PROXIMITIES of INNOVATION

Metin Durgut
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INNOVATION

• Innovation is an interactive process between heterogenous actors, during which actions and institutional structures are linked.

• Innovation is a social process involving,
  - learning by interacting
  - interaction between firms and other firms, institutions
  - ...

| resource | resource |
| activity | activity |
| actor    | actor    |
In a “space of flows”,

- **interactions**
- **trade relations** (input-output)
- **transfers** (resources and capabilities)
- **communications**
- **cooperations**

contribute to the coordination of innovation activity.
Ex: Networking among a group of organic production firms in Southern Italy (Morone, Sisto and Taylor, 2004).

Interactions
- trade
- information/knowledge exchange
- cooperation

Communications
- information/knowledge exchange
A BASIS FOR THE SPACE OF FLOWS

(Boschma, 2005; Knoben and Oerlemans, 2006)
PROXIMITIES

Geographical Proximity
The spatial or physical distance between economic actors. Small distances between economic actors increase the benefits of knowledge externalities,
• exchange of tacit knowledge
• interactive learning

lack of spat. externalities  lack of geo. openness

too little  local buzz, dense extnl. linkages  too much

issue: geo. extension
measure: phys. distance

(R. A. Boshma; 2005)
Territorial structures involve more than just physical proximity!

Innovation dynamics of territorial innovation models (Moulaert and Sekia, 2003)

i. Industrial district
Capacity of actors to implement innovation in a system of common values.

ii. Innovative milieus
Capacity of firms to innovate through the relationships with other agents of the same milieu.

iii. Localized production system
Similar to the industrial district.
iv. New industrial space
A result of R&D and its implementation; application of new production methods.

v. Regional innovation system
Innovation as an interactive, cumulative and specific process of research and development (path dependency).

vi. Learning region
Similar to regional innovation system, but stressing co-implementation of technology and institutions.

vii. Innovative cluster
Innovation networks, social networks and local rivalry.
**Organizational Proximity**

The extent to which relations shared in an organizational arrangement, in a network of organizations or between organizations.

- learning and innovation in non-hierarchical governance structures
- reduction of uncertainty

**issue:** interdependencies, ties

**measure:** control
Social Proximity
The distance in personal relations. It can be personal or relational; referring to actors in the same space of relations, and embeddedness.
• exchange of tacit knowledge
• reduction of opportunistic behavior
• communities of practice

opportunism    loss of econ. rationale

embedded & market relns.
too little    too much

issue: social embeddedness, interactive learning
measure: trust
Institutional Proximity

Formal and informal institutions influence the coordination of actions. Proximity represents the sharing of same institutional rules, and cultural habits and values.

• collective learning from free knowledge transfer on a common space of norms etc.
• lowering of transaction costs

issue: governance
measure: trust
Cultural Proximity

Distance between informal rules of the interacting actors (codes of conduct, ways of working, customs, ethics, values and norms).

• easier interaction due to similar routines and interpretations

loss of transfer

too little

interaction

too much

lock-in

issue: common interpretations, routines
measure: cultural difference
Cognitive Proximity

The similarities in the way actors perceive, interpret, understand and evaluate the world (education, working experience, technological focus etc.).

- communication and transfer of new knowledge due to similar frames of reference
- incorporation of external and internal knowledge (higher absorptive capacity for knowledge in close proximity)
- communities of practice

misunderstanding          lack of resource divers.

too little  common & complementary res., cap.  too much

issue: knowledge sharing
measure: knowledge gap
Technological Proximity

Shared technological experiences, and the knowledge actors possess about those technologies.

- technological learning
- acquisition and development of knowledge (higher absorptive capacity for knowledge in close proximity)
- anticipation of technological developments

issue: partnership, innovation
measure: local specialization
## INDICATORS OF PROXIMITY

*(Vandeberg, Moors and Kuhlmann, 2007)*

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Indicators</th>
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<tbody>
<tr>
<td>geographical</td>
<td>scientific publications, patents</td>
</tr>
<tr>
<td>organizational</td>
<td>hierarchy, network, market</td>
</tr>
<tr>
<td>institutional</td>
<td>laws, regulations, mutual agreements</td>
</tr>
<tr>
<td>social</td>
<td>formal and informal relations</td>
</tr>
<tr>
<td>cognitive</td>
<td>education, work experience, technological focus</td>
</tr>
<tr>
<td>cultural</td>
<td>codes of conduct, ways of working, customs, ethics, values and norms</td>
</tr>
<tr>
<td>technological</td>
<td>technological focus and exchange</td>
</tr>
</tbody>
</table>
REDUCTION OF PROXIMITY DIMENSIONS

- geographical proximity
- organizational proximity
- social proximity
- technological proximity
- institutional proximity
- cultural proximity
- cognitive proximity
Q: HOW DOES THE SELF-REINFORCING PROPERTY OF A SPATIAL CONCENTRATION EMERGE?

(Krugman, 1995; Porter, 1994; Martin and Sunley, 1996)
Spatial order ~ Self-organization

proximities

- linkages
- spillovers
- thickness etc.

circular causation

- reproduction
- path dependence
- disequilibrium

Similarly, proximities can themselves self-organize:

effect proximity

cause proximity

18
ties of proximity and association

untraded interdependencies (relational assets)

as sources of
• knowledge
• learning

• local tacit knowledge and face-to-face exchange
• quality of local institutions
• social habits and norms
• local conventions of communication and interaction, etc.
proximities

absorptive capacity

learning

learning by monitoring
learning by imitation
learning by interaction

knowledge externalities
learning region

informally constituted knowledge/information environments

- networks of interdependency
- formal institutions of learning
- common understandings

learning-based competitiveness

(Amin and Thrift, 1995; Storper, 1997; Sunley, 1996; Morgan, 1997; Cooke, 1998; Morgan and Nauwelaers, 1998)
Buzz: an information and communication ecology emerging from the social context of relationships (something in the air = knowledge spillovers).
REGIONAL INNOVATION SYSTEM

(Koschatzky, 2003)
**Endogenous Growth**

- economic dimension: specific production system
- different externalities
- policies, investments

**Endogenous Development**

(economic growth and structural change led by local community)

- initiatives for development, employing local potential
- economic dimension: specific production system
- institutional dimension: complex system of relations
TWO ORGANIZED INDUSTRIAL ZONES - ANKARA

Surveyed: manufacturing SMEs who under global pressures;
• need to improve firm capabilities
• need to improve competitiveness
but often display lock-in around the imitation level of innovation development with low innovation gains.

*Role of proximity on imitation trap (or learning)*?

1. SINCAN District
   ~190 firms, 88 surveyed
2. OSTIM District
   over 5000 firms, 77 surveyed
Other firms as important knowledge/skill sources for main production
Observation:
When important, far distant firms are preferred as knowledge/skills sources. However,
• not only such firms are geographically far away
• but also they are distant in terms of other proximity dimensions.

Lack of proximities between local firms contribute to,
• the weakness of local inter-firm linkages for learning and innovation
• the weakness of local structures (networks, innovation systems etc.)
hence to the “imitation trap” of local firms.
INNOVATION SYSTEM DEVELOPMENT

These stages can be compressed and partially done in parallel.

(adapted from Griffiths, 2005)
• placing high importance on other firms as important knowledge/skill resources for main production
• monitoring other firms for innovation
PROPOSAL:
LARGE GEOGRAPHICAL DISTANCE MAY IMPLY
ALSO LARGE DISTANCES IN OTHER
PROXIMITY DIMENSIONS,
THEREBY CONTRIBUTING TO THE IMITATION TRAP AS A COMBINATION!
SUPPLIER- CUSTOMER MAP AROUND A FOCAL FIRM

OSTİM

- Other surveyed firms
- Other firms referred by surveyed firms
- Focal firm E
- 1st tier
- 2nd tier
FIRM – LEADER FIRMS MAP

OSTİM

- Yellow dots: Surveyed firms
- Cyan dots: Firms referred by surveyed firms
FOCAL FIRM E

- Culture: an old guild tradition of merchants and craftsmen
- Collaborates with a European partner on precision manufacturing
- Acts as a demonstration center for new processes
- A community leader

Firm E is acting as a learning facilitator.
Firm E is acting as a proximity inducing agent.
Firm E may be a nucleus in an real/potential informal network.

Policy ex: Networking (organizational proximity)