

Innovation systems and policies in VET

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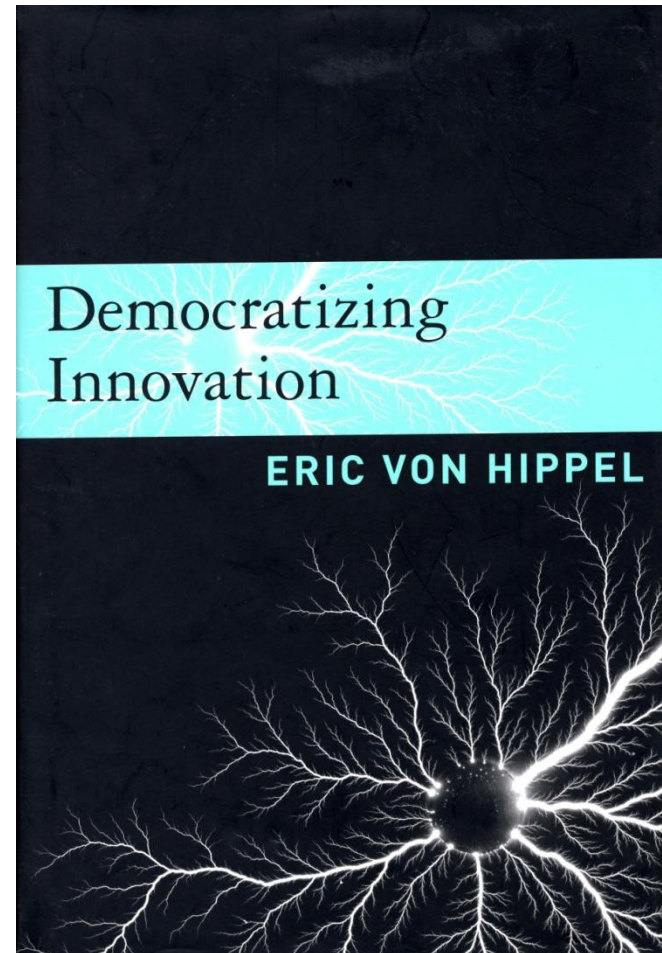
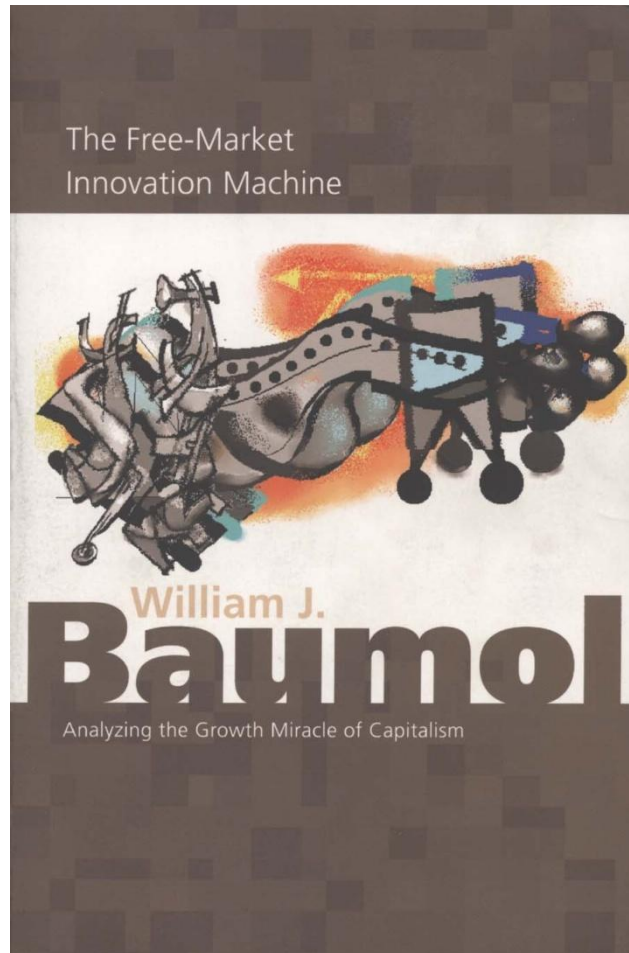
Systemic Innovation in VET

OECD/CERI

Paris, 4-5 February 2007

Innovation?

- **New idea**
 - New under the sun?
 - New to some agents/actors?
 - New application, application in a new context?
- Process, organizations, systems that convert the idea into reality
- **Evaluation** to generate « evidence »
- Adoption, diffusion, getting to scale



The Economics of Knowledge

Dominique Foray

Knowledge ecology and innovation systems

- The **knowledge ecology** involves all kind of institutions and organizations dedicated to the production of new and superior knowledge
- The **knowledge ecology** is not itself a system for innovation. Rather it provides the basis from which particular innovation systems can either self-organize or be encouraged to form by policy interventions
- **Systems of innovation** are emerging as elements of the ecology interact to further the innovation process
- The notion of a single, monolithic and highly durable innovation system is a **deceptive intellectual construct for policy**
- Better to recognize the possibility of **multiple patterns of connectivity** that implies that any given ecology of components can be formed into many different kind of innovation systems

- *In a healthy VET sector, there would be countless numbers of specialized innovation systems generated at the microlevel, systems that are born and decay as new innovation problems are posed and solved*

- Policy to improve the quality of the knowledge ecology related to a certain area (VET) in terms of the overall supply of research activities in different disciplines and the way in which they are organized to produce useful knowledge
- Policy to improve the chances of innovation systems being formed from the ecology, a problem that is largely about barriers and incentives to collaborate in the solution of innovation problems

Question 1

- Is the ecology of research organization and knowledge related to VET sufficiently rich and diverse that all areas of relevant knowledge are covered by research and development expertise?

Knowledge ecology in VET

- VET research is not based on a strong academic tradition: need for capacity building in various relevant disciplines
 - Promotion of « disciplines »: allowing access to the incentives of normal science (professional development, grants, prestige publications, academic promotion)
 - Push projects (government laboratories, grants, leading houses)
- The weakest link: evaluation and production of evidence about « what works? » (more experiments needed)
- The attention of ICTs'companies to VET needs

Question 2

- Do the institutional architecture and the structures of incentives and rewards available to VET researchers, teachers, schools, other stakeholders allow sufficient flexibility and mobility that stimulate and reinforce the connections that transform the ecology into adaptive innovation systems?

Question 2 (cont.)

- The defining characteristic of a « system » requires that its components are connected:
- Research, technology and practices
- VET and firms
- Professional associations, firms, researchers and schools

Innovation systems in VET-1

- Still many incentives'problems and barriers impede to get sufficient level of:
 - teachers' engagement in research to improve connections between research and practices
 - teachers' as lead users to improve connections between the development of learning technologies and practices
 - teachers' engagement with evidence (inquiring practitioner), communities of practices
- What do we know about the teachers operating in vocational areas; what are their incentives?

Innovation systems in VET-2

- Firms as a central locus for VET
- Acquisition of competences and tacit knowledge is most done in firms
- Classical externality problem that face firms investing in worker education : only when firms are able to fully internalize the benefits of training investment, they will provide the correct level of financing for them
- Firms are willing to share the cost if specific investments as those skills are hardly generalizable and apprentices contemplate to stay
- Issue of mobility of apprentices and labour market regulation

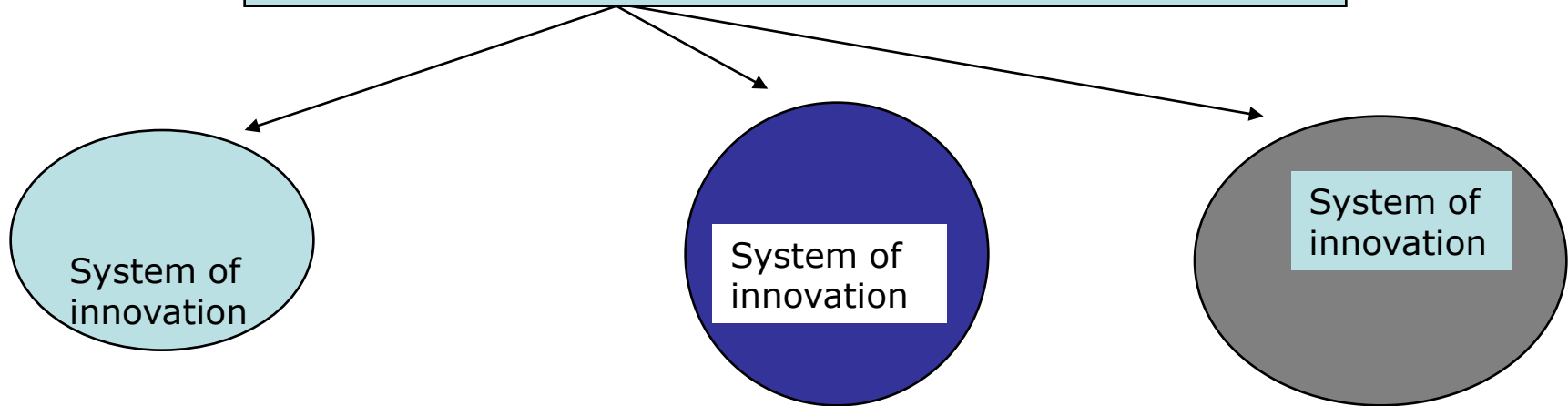
- A new incentive story
- Firms respond positively to VET needs if they know that apprentices do contribute to productivity
- Comparison across countries
 - Where there is significant apprentice's contribution to productivity, no need for other incentives
 - Where the contribution is negligible, then firm's motivation is dependent on further incentives
- But contribution to productivity is likely to be the result of quite narrow and focused training as opposed to more general learning-to-learn type of training
- Policy issue: public support should target investment-oriented training (as opposed to production-oriented training)

Innovation systems in VET-3

- The knowledge economy involves the accelerated pace of technological and scientific advance as well as equally rapid obsolescence
- While history or maths as educational corpus are stable over very long period, this is not the case of most vocational topics

- This puts tremendous constraints on the system:
- Teachers: mastering a « progressive state of the art »
- Students: risk of loosing resources devoted to education for cognitive skills that are not required or fully used
- Procedures and organizations to adjust and change programs: how to improve VET responsiveness
 - Typically changes in VET curriculum involve many partners and last for a very long time
 - Scope for institutional and organizational innovations (incrementalism)

The knowledge ecology



Evaluation, knowledge management, scaling up