Genesis and stabilization of hybrid local innovation networks:

the German "BioRegios" case

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1. BioRegio, a public program typical of recent changes in innovation policies

- Changes in analysis of knowledge production
  - New knowledge/innovation created not by a single actor but through cooperation of heterogeneous actors (Etzkowitz & Leydesdorff, Powell, ...)
  - Key role of local dynamics

- New trends in innovation policies (Larédo & Mustar, 2003; Mustar, 2003):
  - Promotion of science-industry interactions
  - Promotion of academic entrepreneurship
  - Increasing role of regional public actors

- BioRegio: a paradigmatic illustration of these evolutions
1. BioRegio, a public program typical of recent changes in innovation policies

- BioRegio program:
  - Launched in 1995 by Federal Ministry of Research
  - Goals: Germany « Nr1 in Europe in biotechnology by the end of the millennium »; development of biotech clusters, increase in start-up creation, development of venture capital, improved acceptance of biotechnology
  - A « regionalized innovation policy » : regions asked to propose by end 1996 a local project for economic use of knowledge : start-up founding, science-industry interactions, …
  - Autumn 1996: 17 participating regions
  - End 1996 : 3 winners (Heidelberg, Cologne, Munich) & special price for Iena
2. A very studied but still mysterious program

- Attention from innovation policy specialists (Dohse, 2000a&b, Eickelpasch & Fritsch, 2005), for:
  - A breaking new public action mode: contest between regions (« contests for cooperation »)
  - BioRegio’s success:
    - Germany Nr1 in 2000; strong entrepreneurship dynamics in the 17 bioregios; significant surge in VC financing
    - A model-program in German innovation policy: generalization of contests as public action tools (BioChance, BioProfile, InnoRegio, EXIST, …)
Biotechnology firms in Germany (1995-2004)

Firms' number

- 1995: 75
- 1996: 104
- 1997: 173
- 1998: 222
- 1999: 279
- 2000: 332
- 2001: 365
- 2002: 360
- 2003: 350
- 2004: 346
17 BioRegio participating regions
Core biotech companies in Germany 2003
Number of biotechnology companies in the « Rhine-Neckar Triangle » (1996-2001)

Number of biotechnology companies in Berlin-Brandenburg (1996-2001)

Source: Biotop report 2002/2003
Total amount of biotechnology investments made by VC companies based in Germany (1996 – 2001)

Sources: European Private Equity and Venture Capital Association (EVCA), Zentrum für Europäische Wirtschaftsforschung (ZEW).
2. A very studied but still mysterious program

- Still to be explained:
  - Why does a similar entrepreneurial dynamics take place in winning as well as in loosing regions?
  - What does the efficiency of this policy rely on?

- To answer: Analysis of genesis and stabilization process of hybrid local networks that appeared with BioRegio
2. A very studied but still mysterious program

- **Empirical data:**
  - 157 interviews (Biotech firms, public authorities, universities/research institutes, financial institutions, pharma companies, …)
  - 2 regions studied: Heidelberg and Berlin-Brandenburg
  - Other data (BioRegio application files, …)
### Répartition des entretiens réalisés par catégories d’acteurs

<table>
<thead>
<tr>
<th>Catégorie</th>
<th>Nombre d’organisations</th>
<th>Triangle Rhin-Neckar</th>
<th>Berlin</th>
<th>Autre</th>
<th>Nb d’entretiens</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entreprises de biotechnologies</td>
<td>42</td>
<td>21</td>
<td>20</td>
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<td>67</td>
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<td>Entreprises pharmaceutiques</td>
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<td>7</td>
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<td>Ministères</td>
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<td>3</td>
<td>2</td>
<td>10</td>
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<td>Ministères de Land</td>
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<td>Ministères fédéraux</td>
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<td>Acteurs publics locaux de soutien</td>
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<td>7</td>
<td>3</td>
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<td>Associations de promotion des biotechnologies</td>
<td>2</td>
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<td>-</td>
<td>-</td>
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<td>Parcs / incubateurs</td>
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<td>1</td>
<td>3</td>
<td>-</td>
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<tr>
<td>Service de Transfert de Technologies d’IESR</td>
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<td>13</td>
<td>32</td>
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<td>Sociétés de capital-risque</td>
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<td>13</td>
<td>32</td>
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<tr>
<td>Sociétés de participation publiques</td>
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<td>-</td>
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<tr>
<td>Consultants / auditeurs</td>
<td>8</td>
<td>1</td>
<td>1</td>
<td>6</td>
<td>8</td>
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<tr>
<td>TOTAL</td>
<td>103</td>
<td>34</td>
<td>45</td>
<td>24</td>
<td>161</td>
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</tbody>
</table>

- Generalized participation in conceiving an application for BioRegio, in the regions.
  Explanation:
  - Convergence of singular reasons motivating local actors’ actions…
    … allowed by the vagueness of BioRegio’s objectives
  - Preexisting professionnal networks

- Strong emulation within regions
3. Genesis of hybrid local innovation networks
(1995-1997)

- Systems and organizations to sustain entrepreneurs are conceived, sometimes put in place, in the BioRegio application process.

- After results, systems/organizations are implemented, even in loosing regions.

Reason: action opportunity has emerged for the local social structure through contest application (modified path-dependence)

1998-2000: Networks’ strengthening

- BioRegio derived organizations strengthened
- Support networks enriched
  - Technology transfer offices generalized within HERI
  - More numerous and more specialized technology parks
  - Emergence in the regions of other instruments to stimulate innovation
- Local support actors and systems prove able to play an intermediation role between firm’s founders and their partners, especially with funding providers. Reasons:
  - Local dynamics initiated by Bioregio
  - VC companies « looking for » projects, because of context: stock market’s increase; federal instruments to promote VC (tbg, KfW)

2001-2004: Survival of weakened networks

- Drastic context change: stock markets crash; weakening of public support for VC
- Local support networks: reorientating activities but still acting as intermediaries
5. Conclusion

Similarity of entrepreneurial dynamics in winning as well as in loosing regions can be explained through:

- Genesis and stabilization of local hybrid innovation networks that facilitate access to resources for entrepreneurs on a more depersonnalized way

- Embeddedness of these networks in a « fitting » environment: an environment that enables them to act as intermediaries
5. Conclusion

Lessons from BioRegio:

- To promote hybrid R&D projects, public action initially focused **not** on content of R&D projects **but** on structuration by local actors of ad hoc intermediating networks.

- Sense of timing (kairos) hard to replicate.

*Comparison with French « pôles de compétitivité »?*
Thank you!