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**A Holistic Innovation Policy and a National Innovation Council -
for efficiency of the innovation system:
Experiences from Sweden**

Presentation
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My presentation has three parts:

1. **Holistic innovation policy** for efficient innovations systems
2. **The Swedish National Innovation Council (NIC)**
– **chaired by the Prime Minister:** A new form of governance
3. **Functional public procurement : Demand - driven innovation policy:**

PART 1: Holistic innovation policy for efficient innovation systems

- Based on:

Susana Borrás and Charles Edquist:

“Holistic Innovation Policy: Theoretical Foundations, Policy Problems and Instrument Choices”. [Oxford University Press](#), 2019.

[Download at home page: <http://charlesedquist.com>]

In the beginning there was the linear model

- Innovations generated by a process consisting of well-defined, consecutive stages, e.g.
 - Basic research
 - Applied research
 - Development work
 - Resulting in new products and processes
 - Growth, employment, etc
 - It was **supply-push** and **partial** in **stressing mainly research** as a determinant of innovations
 - However, **research does not automatically lead to innovations**, and research is **never sufficient** to achieve innovations

Then came the **Systems of Innovation(SI) approach**

- The different SI approaches usually defines innovation in terms of **determinants** of innovation processes, although **different determinants** are emphasized in different versions:
- **My definition** (Edquist 1997, 2005, 2011, 2019) of systems of innovation includes:
 - “**ALL** important economic, social, political, organizational, institutional and other **factors/determinants** that influence the development, diffusion and use of innovations”.

More instrumental: 10 Important Activities/Determinants in Innovation System

1. R&D
2. Education and training
3. Formation of new product markets
4. Articulation of quality requirements
5. Creation and changing organizations
6. Interactive learning
7. Creating and changing institutions
8. Incubation
9. Financing of innovation processes
10. Consultancy services

These **activities** are the **hypothetical determinants** of the development and the diffusion of innovations. Together they may be said to **define** an innovation system.

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Policy is **not** a separate activity – but a part of **all** the ten activities

Why all determinants!

- If all factors that influence innovation processes are not included in a definition, one has to argue **which potential factors shall be excluded** – and why.
- This is **impossible**, since we do not know the determinants of innovations systematically and in detail at different points in time.
- For example, we **did not know** that interactive learning was so important for innovation processes in the 1980's.

A Holistic Innovation Policy

- Integrates **all** *public* actions that influence or may influence innovation processes – their **speed** and their **direction** – see our **book**
- Can rely on the **systems of innovation approach** as its theoretical basis
- Requires a very **broad** and **general** definition of systems of innovation

But policy is still linear!

- Innovation **researchers** have **abandoned** the **linear view** since decades and **completely replaced it by the systems approach**.
- But **innovation policies pursued** in practically all countries are **still**:
 - **partial** (captures only few determinants),
 - **and linear** (strongly emphasizes research)
 - Indicated by the dominance of the expression "**science and technology policy**" and/or "**research and innovation policies**"
 - Also: often said that provision of R&D results is the most important **innovation** policy instrument
- Innovation policy is **far behind** innovation research

A communication failure

- **The policy community** = policy-makers (adm/bureaucrats) **and** (elected) politicians
- The dividing line is **between** these two categories, i.e. **within** the policy community. Governance matters!
- Politicians take final decisions and they often still reflexively believe in the linear view.
- THIS IS AN EXAMPLE OF A **COMMUNICATION FAILURE** BETWEEN INNOVATION RESEARCHERS AND POLITICIANS.
- And also between policy-makers and politicians.

Based on:

“Towards a holistic innovation policy: Can the Swedish National Innovation Council (NIC) be a role model?”,

Research Policy, Volume 48, Issue 4, March 2019

Download at <https://doi.org/10.1016/j.respol.2018.10.008>

Alternative link: <http://charlesedquist.com>

The Swedish National Innovation Council (NIC)

- From 2015 we have a **National Innovation (Policy) Council (NIC)**– created and chaired by the Prime Minister
 - The NIC consists of **10 external advisors** from industry, unions and academia
 - In addition to the Prime Minister, the following **ministers** participate
 - Finance
 - Industry
 - Research
 - The environment (and deputy prime minister)

The operation of the National Innovation Council

- The NIC Secretariate is placed in the office of the PM, i.e. **above** all Ministries
- The PM is **personally chairing** the **4 – 7 hour meetings**
- **No reports** are written by the members of the Council
- The **agenda** is created by the PM and his staff – in interaction with other ministers and also, sometimes, with external members of the Council
- **Presentations** at the meetings are held by ministers (council members and others), external council members and invited experts

Follow-up after meetings

- **No official minutes** are taken, but informal notes are made.
- The State secretaries (deputy ministers) of the five Ministers have **meetings after Council meetings** to discuss what to implement and how. The state secretary of the PM is chairing these meetings.
- Between NIC meetings individual council members are sometimes involved in discussions with the administration or with ministers on specific issues.

Issues discussed in the Council

- A very **wide range of issues** have been discussed, related to innovations and to **many** determinants of innovation processes
- In the **Research Policy article** I show that two major issues have led to decisions in Parliament and in Government:
 - **State risk capital provision**
 - **Innovation-enhancing public procurement** (addressed later)

Two Councils in Sweden

1. A **Research Policy Council exists since decades** (just like in many other countries)
2. This Council has **marginally** addressed innovation policy and only in a **linear** manner (as an 'appendix' to research)
3. The National Innovation Council (NIC) is **not** a science and technology/innovation (STI) policy council
4. NIC **focuses on innovation** and deals with research only as one of many determinants
5. NIC is a means to **escape the linear model!**
6. The **Councils existing in other countries are partial and linear**, i.e. dominated by research policy.

Separate policies for innovation and research!

- The **dominance of the linear view** in the research policy community cements the linear approach to innovation policy
- Also: In those (20-30) countries with a "Council" in this policy area, the councils cover **research** as well as innovation policy (but to a very small extent).
 - Normally called Science, Technology and Innovation Councils or Research and Innovation Policy Councils – sometimes chaired by a leading politician (at least formally)
- In this way research policy continues to dominate over innovation policy – and **innovation policy is considered to be a 'footnote'**.
- One way to increase the degree of holism in innovation policy is to **separate innovation policy from research policy**.

Some results of the Swedish NIC

- Swedish innovation policy has become more holistic during the last four years.
- The Swedish NIC has played a major role in this transition.
- Conceptual specifications and advancements have played a role in this process (e.g. innovation systems, additionality, holistic innovation policy, functional procurement).
- Sweden can serve as a role model for other countries in these respects.

Based on:

- Edquist, Charles and Zabala-Iturriagagoitia, J M (2020) **“Functional procurement for innovation, productivity and the environment: A mission-oriented approach”**, CIRCLE, Lund University, 2020. (Download at: <http://charlesedquist.com>)
- Edquist/Borrás 2019: **“Holistic Innovation Policy....”** (chpt 6) (Download at: <http://charlesedquist.com>)

Public Procurement (PP)

- PP is when public agencies (national, regional, local) buy goods and services
- **Very large:**
 - 700 billion SEK in Sweden = 17.5 % of GDP = **more than** the value of **all industrial production** in Sweden
 - The Agreement on Government Procurement (GPA) of the World Trade Organization (**WTO**) covers public procurement of **1.7 trillion US dollars every year.**
- PP works from the **demand** side

Product procurement vs functional procurement

– a simple and important distinction

- **“Product procurement”**:
 - the buyer describes an existing **product** that he wants to buy.
- **“Functional procurement”**:
 - **Problems** are described - not products.
 - Products which perform **functions** that provide **solutions to the problems** are bought.

Currently: Description of products

- Most public procurement is currently done in a **routine-like manner**: the same product as last year is described and demanded: often cut-and-paste. Even **obsolete** products are demanded.
- Simply describing the previously procured product makes it **difficult or impossible for new products (innovations) to be accepted**.
- **To describe an innovation (a non-existing product) is impossible**
- This is a **major obstacle to innovation**

Functional procurement – in its infancy

- The buyer describes a **problem** that shall be solved or **functions** that the products wanted shall fulfill.
- The buyer describes **what** shall be achieved, not **how** it shall be done.
- Functional procurement opens up for **creativity, innovations** (new products), higher productivity, **increased competition** (between suppliers, **but also** between different products).

Functional procurement – further properties

- Innovations do not have to be the result, but **old products are forced to compete with new products** when it comes to fulfillment of functions (and cost).
- But the process **can end with** procurement of **the old product**. Functional procurement makes innovations possible, but does not necessarily require them.
- However, functional procurement **can also require an innovation** – if the functional demands exclude supply of the old product. (Larger risk)

A national strategy for public procurement

The new Prime Minister in Sweden from September 2014 appointed a **minister responsible** for procurement. He created a public agency for "procurement support" in Sept 2015.

Functional procurement was discussed at the **first meeting of NIC** in February 2015. There was also two additional presentations by the Minister in charge at NIC meetings.

This minister then developed a **National Government Procurement Strategy, decided by the government as a whole in June 2016**. Innovation-related procurement in the form of **functional procurement is important in that strategy**.

Significance of functional procurement

- Functional procurement can influence the **rate** ('number', 'speed' and 'importance') AS WELL AS the **direction** of innovation processes: it can **shape** innovation, i.e. create **new innovation trajectories**.
- Functional procurement can be used to solve problems and satisfy needs related to the *environment, climate, energy, urban development, health, transports, security*, etc = functional procurement has a large potential as a part of **mission-oriented** policies to mitigate **Grand Challenges**.

Consequences:

- If implementation works well, Sweden will be the first country to **systematically use functional public procurement as an innovation policy instrument.**
- This will be a major step towards a **holistic innovation policy** – since this instrument works from the demand side and accounts for 15 - 20 % of GDP.



Thanks a lot!

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Further steps – after NIC

- That political **objectives** influences the **direction** of innovation processes in **environmentally and socially** sound directions
- Make sure that **additionality** prevails
- Further develop policy in a **holistic** direction
- That policy is actually **evidence-based**
- That **action plans** are developed
- That the proposals/decisions are actually **implemented**
- That innovation policy increasingly becomes an **independent policy area**
- That the government presents a coherent **”innovation bill”** to parliament

There are four kinds of "councils" around:

- The **traditional** research policy councils (linear, many)
- The **Swedish** Innovation Council (holistic, head of state as chairman)
- The **French** Conceil de l'innovation (holistic?, governed from Ministries)
- The **European** Innovation Council (partial, focussing on financing)

EU Procurement Directives 2014: Recital 74

“Drawing up the technical specifications in terms of functional and performance requirements generally allows that objective to be achieved in the best way possible.

Functional and performance-related requirements are also appropriate means to favor innovation in public procurement and **should be used as widely as possible.**”

Proposal for the future

- The proportion of the regular procurement that is performed in functional terms shall be increased by 5 percentage points per year during the next 5 years.
- When 25 % has been achieved after these 5 years, the programme should be evaluated and new decisions taken.
- This would **liberate creativity and innovation** in a very large part of the economy, since **it would concern 5 % of GDP!!!** This is **five times** the public R&D budget.
- It would also **increase competition - between suppliers and between products.**