The Influence of Quangos in National Innovation Systems - Case Studies of the Estonian Genome Project and the e-Learning Initiatives

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Outline

- Introduction
- Theoretical part:
  1. The role of the state in economic development (based on the NIS concept)
  2. The change in the public sector organisation and policy making – the rise of quangos
- Very brief overview of Estonian cases:
  1. Biotechnology and Estonian Genome Project
  2. ICT and e-Learning initiatives
- Preliminary results
Although several research papers are foreseeing an important role public policy to play in NISs (Högselius 2006; Carlsson 2006; Lundvall & Maskell 2000; Nelson 2004), there is a lack of attention given to the changes taking place in the public sector itself.
Changes in public sector organisation

1980s New Public Management

End of 1990s - 2000s

Governing by Networks (Goldsmith & Eggers 2004)

Quasi-market

Agencies

Hollow state

Grey Zone

Decentralization

Deregulation

Privatization

Private Sector

Third Sector

Shadow Government
This is about the transformation processes in policy making both in developing and developed countries, where the **hierarchical model of government** as the predominant organisational model to fulfill public goals **is losing its power to market mechanisms** with supposed creative and specialised capacity of enterprises, non-governmental organisations, third sector etc.
What is a quango (quasi-autonomous non-governmental organisation)?

The most common definition, used also in this paper, is given by van Thiel (2004: 176):

"quangos are organisations which, as their main task, are charged with the implementation of one or more public policies, and which are funded publicly but operate at arm’s length of the central government, without an immediate hierarchical relationship existing with a minister or a parent department"
The challenge derived from the term quango

The term Quango coined in 1982 by Anthony Barker - still does not have an international definition valid for every country

**Dependance on:**
- institutional structure of the state
- specific conditions like finances, ministerial responsibility, control mechanisms, public task and public domain (Greve at al 1999; Pollitt et al 2004).

The increase of these entities in the number as well in the respective allocations from the state budget (Tavits & Annus 2006).
The list of the organisations called as quangos:

1. Contract agencies

2. Public bodies (e.g., Non-Departmental Public Bodies, Para- and Extra-Governmental Organisations, the Dutch *Zelfstandige Bestuursorganen*);

3. Voluntary or charity organisations; and

National Innovation System

In order to set the analysis on innovation policy into some kind of boundaries, especially because of the dynamic and unseizable sense of the term ‘innovation’ itself, I have taken the approach of NIS.

The NIS is defined as the

“set of distinct institutions which contribute to the development and diffusion of technologies and which provides the framework within which policies are implemented’ (Metcalfe 1994: 940).
The challenge derived from the concept of NIS

- NIS in use for 20 years – still a rather ‘fuzzy’ concept

- In this paper the concept of NSI has been seen:

  - What to do?
  - How to support the survival?
  - How to build up?

Research objective

This paper tries to shed light on what kind of influence do public management changes in terms of increasing usage of quangos have upon NISs – on their functioning and performance.

This paper argues that the decentralised organisational set-up has caused serious problems in policy impact and can be seen rather as a tool used by the government to shift responsibility (including financial) from itself.
Research questions

(1) what are the main aspects of concern to public policy in order to guarantee innovation in certain areas (in areas oriented on higher value added);

(2) what are the reasons for the involvement of quangos in public policy and possible outcomes for public policy in the sense of innovativeness and effectiveness.

(3) how increasing usage of quangos has affected functioning and performance of two ‘*core technologies*’ in Estonia.
II The role of the state in economic development in the framework of NSI

What

Government role in the framework of NIS

How

How
What to do:

- Economic activities (Hamilton 1791; Singer 1950) or so-called ‘windows of opportunities’ (Perez 2001) are different:
  1. in qualitatively low activities innovation results in lower costs
  2. in qualitatively high activities in higher wages, profits and taxes, and so in an increased community standard for living ‘tripple rent-seeking’ (Reinert 2004);
- State role in educational and science policies;
- Path-dependency and lock-in and danger to see innovation in too linear terms – lack of ‘feedback loops’ (Kline & Rosenberg 1986); missing management system to deal with the risks in science-based innovation (Styhre 2006).
How to build up the system:

- Usage of institutional mechanisms suitable for
  (a) different technologies/industries of dissimilar field (Nelson 2006)
  (b) of different development phase (Perez 2001);

- Infant industry protection – opening the area for market
  forces only when the certain level of maturity is
  achieved, based on List, (Reinert; Cimoli et al. 2006; Hamilton 1791); and heavy public investments in
  promising fields (Högselius 2006) ->
  - basic capabilities,
  - stability, and
  - to encourage entrepreneurial spirit (Edquist 2005; Trott 2002; Moreau 2004) .
How to support its survival:

- Attention on close cooperation -> ‘tacit knowledge’ and social capital, based on interconnections, relationships and trust between economic actors (‘social glue’) and learning (learning-by-doing, learning-by-using and learning-by-interacting) (based on Porter 2000 & Lundvall).
II The change in the governmental organisational set-up and policy making – the rise of quangos

- Dynamic, global and technology-driven economy
- Complex and unpredictable problems transcending organisational boundaries
- Peculiarities of high-technology – organisational structure organic and opened

Changes in the economy

Changes in public sector

Need to change public service delivery models

Lack of inside capabilities

TO AFFECT

TO REFLECT
Positive and justified explanations

- Provision of specific competence not available inside public sector;
- Provision of flexible organizational set-up being in line with current economic developments (Goldsmith & Eggers 2004; Goodsell 2006; Klay 1998) or with peculiarities of high technology (Utterback 1996);
- Ensuring service delivery more in touch with certain specific circumstances and environment - and with the needs of clients (‘increased reach’) (Goldsmith & Eggers 2004);
- Keeping distance from the shifting political power (Bertelli 2006; Elgie 2006; Pliatzky 1992).
Critique

lack of democratic control from above

Public sector  Quangos  Accountability
Negative aspects

- Shifting the funding responsibility away from government (Goldsmith & Eggers 2004);
  - Shifting the original mission of public policy;
- Provision of the opportunities for blame shifting and patronage purposes;
- Loosing of coherence and adequate control over the service implementation;
  - Reduction in efficiency due to the functional and jurisdictional overlapping (Rhodes 1994);
  - Actual capacity of quangos to deliver public programs in politically sensitive and technical areas (Brock & Banting 2001; Pollitt et al 2004);
  - Creation of instability (Pollitt et al 2004).
Negative aspects

lack of democratic control from above

Creation of monopoly over the provision of certain service (Greve et al 1999).

lack of market control from below
The possible positive and negative influence of non-governmental organizations on NISs

<table>
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<th>Core elements of a NIS</th>
<th>Positive influence</th>
<th>Negative influence</th>
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<tbody>
<tr>
<td>1. What is the field of specialization (is the selection of the field justified)</td>
<td>- Provision of specific competence not available inside public sector.</td>
<td>- Actual capacity of to deliver public programs in politically sensitive and technical areas.</td>
</tr>
<tr>
<td>2. Whether created organizations and institutions are adequate to each other and to the specific area</td>
<td>- Provision of flexible organizational set-up being in line with current economic developments; - Keeping distance from the shifting political power; - Being more in touch with certain specific circumstances and environment.</td>
<td>- Shifting the funding responsibility away from government; - Provision of the opportunities for a blame shifting; - Reduction in efficiency due to the functional and jurisdictional overlapping; - Loosing of coherence and adequate control over the service implementation; - Creation of instability.</td>
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<tr>
<td>3. Whether the formal system is favoring the informal one (especially about relationships)</td>
<td>-</td>
<td>- Creation of monopoly over the provision of certain service.</td>
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It can be said that there are several pros and cons for organising government through quangos, yet it seems quite unclear from the literature how and in what way quangos actually affect the NIS.
Case study analysis

(1) the justification of the concrete projects or initiatives in the areas under discussion in terms of current necessities and available capabilities,
(2) an overview of the organisational-institutional set-up of the areas, focusing mainly on managerial, regulative, funding, monitoring and cooperation issues, and
(3) the linkage between the usage of quangos and (negative) outcomes in the area:
- almost a collapse of the Estonian Genome Project
- stagnation phase in the area of e-Learning

These are two (from three) priority development areas in the Estonian research and development and innovation strategy

Estonian Genome Project (EGP) as a case of frontier research

- Population-based genetic databases as ‘gold mines for improving health care’ (Kaiser 2002);
- **EGP as the largest of its kind in Europe (1 mln gene donors) – heterogeneity**;
- Necessary preconditions in terms of social capital and of accumulated knowledge – activities in molecular biology since 19th century (Karl Ernst von Baer);
- Main biotechnological competence in biomedicine with regard to both science and entrepreneurship (Fraunhofer ISI 2002; Tiits et al 2005).

**Added value created by the biotechnology sector in comparison to other economic sectors in 2006.**

- **ISI Essential Science Indicators** database (from 2002), the largest number of high-impact papers (4,429) and citations of them (22,274) belonged to the fields of chemistry, clinical medicine, and biology and biochemistry (Allik 2003).
<table>
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<th>Year</th>
<th>Event</th>
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<tr>
<td>2000</td>
<td>Enactment of the <em>Human Genes Research Act</em> for coordinating the establishment and retention of the gene bank, and for gathering, processing and disseminating the information related to it.</td>
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<td>2001</td>
<td>Foundation of a special non-profit organization, the <em>Estonian Genome Project Foundation</em> (EGPF), to carry out the EGP.</td>
</tr>
<tr>
<td>2001</td>
<td>Foundation of a profit organization called <em>EGeen</em> by EGPF to finance and commercialize the results of the EGP (for 25 years).</td>
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<tr>
<td>2002</td>
<td>Gather the first tissue samples from gene donors.</td>
</tr>
<tr>
<td>2004</td>
<td>Termination of the contract with the main financer <em>EGeen</em>. This meant that the EGP was released of the previously valid exclusive rights of <em>EGeen</em> and that <em>EGeen</em> was no longer obliged to finance the activities of the EGP.</td>
</tr>
<tr>
<td>2004-2007</td>
<td>The strong political debate over the future of the project. The activity of the project practically terminated with the main emphasis given on the maintenance of DNA samples. Information only for 10,319 gene donors.</td>
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<tr>
<td>2007</td>
<td>Amendment of <em>Human Genes Research Act</em>, the EGP will continue as a scientific establishment under the <em>University of Tartu</em> and is guaranteed by public funding worth 120 million EEK for the years 2006-2009. A database with 100,000 gene donors by 2010.</td>
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The long-term goal, which was oriented on the frontier research and improvement of public health, was tried to be achieved through short-term oriented private means.
The ownership structure of the Estonian Genome Project

The Estonian Government
Can control EGP via EGPF

Estonian Genome Project Foundation (EGPF)
Administrator of Gene Bank
100% state owned

EGeen Ltd
Exclusive licensee of the data
2.5% state owned
97.5% owned by EGI

EGeen International Inc (EGI)
Investor organisation
Owned by investors

Private investors and Venture Capital funds

Source: Anton & Kattel 2004: 119
E-Learning as an initiative of upgrading

Estonia as a well-developed e-country:

- The share of individuals regularly using the Internet (at least once a week on the average) 56% in Estonia vs 45% in EU-27;
- The percentage of individuals who have access to the Internet at home (as % of individuals aged 16 to 74) 46% in Estonia vs 41% in EU-27;
- The percentage of online access to 20 basic public services (e-Government) 79% in Estonia and 51% in EU-25.
- Economist Intelligence Unit’s e-Readiness Rankings, 2007, Estonia 28th among the observed 69 countries; the leader in CEE.
- The Web Based Survey on Electronic Public Services, 2006, Estonia 2nd in the area of public services with full availability in online and 3rd on e-Government.

High digital divide and e-exclusion:

- The higher digital literacy index in CEE, two times lower digital divide index (SIBIS 2003).
- The regional digital divide is increasing rather than decreasing (Oviir 2006). The statistics on having the Internet connection and on the Internet usage by place of usage (Department of State Information Systems).
- The Internet usage is highest among persons aged 16-24 (93.6%), students (98.1%) and employed persons 71.4%) (Statistics Estonia, 2007).
- The usage of ICT means in classroom - 28% of schools; 60% of teachers have used computers in their classes Empirica & TNS Emor 2006.
- A considerable lack of attention to older, less-educated, unemployed, less-privileged and Russian-speaking population groups in Estonia.

As Estonia is characterised by having both the well-developed ICT infrastructure and the area of e-services, the current challenge is to build up respective social skills to take most of these developments => educational policies to be paradigm-centered.
Management plan for developing e-Learning

Ministry of Education and Research

Tiger Leap Foundation (1997)

- eLearning Development Center (2006)
  - Estonian E-University (2002)
    - Basic schools
  - Upper secondary schools

Information Technology Foundation (2002)

- Tiger University (2002)
  - Public/private universities
  - Professional higher educational institutions
  - Vocational educational institutions
  - Higher educational schools

Ministry of Economic Affairs and Communications

State Information Systems Department

Source:largely based on Strategy of the Estonian e-Learning Development Centre 2007-2012
Myriad of strategies

- **Universities** – *eLearning strategies of the University of Tartu, Tallinn University of Technology and University Nord*
- **Professional higher and vocational educational school** – 15 members of the current *E-VocationalSchool* consortium are under in working out their respective strategies by 2008
- **E-memorandum** in September 2006 and its orientation to students and teachers rather than policy makers expresses most explicitly the current attitudes towards ICT education and its development.

The term ‘e-Learning’ or ‘web-based learning’ is not to be found in any legislative document related to educational area -> the initiatives of the area do not have a legal base behind them (relates to financing & monitoring).
The results of the case studies (+)

- Government’s initiatives in the areas justified.

- Usage of non-profit organizations:
  + highly technical area -> specific knowledge and capabilities not available inside the public sector,
  + early phase of development and hence representation of high sensibility -> distance from shifting political powers (Estonian current political instability and over-politicized context).
The results of the case studies (-)

- **Usage of non-profit organizations:**
  - Government has failed to achieve the stated goals or has not been able to state the goals in the first place
    1) a chaos in policy implementation (number of strategies, which are not sharing common goals and have not been able to create synergy and functional coherency) – eL
    2) a gap between public goals to be achieved and financial means used for that reason; an opportunity to alter original policy program by the government – EGP;
  - lack of legal bases, financial footing and monitoring system – conditions to press through market-based funding (including EU structural funds) – `resource squeeze`;
  - lack of interconnections and synergies between the main actors
    1) functional overlapping
    2) projects to serve the interest of few actors – EGP was serving the interest of EGeen; e-Learning activities too much concentrated on and led by the activities of the TLF, EITF and the respective consortiums
    3) lack of cooperation between relevant actors -> interaction within the area has been hindered and accountability issues risen up (public distrust to the project); weak linkages between local and central levels – `communication meltdown`
Conclusion

The reasons for and the outcomes of using quangos in policy implementation may have certain similarities but also variations in different areas, even if these areas are similar in some aspects (e.g., characterised by the same development phase) and are related to the one country.
Conclusion

Estonian government has followed the suitable organizational-institutional framework to handle the current ‘core technology’, but it has not taken over the ‘common sense’ of the paradigm (Perez) -> how science and educational policies are actually supporting economic growth.

Policy makers have failed to capture the richness of a NIS and seen it in too linear terms.
Thank you for your attention!