific possibilities*.
- according to him, it is the sophisticated demanding customers (either actual or potential) that can trigger the search for scientific possibilities and associated capabilities.

Definition and deficiencies to be addressed by the Policies.

- Major purpose of demand side innovation policies is to stimulate demand for innovation.
- They are defined as set of public measures to induce innovations and/or speed up diffusion of innovations through increasing the demand for innovations (Edler, 2006, Breznitz et al. 2009).
- This definition arises from the fact that there can be a number of structural hindrances, which hamper the market introduction and market diffusion of a certain innovations.

Deficiencies to be addressed by the Demand Side Policies Cont..



- Overcoming these hindrances, with the help of state policy is the core of demand side innovation policy.
- Policy may intervene where the demand for innovation is insufficient or has not even started (Geroski, 1990; Edler, 2006).
- Edler (2006) gives a number of hindrances (largely arising from demand factor) that might thwart innovative activities. These are:

Definition and deficiencies to be addressed by the Policies Cont..



- *High Entry Costs:*

- At the beginning of the market cycle products or services naturally have high entry costs. Thus preventing their adoption and diffusion
- The cost can easily be borne by the government than individuals

- *Lack of Information or Awareness*

- The potential customers are not adequately informed about the benefits, safety or reliability of innovation; thus reluctant.

Deficiencies to be addressed by the Policies Cont..



- *Lock-in effects and path dependencies*
 - A radical change in technologies is often hampered by so called technological trajectories
 - Technologies have built up their own application context; they link with specialized infrastructure and complementary products.
 - Users of well established and contextualized technologies are —locked in. To break out these trajectories is very costly and demanding, and needs strong impulses and incentives
 - This can be done directly by the state or by providing incentives.

Definition and deficiencies to be addressed by the Policies Cont..



- *Inadequate interaction between demanders and producers.*

- Demanders with needs which exceed the technological state of the art are important for the producers to generate new ideas and their implementation in radically new innovations.

- In this case the government has two roles: to act as an information broker, in the case the users exist. When such users are in short supply, the State can act as a competent user to trigger innovations of higher degrees of novelty

Instruments for the Demand Side Innovation Policies: Public Procurement



In the implementation of the demand side innovation policies, governments use a number of instruments. The most popular are: *public procurement and Standards.*

1. Public Procurement

There are basically 3 types of public procurement

i) *Direct Public Procurement*

- Defined as the acquisition through buying or purchasing of goods and services by governments or public sector organizations, usually through contracting
- As an instrument for innovation, public procurement must involve buying things that go beyond where the market is at the moment.

Instruments for the Demand Side Innovation Policies: Public Procurement Cont..



- By using clear and robust output specifications, purchasers (public organizations) can give firms the space to propose innovative solutions.
- As tool for innovation, Quality and performance oriented concerns prevail upon cost concern in procurement (Gregersen, 1992).

ii) *Cooperative Public Procurement*

This is often primarily a public sector effort in early stages, where public procurement typically leads an emerging market.

Instruments for the Demand Side Innovation Policies: Public Procurement Cont..



Cooperative Public Procurement Cont...

- The philosophy behind is that, early adoption of ideas can have a major impact on the supply side business.
- Providing firms with their first significant customers for a new technology

iii) Catalytic Public Procurement

- Here the government articulates, and help to shape private demand.
- early-stage innovative activity focuses on investigating private demand to inform dialogue with producers
- Some R&D outputs can be commercialized this way (experience of Malaysia)

Instruments for the Demand Side Innovation Policies Cot..



- The use of public procurement to spur innovation has a long history in the OECD countries. It has been used to spur innovation in the areas of public interest such as health and environment.
- However, it has now been declared as crucial tool for innovation and competitiveness.
- In 2008 the OECD launched a mega project on demand side innovation policies.

Instruments for the Demand Side Innovation Policies Cot..



- The Chinese government announced explicitly in the National S&T Program (2006–2020) to utilize public procurement to spur endogenous innovation
- Many actions has already been taken ever since.
- Given the weak demand for innovative products, Tanzania needs demand side innovation policies even more than the richer countries with strong demand.
- Public procurement can be one of this
- It can be focused to areas of high pay offs such as the furniture sector, and can use any of the appropriate three types

Instruments for the Demand Side Innovation Policies: Standards



2) Standards

- Business Dictionary defines standards as universally or widely accepted, agreed upon, or established means of determining what something should be.
- standards are form of embodied technical knowledge accessible to all types of business that enable more effective product and process development
- technical standards contribute to defining the characteristics or performance of products and therefore shape and focus the innovative activities (Smith 1997).

Instruments for the Demand Side Innovation Policies: Standards Cont...



- A survey of 50 firms in the metal sector indicated that about 88% used Tanzania Bureau of Standards, with differing degrees, in the innovation they achieved (Diyamett, 2010).
- Standards are even more important for the Tanzanian environment where consumers – because of poverty – are not empowered to demand quality goods.
- Enforcement of standards, therefore, especially by the government, will help firms improve and upgrade their products.

Instruments for the Demand Side Innovation Policies: Standards Cot..



- A radical impact of standards happened with the Ugandan fish industry.
 - Prior to 1990 the fish industry contributed handsomely – only second to coffee – to the Ugandan foreign earnings.
 - However shortly after 1990, the European Commission imposed stringent sanitary requirements, and export declined drastically
 - This led to a host of innovations in the industry (Kigundu, 2004):
 - upgrading of landing sites and general improvements in sanitary conditions at those sites.
 - a whole host of improvements inside industrial fish
 - processing plants, including plant layout and operations, which resulted into even wider market.

Conclusion and Final Word

- Demand side innovation policies are now widely used all over the world, especially the developed countries.
- However, these policies are even more important for poor countries such as Tanzania where demand for innovative products is weak.
- There is therefore a need for a national strategy on demand side innovation policies, balanced with supply side policies.
- The fact that the countries is currently reviewing its national systems of innovation, and to put in place an STI policy, is an opportunity to propose such a strategy.
- I propose here a group that can with us on the proposal to the Ministry for S&T.