From the Economics of Knowledge to the Learning Economy

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Why focus on economics of knowledge?

- In international organisations – OECD, UN, World Bank, European Commission - it is now recognised that competitiveness and economic progress is based upon knowledge.
- In the management literature it is increasingly recognised that knowledge is the strategic ressource – knowledge needs to be managed!
- But how to understand Knowledge and Learning in this context? What can we learn from economic theory and what are the implications for innovation policy and knowledge management?
Understanding knowledge is a key to intelligent management and policy!!

- Uneven development in the world and inequality within countries reflect the uneven distribution of knowledge.
- What kind of knowledge matters for economic performance?
- How easy/difficult is it to ’transfer’ or ’learn’ different kinds of knowledge.
- *To understand and master the process of knowledge creation and learning is a key to intelligent management and to intelligent economic development strategies!!*
Is knowledge a public good?

Public good is characterised by being **Non-rival** (the value of knowledge is not reduced by others using it) and **Non-excludable** (not possible to exclude others from using it).

- Marshall (around 1920) on industrial district – cf Silicon Valley. Knowledge is local and not easy to move from one place to another. It is ’in the air’. May inspire diffusion policy.

- Arrow and Nelson (1960) knowledge as public good calls for government intervention. IPR for specific knowledge. Government subsidy or production for generic knowledge.

To solve the contradiction we need to distinguish between **knowledge about the world** (Know What / Know Why) and **knowledge how to change the world** (Know How).
Taxonomy for knowledge (Lundvall and Johnson 1994)

- Individual competence
  - Know what – facts about the world
  - Know why – scientific laws in relation to nature and society
  - Know how – how to use tools and concepts
  - Know who – know who knows what and what to do
Economics: Information (know-what/know why) as commodity – the insights of Kenneth Arrow

- Market failure
  - Buyer uncertainty about the value of information
  - Seller keeps it when selling it
  - Buyer can sell it to others after he has bought it
  - Easy to reproduce once it has been produced

- Policy issues
  - Intellectual property rights to give incentives to knowledge producers
  - Public production or subsidies to knowledge producers
What matters for economic performance is competence (know how/know who) rather than information!

- OECD has shown that in most countries a major part of aggregate economic growth can be explained by changes inside firms in terms of innovation and growth.

- The diffusion of new technology and especially of new organisational characteristics is very uneven among firms in the same sector and across sectors.

- To enhance the competence and ’the absorptive capacity’ of firms is a major challenge not addressed by standard economics.
Economics: Skills and competence as commodity

- Skills are partially tacit and embodied in people and organisations - cannot be sold or bought separately.
- Access to skills through hiring, through mergers and take-overs and through networking.
- Labour market dynamics affect skill formation.
- Knowledge management and the codification issue
- Underinvestment in skill formation within firms - people move on from one firm to the next.
- Policy issue: Competition clause, employee share holding (c.f. IPRs) may slow down learning at the level of society.
Information technology and its impact on the different kinds of knowledge

- Know-what in data bases - limits of search machines
- Know-why in global science networks - on the need to have absorptive capacity
- Know-how in expert systems - on the limits of skill codification
- Know-who in registers of firms - on the importance of trust and the social dimension.
Tacit versus codified knowledge

- Know how (biking, swimming but also management and research) has always elements of tacit knowledge
- Codification of know-how is always incomplete - lack of distinction between more or less complete codification.
- Codification as an economically determined activity - a crucial element of knowledge management
The learning economy – differs from the knowledge-based economy!

- The learning economy - a new perspective on economic dynamics
  - Change and learning
  - Selection, transformation and speed-up of change
  - Social and economic exclusion in the learning economy

- Competence building at the firm level
  - Implications for knowledge management
  - Implications for policy making
Characterising the learning economy

- More rapid transformation
  - shorter product life cycles
  - shorter life time for competences (halving time = 1 year for computer engineers?)
  - more frequent shifts in working tasks

- New kind of competition
  - Learning based rather than knowledge based
  - Success of people, firms and regions reflect capability to learn

- Inherent polarisation in the Learning Economy
  - Exciting but stressful for the rapid learners - exclusion of slow learners
  - End of European regional convergence
A basic contradiction in the learning economy

- Learning is a process of social interaction more demanding in terms of mutual trust than ordinary transactions in the market – the learning economy is a mixed - not a pure market economy! Social cohesion as prerequisite for broad learning strategies.

- There is an inherent element in the learning economy toward polarisation in labour markets and toward breaking down old social institutions. Social cohesion gets undermined

- This is the major contradiction in the learning economy and it implies that there is a need for political intervention that enhances learning capability and redistributes the learning capability – a need for a new new deal
An important source of competence building is the learning organisation

- Learning organisations and networking organisations (in Denmark)
  - Create more and more stable jobs
  - Are more productive
  - Are more active in terms of product innovation
- But they constitute only 10-15% of all firms
- Shop stewards and middle management are strategic agents of change
Learning organisations

- We define learning organisations as those that:
  - Are flatter and allow more horizontal communication inside and outside the organisational borders
  - Establish cross-departmental and cross-functional teams and promote job-circulation between functions.
  - Delegate responsibility to workers and invest in their skills
  - Establish closer co-operation with suppliers, customers and knowledge institutions.

(In DK such firms also tend to engage in both indirect and direct forms of employee participation.)
The learning economy perspective raises new challenges

- The learning economy remains effective only as long as it is rooted in social capital (trust, integrity, solidarity and openness). Inherent forces in the globalising learning economy undermine social capital by increasing uncertainty and polarisation.

- The learning economy calls for new perspectives on education, working life, labour markets and industrial organisation - and for integrated strategies in firms, trade unions and government.
Policy implications of the learning economy-perspective

- Education: Educate in order to establish learning capability. Give access to life long learning.
- Labour markets: Need for labour market institutions and trade unions that support competence building (new workers’ contracts emphasising competence building).
- Firms: Promote the diffusion of learning organisations.
- Income distribution: Need for new new deal with focus on redistribution of learning capability.
- Responsibility of last resort for the public sector – otherwise only the already skilled get more training.
Top-ten in World Economic Forum Growth Competitiveness Index (2005)

1. Finland
2. US
3. Sweden
4. Taiwan
5. Denmark
6. Norway
7. Singapore
8. Switzerland
9. Japan
10. Iceland
The performance of the Nordic countries contradicts negative predictions

- Mainstream economics of the 1990s claimed that the Nordic welfare states with generous unemployment support, high taxation and compressed wage structures would become unsustainable with further globalisation.

- BUT: The Nordic countries occupied five of the upper 10 positions of all countries in World Economic Forum’s 2005 ranking according to international competitiveness,
Growth and employment in the Nordic Countries

- 1990 to 2005, average annual growth in labour productivity in private sector was 2.6 per cent in Nordic Countries, 1.3 per cent in Euro zone, 2.0 per cent in the US and 2.1 per cent in UK.

- Participation rates are high, long term and youth unemployment are low. Structural unemployment is low.
Cluster analysis of how people learn in different parts of Europe (see Lorenz and Valeyre in Lorenz & Lundvall (eds) (2006))

- Based on household survey in 15 European countries
- Survey to 8000 people who work in the private sector in firms with more than 20 employees.
- Emphasis on the degree of independent problem-solving and learning at the workplace.
- The analysis shows very dramatic differences within Europe.
The four clusters

- **Discretionary learning**
  - A lot of learning, complex tasks and delegation of responsibility for quality

- **Lean production**
  - Learning, Job rotation, team work and quality control but little discretion

- **Taylorism**
  - No problem solving, no autonomy

- **Simple production**
  - Little learning but some discretion and problem-solving
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Results: International diffusion – after correcting for sector and job function

- Discretionary learning and lean production in Nordic countries and Netherlands
- Little DL and a lot of Lean production in UK, Ireland and Spain
- Taylorism and simple production in Portugal, Greece and Italy.
- Germany and France in between 1 and 2 above.
% enterprises training by % dicreptionary learning

R-squared = .73
Questions to discuss

- What are the major distinctions between the concepts 'the learning economy' and the 'knowledge-based economy'.
- What are the major driving forces behind the formation of the learning economy? How does information technology impact on the need for experience based learning resulting in skills and competence?
- What are the implications for education policy, labour market policy, firm organisation, trade union and management of the 'learning economy'-perspective.
- What characterises the learning organisation internally and externally? How does the functionally integrated/learning organisation relate to innovation and growth performance of the firm?
- What can national and regional government do to stimulate the diffusion of learning organisation? Is it possible to transform public administration organisations into learning organisations?