Open innovation and systems of innovation

Lectures

- Thursday afternoon:
  - Official: 16:00-19:00
  - Real: 16:00-18.30

- Friday morning:
  - Official: 08:30-11:30
  - Real: 09:00-11:30

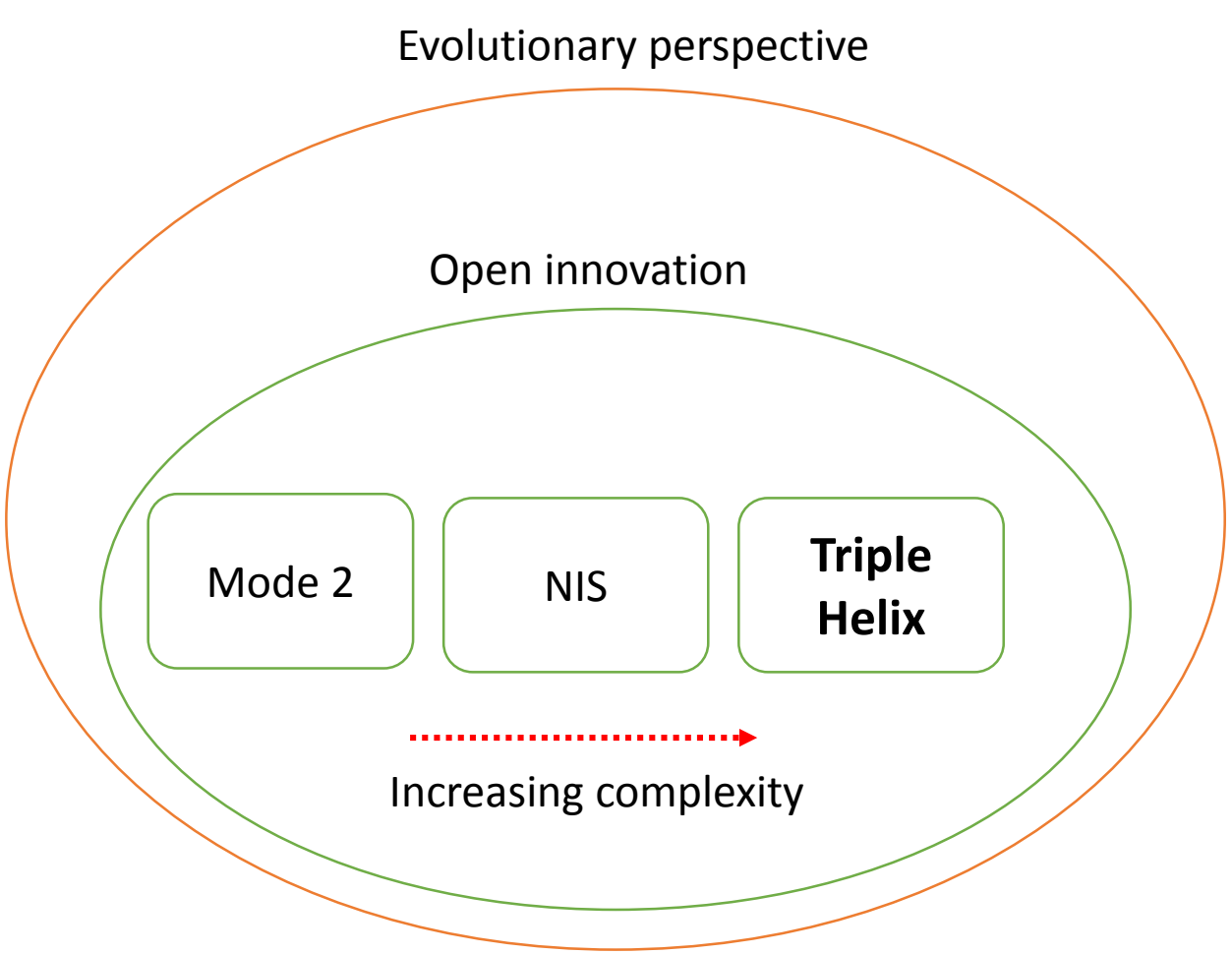
Themes

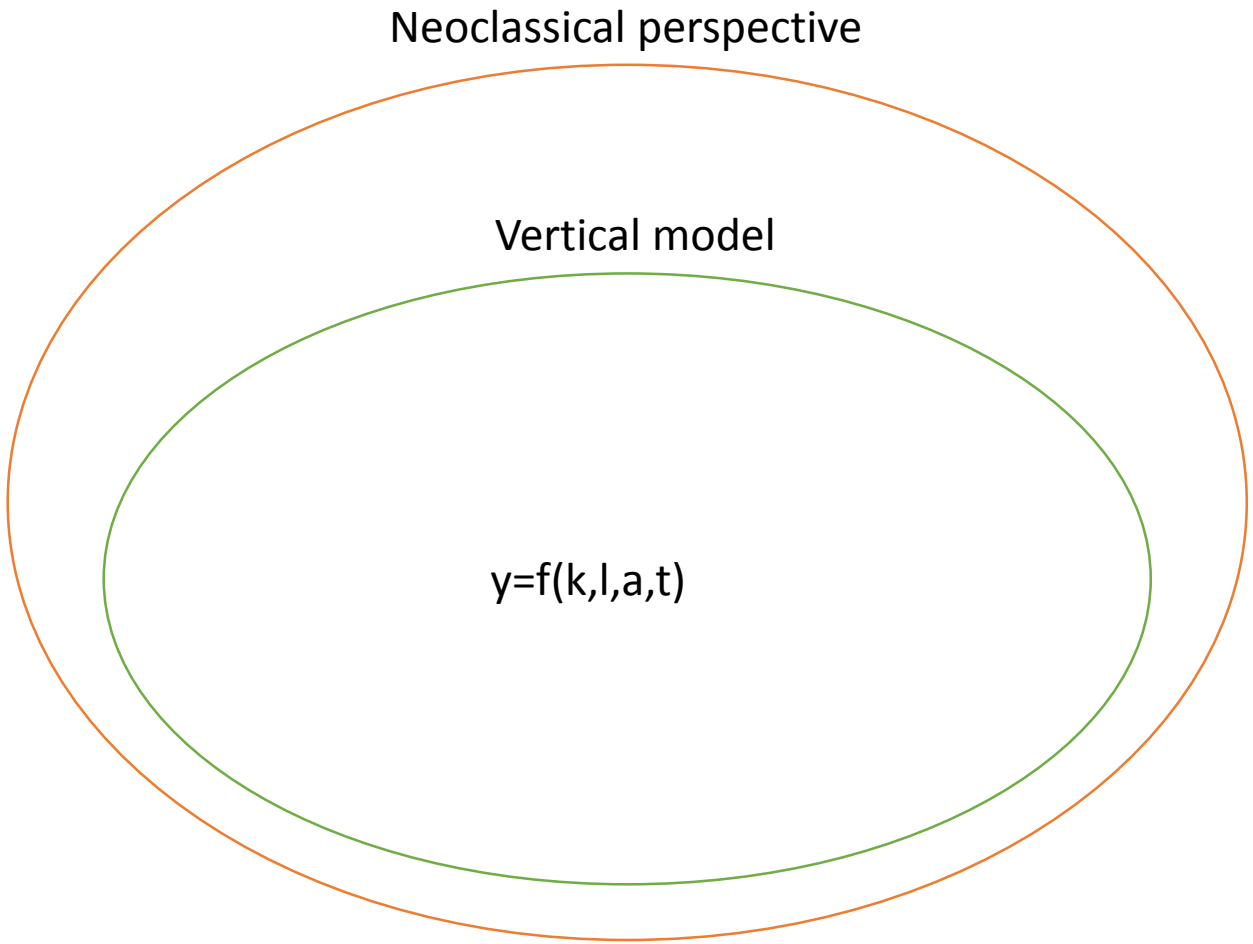
1. Product innovation, Process innovation and basic concepts;
2. Sources, Barriers and Drivers;
3. History of Economics of Innovation;
4. Open Innovation and System of Innovation;
5. Innovation and Competitivity;
6. Innovation and Employment;
7. Methodology in Economics of Innovation;
8. Economics of Science and Technology Transfer;
9. Intellectual Property
10. Entrepreneurship;
11. Innovation Policies

Previously on economics of innovation…

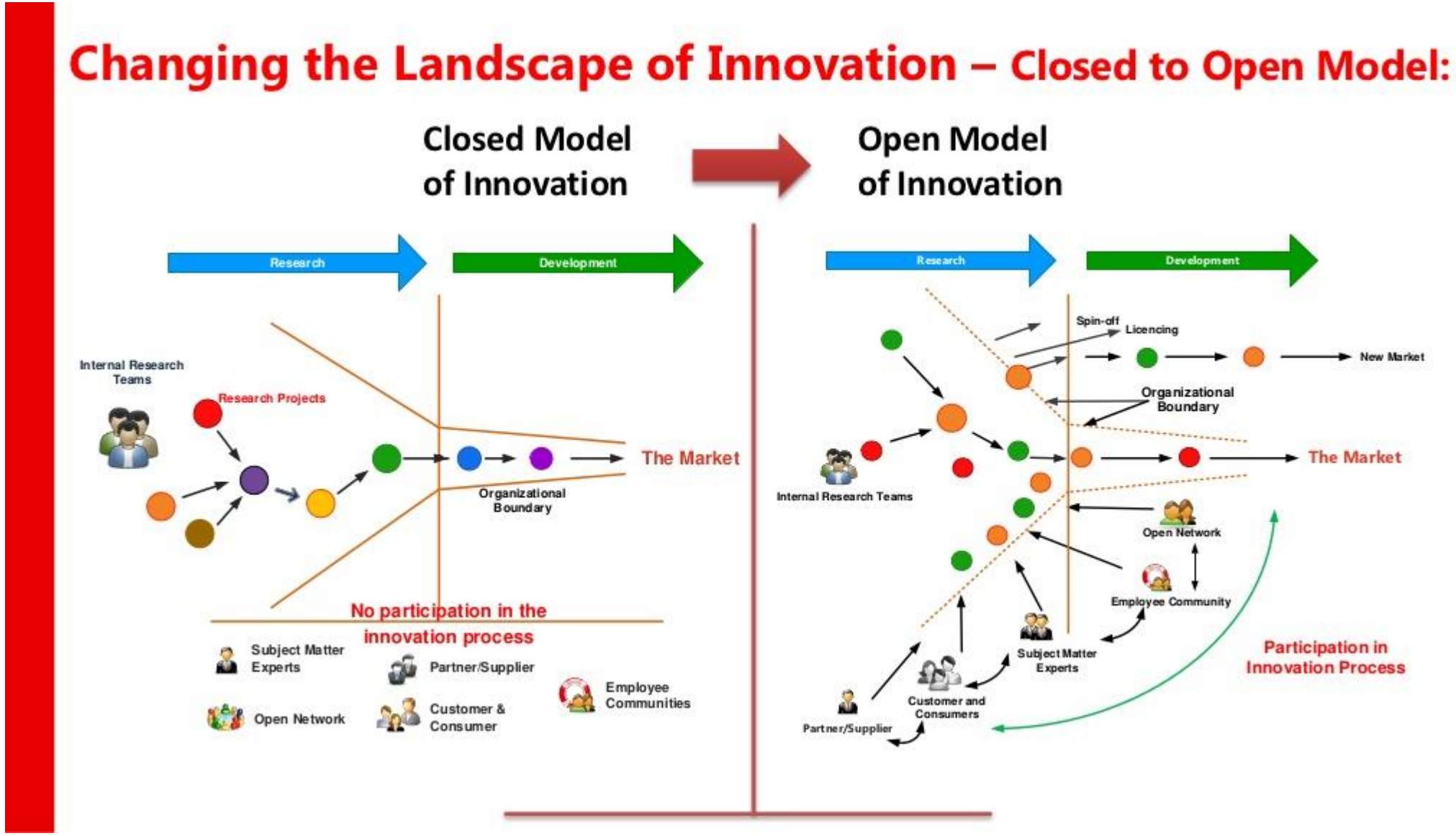
- Modern th. Of process of technological change→Schumpeter
  - Invention
  - Innovation
  - Diffusion
- Y=f(K,L,t)
- $\Delta Y > \Delta f(K,T)$: At→neutral technological change (exogenous or endogenous?)
- R&D
- Main approaches: induced innovation & evolutionary theory

Innovation systems





The open innovation paradigm



Source: Fostering Open Innovation and Knowledge Communities with SharePoint 2010

What’s different?

External knowledge	New balance of the relative importance placed on internal and external knowledge
Business model	Go to market(s) through a variety of channels
Spillovers	Are an opportunity of expansion
Knowledge	Useful knowledge is widely distributed (not only within the firm)
IP	Intellectual property/patents are not a defensive strategy but signal value
Intermediaries	Diffusion of innovation intermediaries
Performaces	Emerging of metrics for the measurement of innovation performance

Mode 2

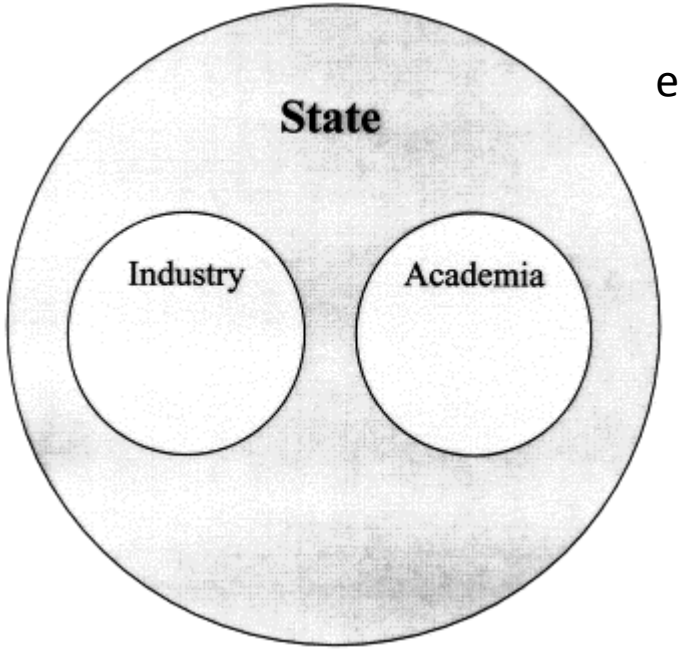
- multidisciplinary teams are brought together for short periods of time to work on specific problems in the real world for knowledge production
- Gibbons and colleagues argued that a new form of knowledge production began emerging in the mid-20th century that was context-driven, problem-focused and interdisciplinary
- distinguished from traditional research, labelled Mode 1 which is academic, investigator-initiated and discipline-based knowledge production

NIS

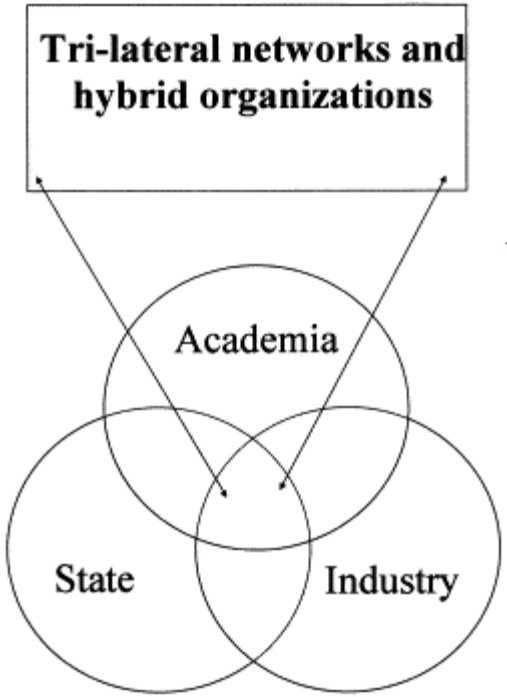
- Originally bu Freeman and Kundvall in the late ‘80s
- Freeman: political economy and the rise of Japan as an economic superpower
- Lundvall: social interactions between suppliers and customers and their role in encouraging innovation in Denmark
- «*The concept of national innovation systems rests on the premise that understanding the linkages among the actors involved in innovation is key to improving technology performance. Innovation and technical progress are the result of a complex set of relationships among actors producing, distributing and applying various kinds of knowledge. The innovative performance of a country depends to a large extent on how these actors relate to each other as elements of a collective system of knowledge creation and use as well as the technologies they use. These actors are primarily private enterprises, universities and public research institutes and the people within them.* » OECD (1997)

Triple Helix

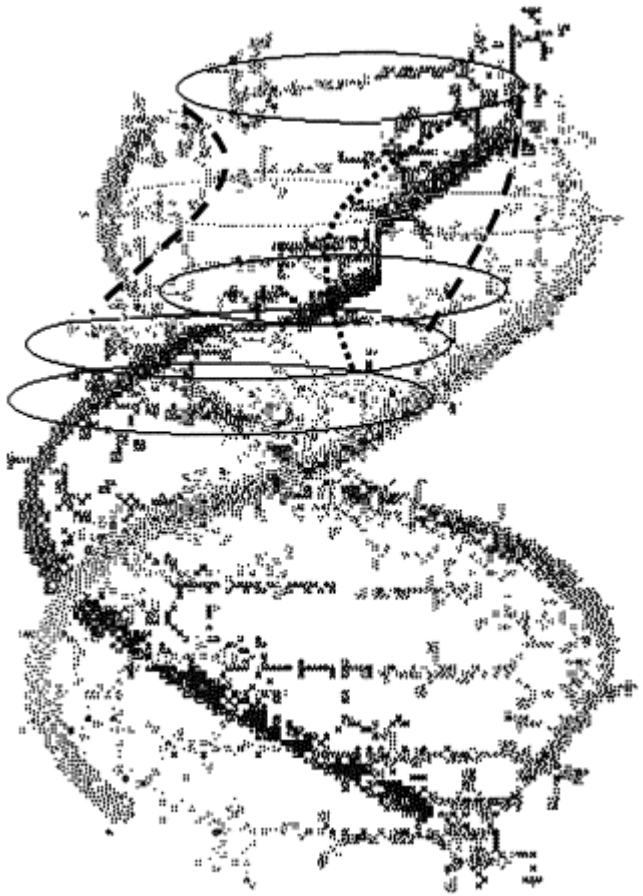
- Focus on the network overlay of communications and expectations that reshape the insititutional arrangements among universities, industries and governmental agencies.
- Univesities can have economic development mission
- Endless transition
- Three functional mechanism (evolutionary economics): technology, firms, institutions (we'll see an example in a minute)
- Unit of analysis cannot be defined, only «perspectives»



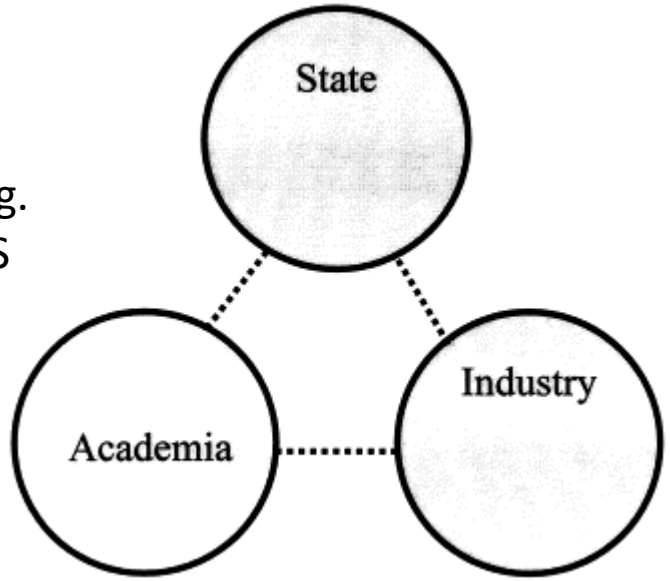
e.g. URSS



How this should be…



e.g. US



An empirical example..

- Leydesdorff, L., & Fritsch, M. (2006). Measuring the knowledge base of regional innovation systems in Germany in terms of a Triple Helix dynamics. *Research Policy*, *35*(10), 1538-1553.