

German bioclusters as regional innovation strategy

ドイツ・バイオクラスターにみる地域イノベーション戦略

日本政策投資銀行
フランクフルト駐在員事務所
フュロップ ラルフ

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regions and clusters



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- „reemergence of regional economies“ - high relevance of regions
- clusters as effective „innovation islands“
- change in policy: „strengthen the strong“

regions and clusters

- cluster policy as focus of regional development
- success of biotechnology clusters: What factors are relevant?

agenda

- german bio-industry at a glance
- what makes german bioclusters succesful? - case studies
- conclusion

characteristics of biotech-industry

1. origin in university research –transfer of technology
2. high costs for research and development,
low production cost
3. „knowledge spinover“
4. growing relevance for pharmaceutical industry

bioregions in Germany

A map of Germany divided into 16 federal states (Länder), each labeled with its name in German. The states are color-coded in various shades of blue and purple. Major cities are marked with red dots and labeled. The map shows the geographical distribution of bioregions across Germany, with a high concentration of red dots in the eastern part of the country, particularly in Berlin and the surrounding areas. The map is set against a background of a stylized sun or light rays in the bottom right corner.

States shown: Schleswig-Holstein, Mecklenburg-Vorpommern, Hamburg, Bremen, Niedersachsen, Berlin, Brandenburg, Sachsen-Anhalt, Nordrhein-Westfalen, Thüringen, Sachsen, Hessen, Rheinland-Pfalz, Saarland, Baden-Württemberg, Bayern.

Major cities marked: Hamburg, Berlin, Köln, Frankfurt, München, Stuttgart, Düsseldorf, Leipzig, Dresden, Regensburg, Bonn, Wiesbaden, Koblenz, Trier, Saarbrücken, Karlsruhe, Mannheim, Heidelberg, Freiburg, Konstanz, Ulm, Augsburg, Ingolstadt, Landshut, Regensburg, Passau, Linz, Salzburg, Innsbruck, Wien, Prag, Brno, Opatowitz, Gdansk, Poznan, Lodz, Warszawa, Krakow, Katowice, Lublin, Zielona Gora, Szczecin, Gdynia, Gdansk, Poznan, Lodz, Warszawa, Krakow, Katowice, Lublin, Zielona Gora, Szczecin, Gdynia.



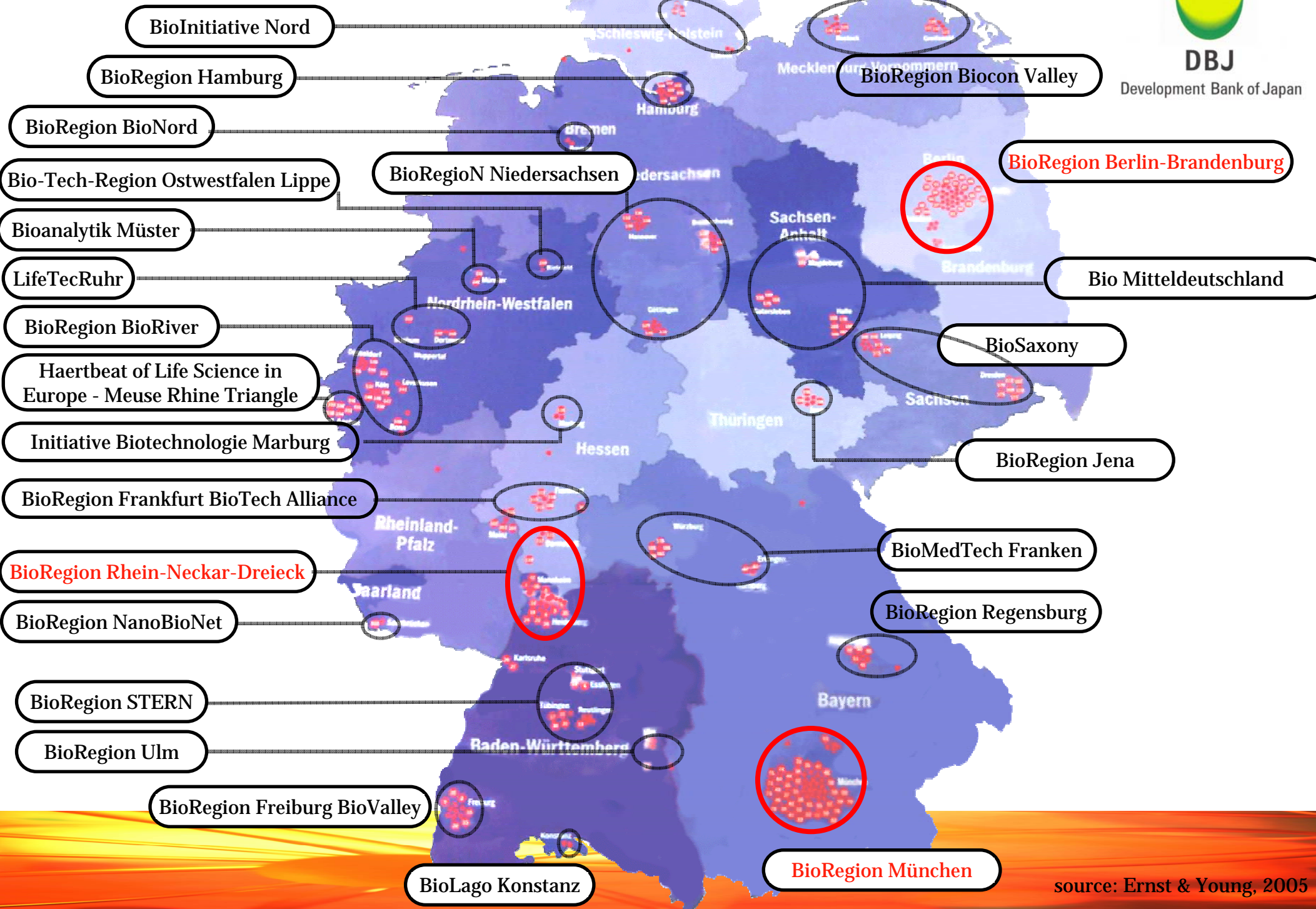
source: Ernst & Young, 2005

bioregions in Germany



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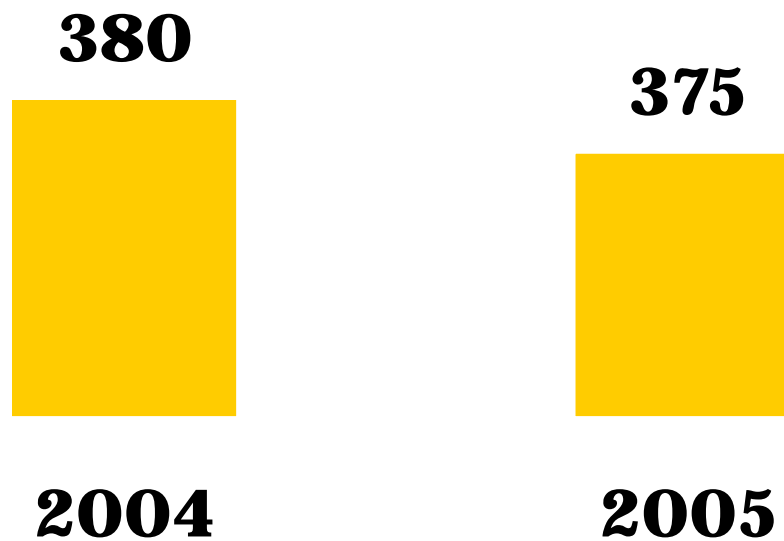


number of biotech companies



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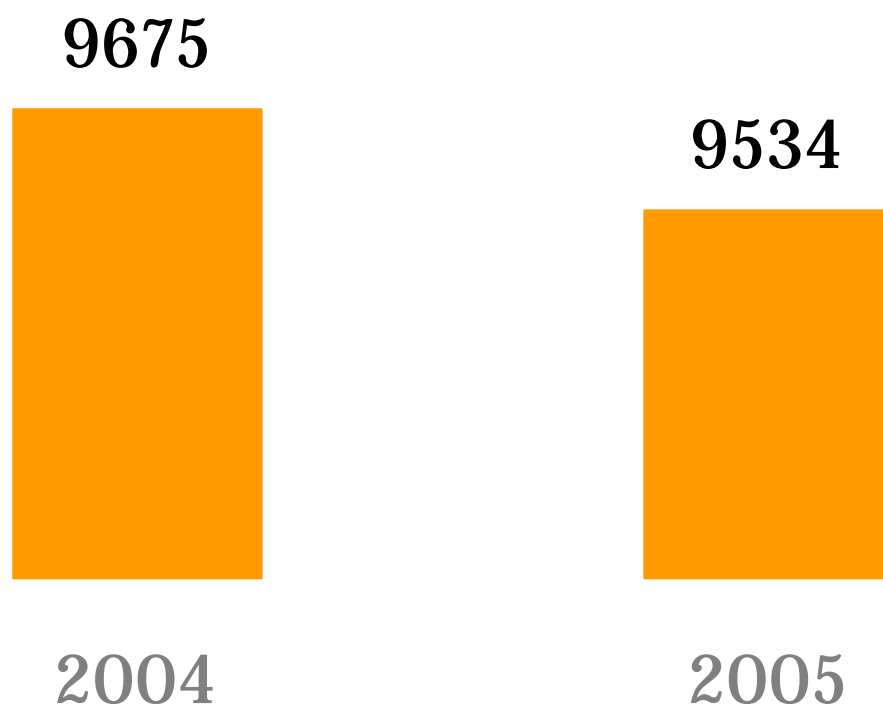


source: Ernst&Young 2005

employed persons in biotech companies



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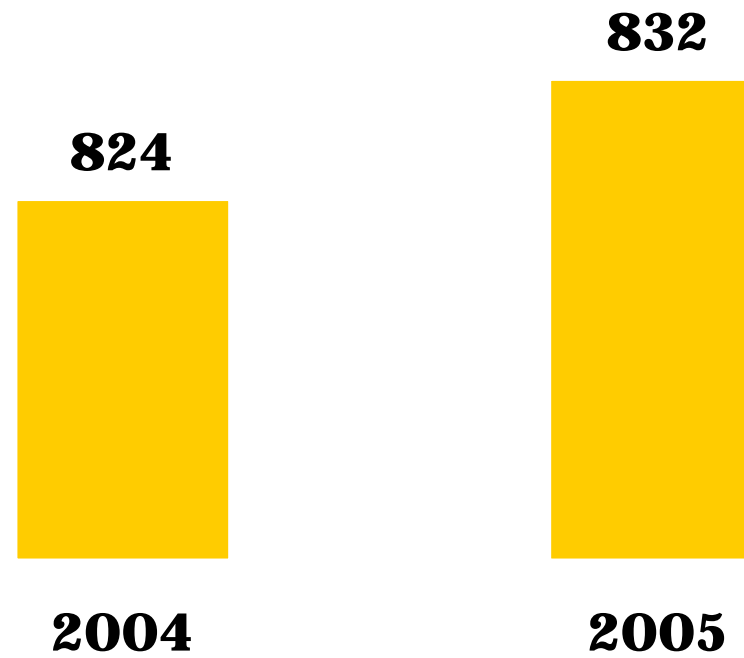
source: Ernst&Young 2005

transaction volume (Mio. €)



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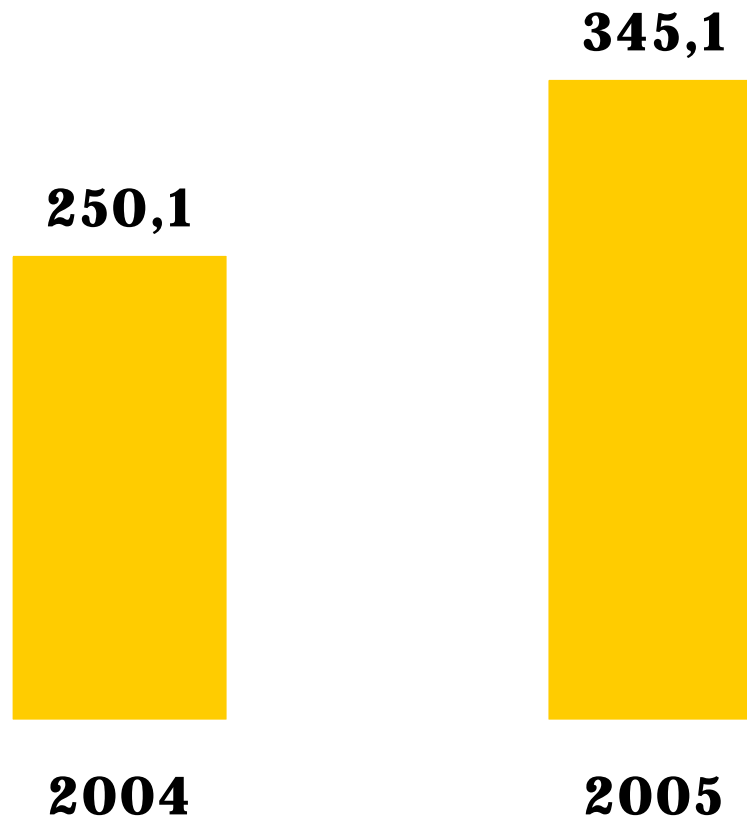
source: Ernst&Young 2005

Venture Capital



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source: Frankfurter Allgemeine Zeitung/transkript 2006

What makes Bioclusters succesful?

- case studies: Research on German sucessful Biotechnology-Cluster



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criteria for Bioregion selection

BioRegion	criteria
Rhein-Neckar-Triangle	<ul style="list-style-type: none">■ high number of companies■ 'Technologiezentrum' as strong center of cluster■ victory in BioRegio competition■ high international reputation
Berlin-Brandenburg	<ul style="list-style-type: none">■ high number of companies■ high international reputation■ various locations and technology-centers
Munich	<ul style="list-style-type: none">■ high number of companies■ Martinsried as strong center of cluster“■ victory in BioRegio competition■ high international reputation

location factors for biotech-clusters

external factors

external factors



internal factors

external factors

external factors

external factors

- ▶ competitions
- ▶ subsidies
- ▶ VC market
- ▶ political commitment
- ▶ public opinion



external factors:



- ▶ Venture capital market
- ▶ „Catch-up strategy“
- ▶ BioRegio-Competition

external factors: national promotion of biotechnology

Regions

BioRegio 1995-2005

- Regions with excellent conditions
- strengthening of Bioregions
- change in German promotion policy
- sustainable growth impact
- 90 Mio. EUR

the winner of the 'BioRegio' competition



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Regions

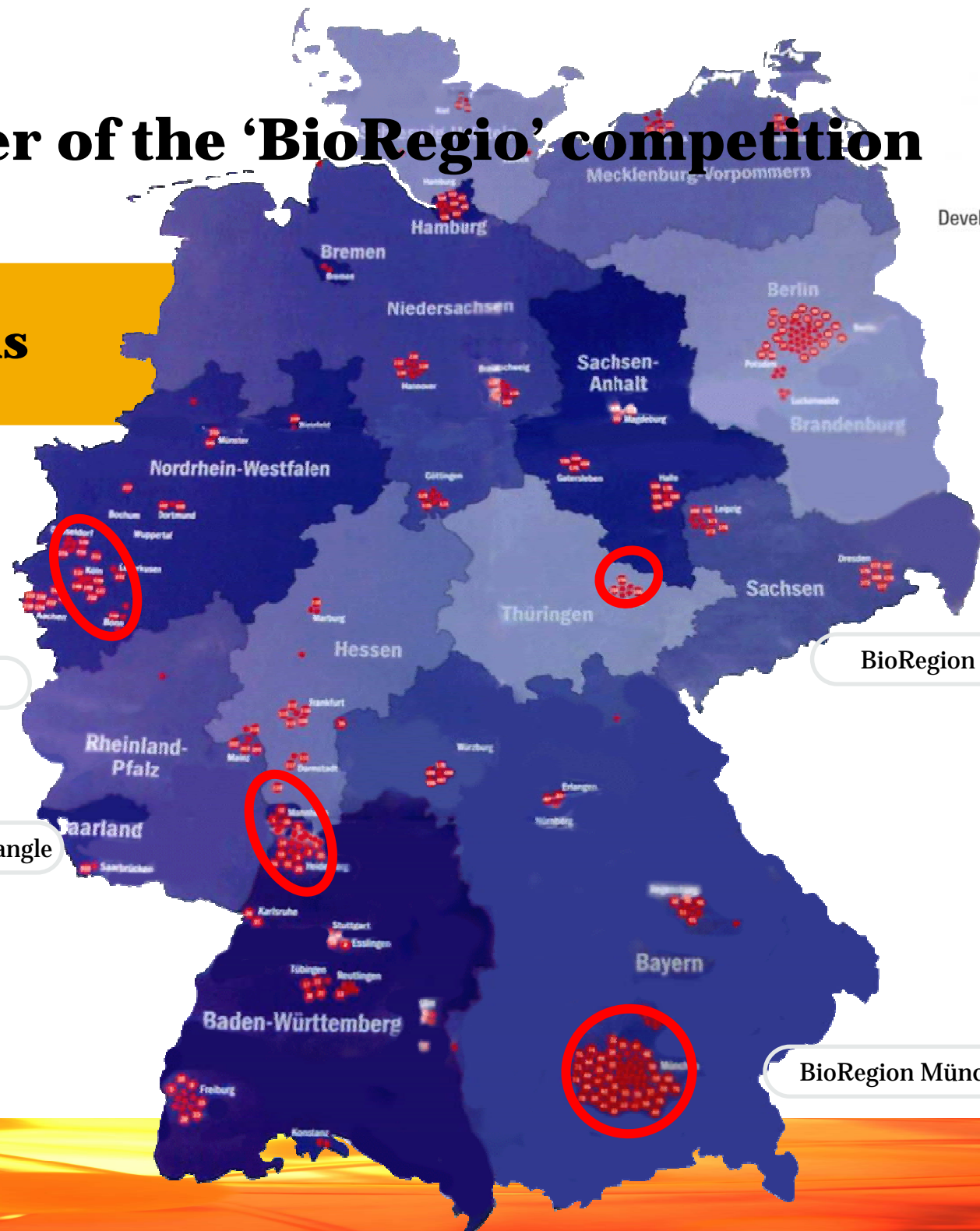
**BioRegio
1995-2005**

BioRegion BioRiver

BioRegion Rhein-Neckar-Triangle

BioRegion Jena

BioRegion München



external factors: national promotion of biotechnology

Regions

**BioRegio
1995-2005**

**BioProfile
1997-2007**

- Regions with emphasis
- promotion of smaller Bioregions
- 51 Mio. EUR

external factors: national promotion of biotechnology

Regionen

Science

companies

**BioRegio
1995-2005**

**BioProfile
1997-2007**

**BioFuture
1998-2010**

**BioChance
1999-2004**

**BioChancePlus
2004-2006**

‣ promotion of
young
scientists

‣ 75 Mio. EUR

‣ support for young
Biotech companies

‣ 150 Mio. EUR

external factors: national promotion of biotechnology



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Regions

Science

companies

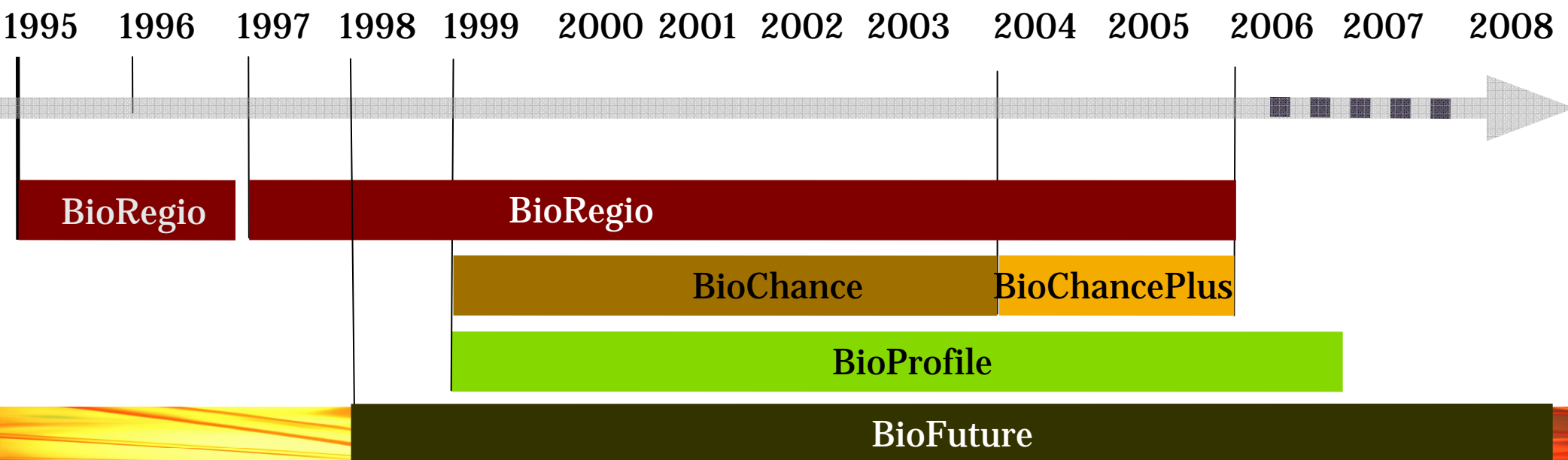
**BioRegio
1995-2005**

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results: location factors for bio-clusters



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BioRegions:
Berlin-Brandenburg
Rhein-Neckar-Triangle
Munich



- excellent science infrastructure in close distance
- entrepreneurial infrastructure

results: location factors for bio-clusters

BioRegions:
Berlin-Brandenburg
Rhein-Neckar-Triangle
Munich



- political commitment
- active network organization
- access to financial support (Seed Capital, Growth Capital)
- human Capital

success factors for biotech-regions



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- innovation policy: from central governance to decentralize level
- no “masterplan” possible
- focusing resources

success factors for biotech-regions



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- transfer of knowledge: access to innovation resources
- small regions: specialization
- improvement of human resources potential
- creation of public interest and acceptance



success factors for biotech-regions



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- initiation of networks
- network-institution with office

success factors for biotech-regions



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- danger of “critical mass”
- attractive cultural and living condition
- “learning region” keeps vitality and flexibility



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- *Michael E. Porter:*
- Paradox of Location - „enduring competitive advantage in a global economy lies increasingly in local things - knowledge, relationships, motivations, that distant rivals cannot match“



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- **Thank You!**