



Smart Specialisation and System Innovation

What can S3 learn from System Innovation – illustrated with Swedish cases?

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Agenda

- Smart Specialisation - RIS3
- System Innovation - SI
- How can the System Innovation concept enrich the RIS3 concept
- Illustrations from Swedish Innovation programmes with systemic focus

Method

Initial steps - so far:

- Literature review: S3 literature and System Innovation
- Desk research, evaluation reports of Swedish innovation programmes, with a systemic orientation.
- Will be added with interviews of Vinnova programme managers, and project participants.



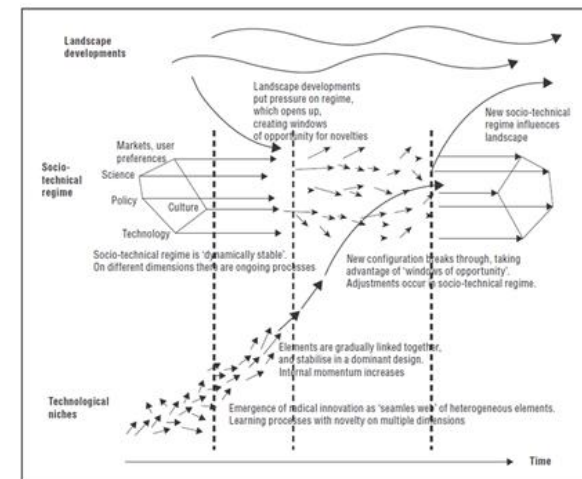
Smart Specialisation S3

- In S3 vertical prioritisation is central - to look for domains/areas of discovery - *"an entrepreneurial discovery is a new area of structural change that opens up, into which a whole segment of an industry can move to explore it and generate numerous innovations."* (Foray, 2015)
- Critical mass and agglomeration; for more efficient use of resources to identify unique niches and avoid duplication (Foray, 2009, 2015)
- EC has encouraged regions to do RIS3 and to *"carry out targeted support to Research and Innovation" ... and "to mobilise entrepreneurs to develop the area."*(EC, 2012).
- Central is the Entrepreneurial discovery process (EDP) with collective experimentation, including links between different sectors and geographies – to integrate and combine dispersed knowledge (Foray, 2015)
- S3 and RIS3 sometimes oversees the mobilising side and focus more on selecting priority areas, and through directed funding hope for clustering.
- How to organise EDP/ RIS3 – depends on the rationale



System Innovation Theory

- Innovation **happens in socio technical systems** – technology is not enough.
- Systems consists of **networks of actors** (individuals, firms, and other organizations, collective actors) and **institutions** (societal and technical norms, regulations, standards of good practice), as well as **material artefacts** and **knowledge** (Geels, 2004; Markard, 2011)
- System innovation is a policy approach **that aims** at mobilising technology, market mechanisms, regulations and social innovations to solve complex societal problems in a set of interacting or interdependent components that form a whole 'socio-technical system'
- E.g. Brazil - Ethanol



System Innovation challenges and Policy Implications

- Technological innovation is necessary but require complementary innovations in organisations and institutions
- System innovation require leadership, inclusiveness and a shared vision
- ... as well acceptance by consumers/citizens.
- Policy intelligence becomes more important, fore-sighting and road mapping important tools
- Policy programming needs to identify and link complementarities, between public interventions (across governance levels and policy domains) and private initiatives and it needs sequencing
- Will meet resistance from incumbents, vested interests, and technological trajectories and lock-in
- New role for innovation agency, new governance mechanisms and capabilities.
- Need for improved governance mechanisms to co-ordinate different policy domains, and stakeholder groups to engage participation and to overcome resistance.

Smart Specialisation and System Innovation

- Similar concepts – not same
- System innovation focus on transition of systems, RIS3 - structural change for smart, sustainable and inclusive growth.
- Multi actor and to some extent systemic (less pronounced in RIS3 so far)
- System Innovation mainly addressing system failure or changing a system in a politically desired direction, in green context.
- SI conceptually is more long term and more radical
- RIS3 in other contexts and enabling emerging market



What can S3 pick up?

- Understanding of technologies as part of a greater socio-technical regime – need to engage with wider policy domains
- ... more easily define functional systems and explore which actors to involve in processes, not only statistical sectors.
- In roadmaps for priority areas, include policy measures beyond traditional R&I.
- Demand articulation - innovations is not waiting 'out there', but needs to be articulated
- Emphasise need to manage resistance and power struggles
- Need for support from high political levels for legitimacy.
- Organised as portfolios and sequences of projects, focused on learning and exploration.
- Regional developments exist in global systems.



Vinnova- the Swedish Innovation Agency



- Vinnova set up in 2001 as a response to the research bill 2000 - an aim to strengthen the Swedish innovation system and promote long term growth, by stimulating collaboration between private and public sector over sectoral boundaries and enhance the capability to use the knowledge base.
- Vinnväxt was the first large scale activity to promote an innovation driven growth policy from Vinnova and was launched in 2002 – competition among regional sectorial innovation systems
- Competence centres (1995-2007) - relaunched as VINN Excellence centres – 2007 – research centres
- Later launched Challenge Driven Innovation (UDI) – 2011; Societal needs as driver for innovation with a systemic focus as solution, 3 steps.
- ... and Strategic Innovation Agendas / programmes (SIO) – 2012; stimulating long term relations between actors for renewal of Swedish areas of strength and new ones

Vinn Excellence and VINNVÄXT

Two programmes improved Innovation Systems

- Vinn excellence centres
 - good knowledge results
 - training useful people
 - research based on societal needs
 - improves collaboration)
- VINNVÄXT :
 - companies develop better and innovate more;
 - researchers attract more resources and publish more in these fields;
 - Profiled traditional industries as innovative, steel, food;
 - established triple Helix as a modus operandi,
 - developed new collaborative patterns.
 - Better meet structural changes.
 - Successful Gender initiatives



UDI and SIO/SIA/SIP

- Both programmes arrange stepwise calls , with less money initially – to mobilise stakeholder constellations, cross sectorial/disciplinary; users and producers of solutions
- Both have included societal challenges as focus points, but in particular UDI
- UDI has a higher degree of Municipalities and Regional Health providers participate in programme (especially in Health and Sustainable cities).
- SIO focus on long term relations between, universities, research institutes, industry, public sector, civil society and other actors, ... for renewal of Swedish areas of strength (Bio economy, mining) and support new areas (Grafen, Internet of Things, Smarter Electronics).
- No project yet in final stage, but promising indications of innovation outcomes



Initial observations of what the Swedish cases can learn S3 from a SI perspective.

- Calls for mobilising actors from different sectors – in steps
- Broad based actor constellation including more broadly solution providers and implementers, and users, beneficiaries.
- To engage more widely with other policy domains
- To not only stick to improving current Innovation System (Vinnväxt), but encourage Systemic Innovation, and identifying and expanding into new arenas (UDI, SIP)
- To use societal challenges and changes in landscape as driving forces for innovation: digitisation, gender, ageing society.
- To aim at longer term perspectives and developing roadmaps, sequencing and connecting activities



Thank you!