

Responsible Entrepreneurship: Vision, Development and Ethics

The Emerging Model of Regional Triple Helix

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<http://xiv.triplehelixconference.org/>



Responsible Entrepreneurship: Vision, Development and Ethics

Background

Publications

Todeva, E. and Danson, M. (2016) 'Regional Dimensions of the Triple Helix Model', *Industry and Higher Education*, 30 (1): 5-12.

Danson, M. and Todeva, E. (2016) 'Government and Governance of Regional Triple Helix Interactions', *Industry and Higher Education*, 30 (1): 13-26.

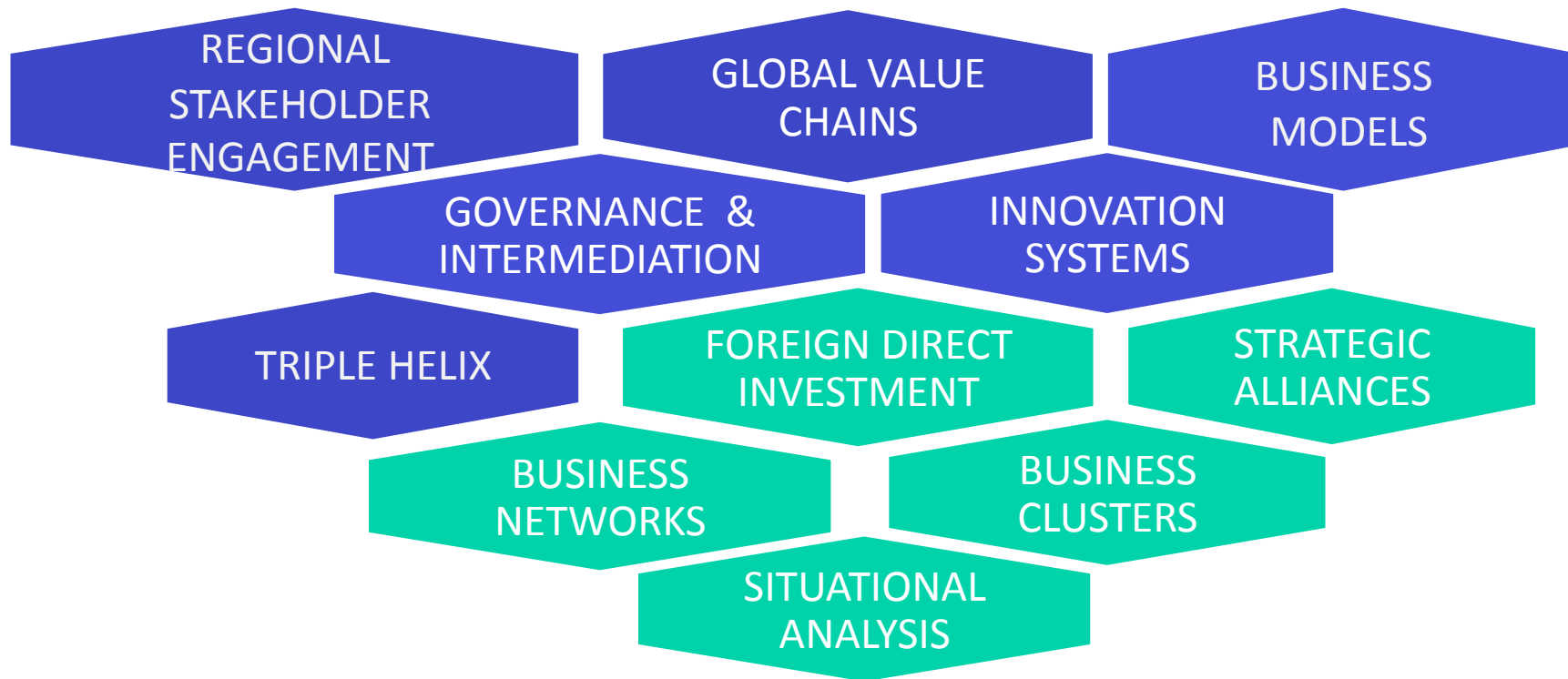
Presentations

Todeva, E. (2016) *Value Chain Strategic Development Model for Inter-Regional Cooperation*. Industrial Modernisation and Agro-food Smart Specialisation Platforms, SMART REGIONS conference, Brussels.

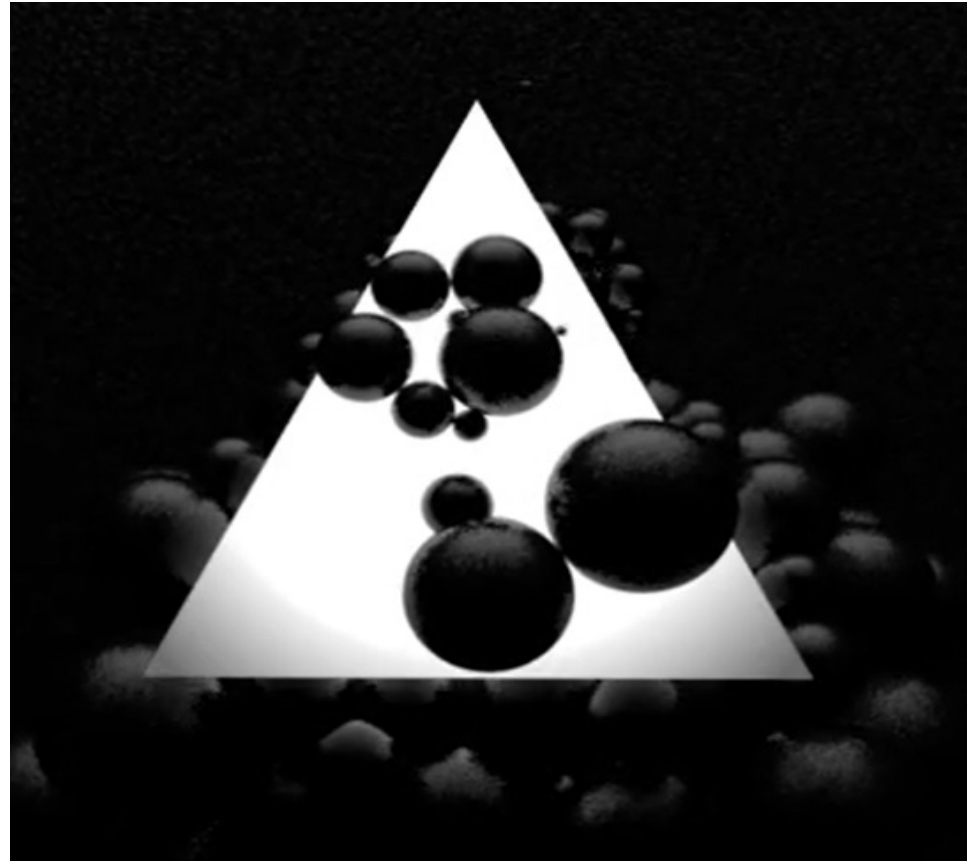
Todeva, E. (2016) *Measuring Innovation in Europe for future growth*, Dubai, January 2016.

Todeva, E. (2015) RIO Country Report Bulgaria 2014, JRC Science and Policy Report, European Commission, Institute for Prospective Technological Studies.

Interdisciplinary Research Portfolio

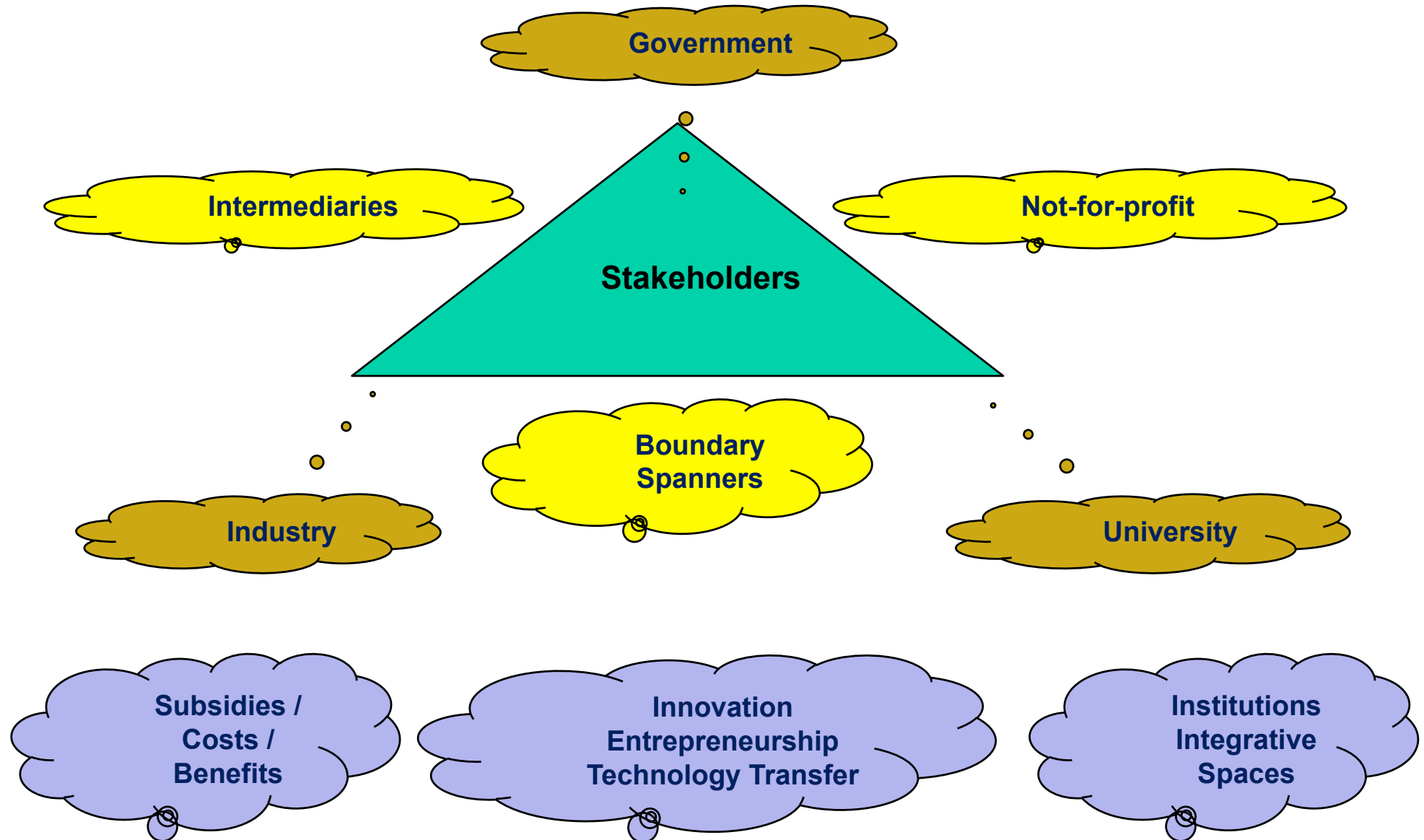


Triple Helix and Collaborative Governance: Simplicity from Complexity

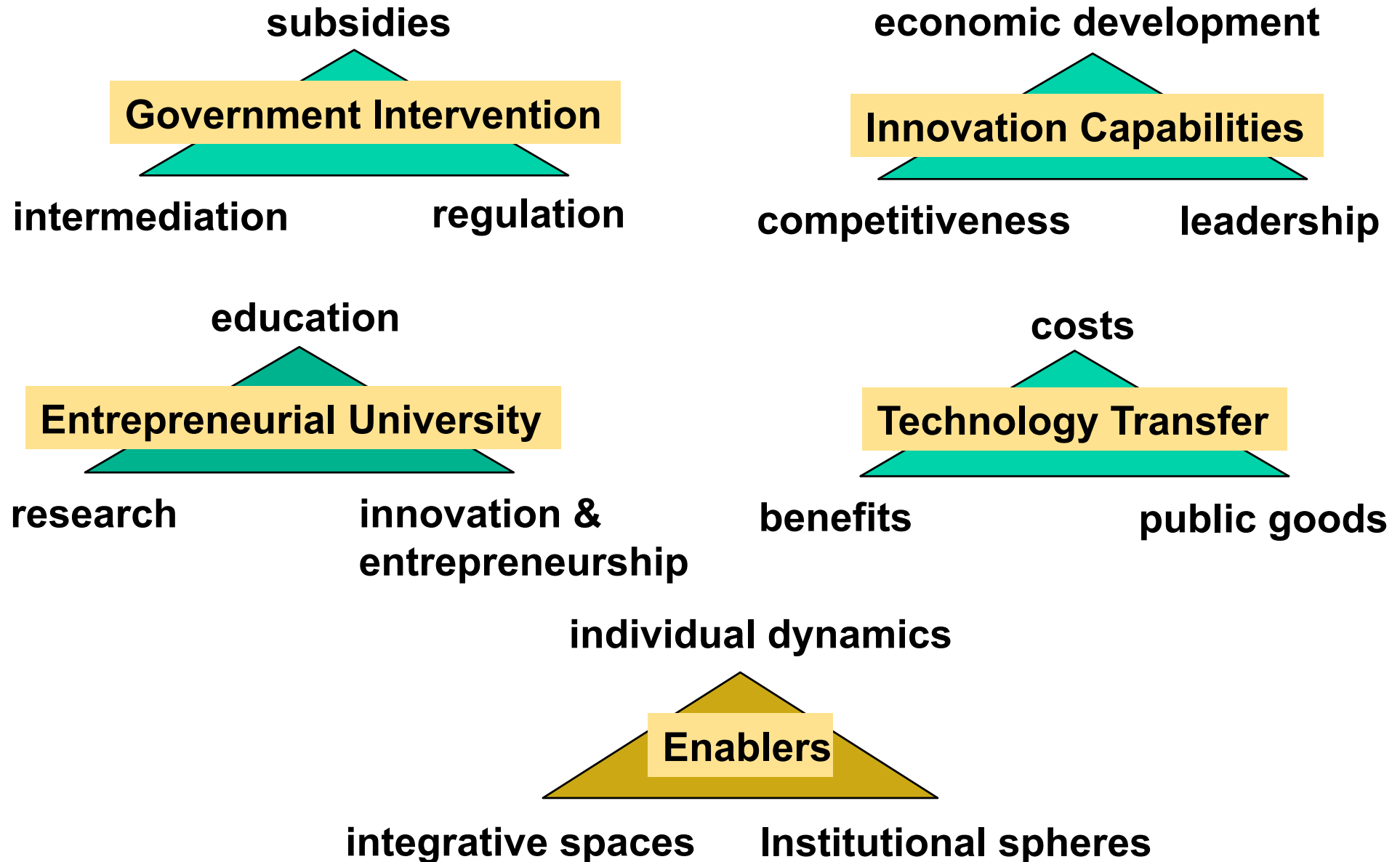


Source: Yordi Uytersprot, <https://vimeo.com/19330803>

How Institutions Can Enhance the Effectiveness of the TH Relationships



The Triple Helix Model

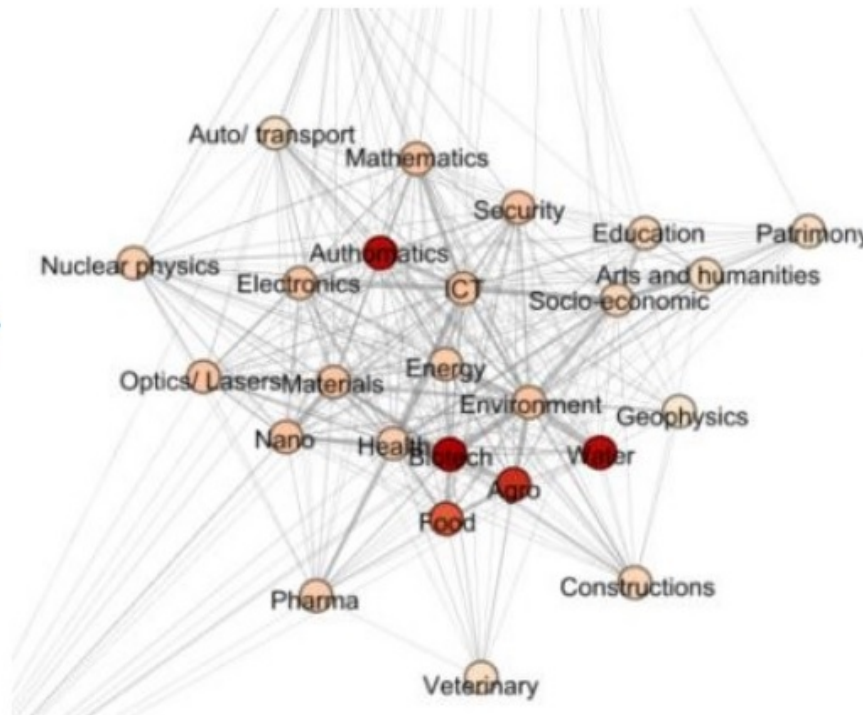


Innovation and Entrepreneurship in Romania

29 fields have been identified by integrating different inputs

- Aeronautics
- Agro
- Food
- Water
- Arts & humanities
- Auto/ transport
- Automatisation
- Biotech
- Constructions
- Education
- Electronics
- Energy
- Pharma
- Nuclear phys.
- Geophysics
- ICT
- Mathematics
- Materials (new)
- Veterinarian
- Environment
- Nanotech
- Naval
- Optics
- Patrimony
- Health
- Security
- Socio-economic
- Space
- Textiles

Data analytics proposed clustering

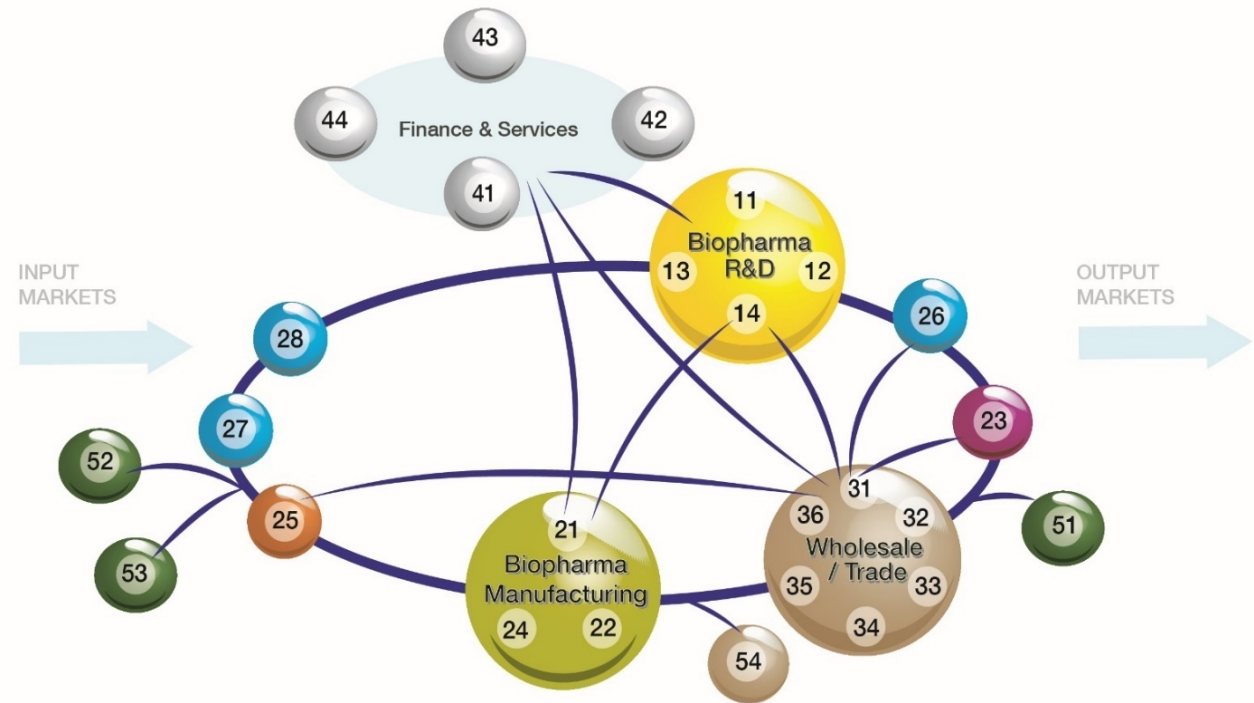


13 fields have been validated in a key stakeholders' meeting for structuring the consultations

- Agro-Food
- ICT
- Intelligent systems
- Health
- Energy
- Pharmaceuticals
- Environment
- Security
- Space
- Materials
- Biotechnologies
- Transport
- Socio-economic

Biopharma Global Value Network Flows: Mapping ownership and supply relationships of the top 20508 firms that participate in the Biopharma GVC

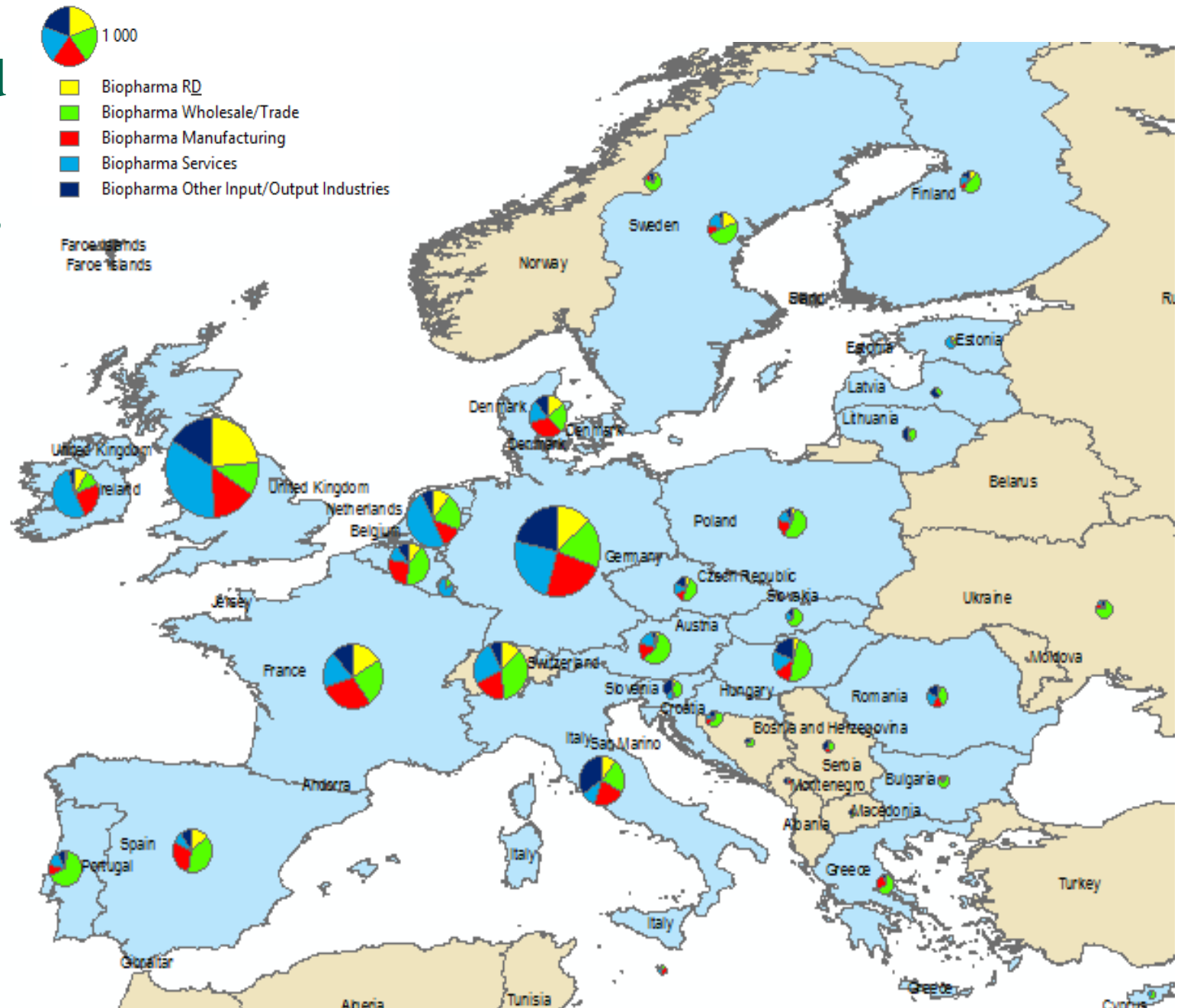
Number	Cluster
11	Biopharma R&D
12	Biopharma R&D & manufacturing
13	Biopharma R&D & services diversified
14	Clinical research & human health activities
21	Bio-pharma manufacturing
22	Biopharma manufacturing and wholesale
23	Perfumes and cosmetics manufacturing
24	Biopharma manufacturing multi-diversified
25	Chemical & biopharma manufacturing diversified
26	Medical instruments, dental & electrotherapeutic manufacturing
27	Manufactured goods, electronics and instruments
28	Special purpose machinery and equipment
31	Specialised biopharma wholesale
32	Biopharma retail
33	Biopharma & cosmetics wholesale
34	Pharma wholesale trade & services diversified
35	Chemical & biopharma wholesale
36	Medical & hospital equipment wholesale & supplies
41	Holding, financial & administrative head office services
42	Other business and management services
43	Finance & insurance services
44	Miscellaneous services
51	Agriculture, food processing & drinks of bio products
52	Manufactured miscellaneous goods
53	Electricity, gas and water supply & services
54	Other miscellaneous wholesale



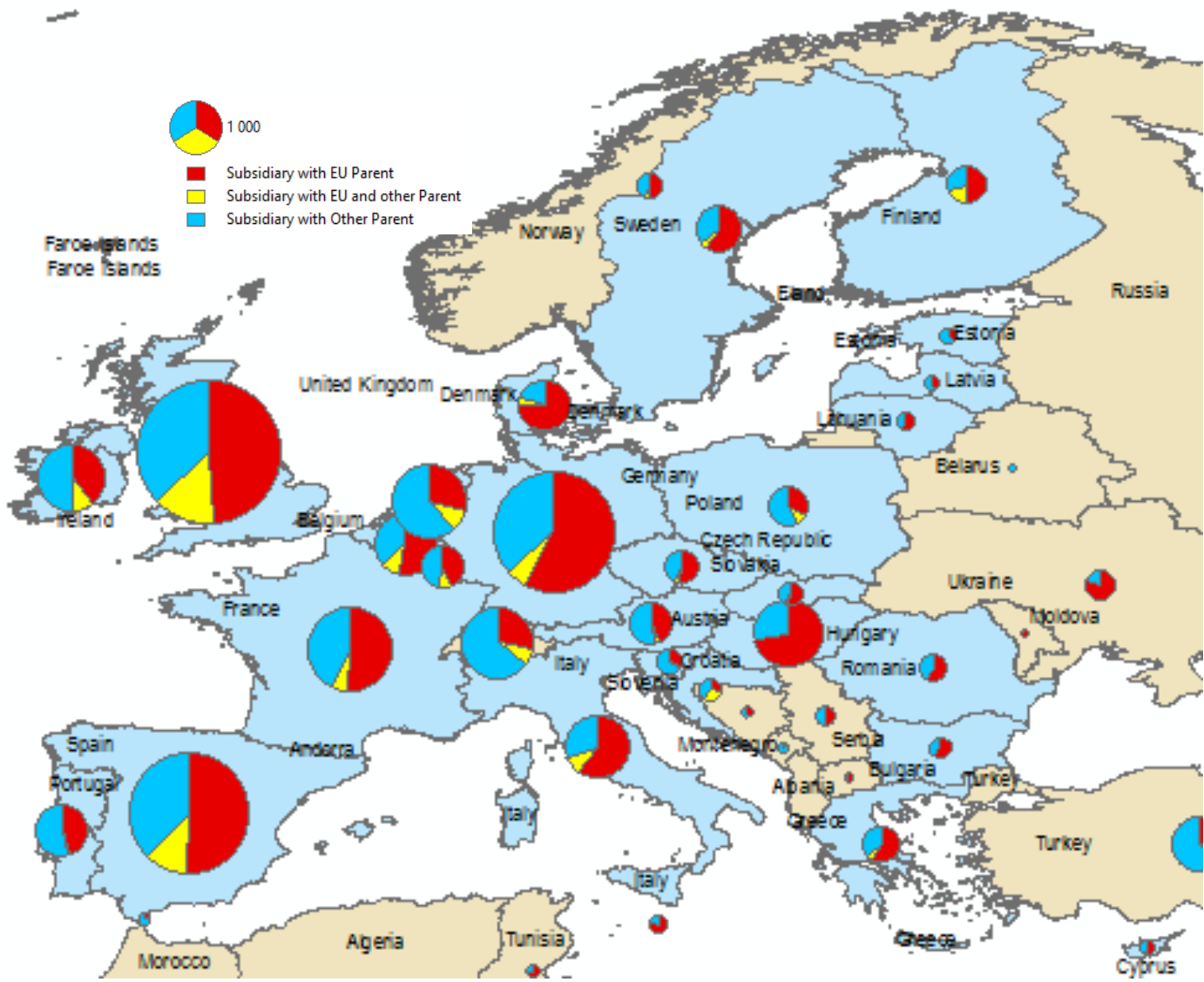
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- Biopharma is the fastest growing sector in Europe, attracting the largest proportion of investment, with 77 multinational firms and 6505 operating establishments
- The average R&D investment by the parents is over €53 mln (2013) with average profits of €49 mln (2013) and revenue from sales over €512 mln (2013)
- Biopharma GVC is entangled in finance, business and management services, and wholesale, retail, trade services that secure financing of the R&D and the manufacturing operations
- There is simultaneously increasing specialization within firms, and new emergent diversification portfolios
- The GVC is pulled by the output markets, including pharma wholesale and retail (31, 32), cosmetics (23), medical instruments, dental, hospital and electro-therapeutic manufacturing (26) and agro-food, drinks and bio-products (51)
- Innovation from all other sectors is integrated in the biopharma GVC, including chemicals, plastics, eco-bio products, miscellaneous products, miscellaneous services, medical and hospital services

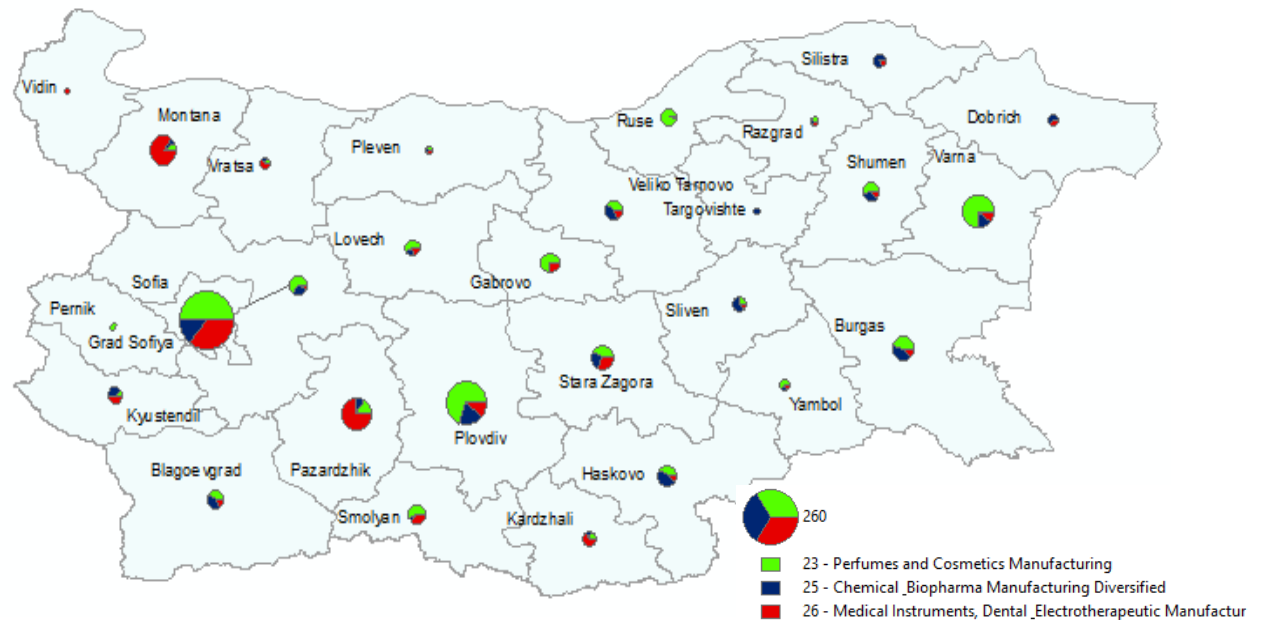
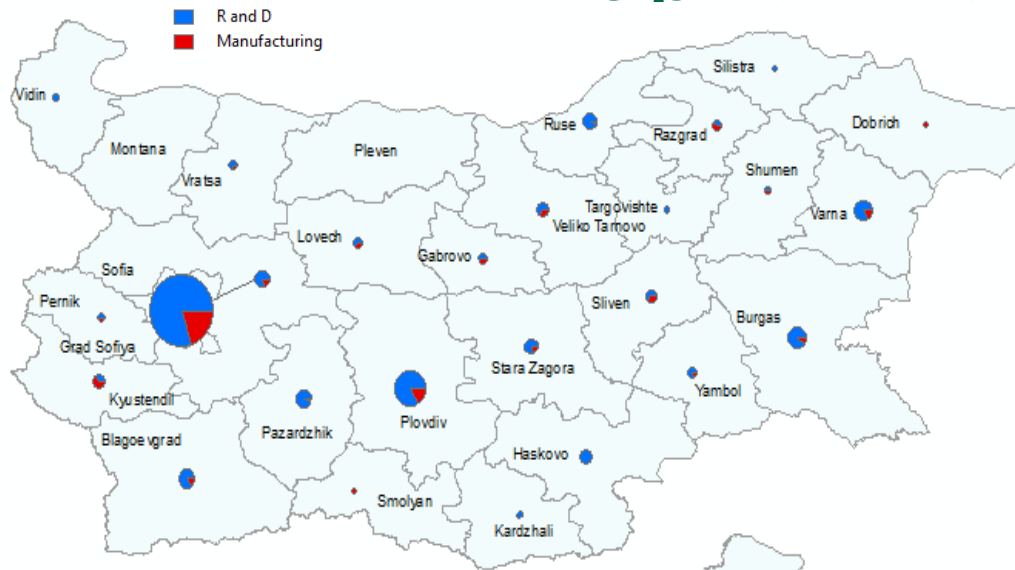
European Parents and Subsidiaries (6505 firms)



Subsidiaries by Source of Ownership (EU vs. Other, 29,237 firms)



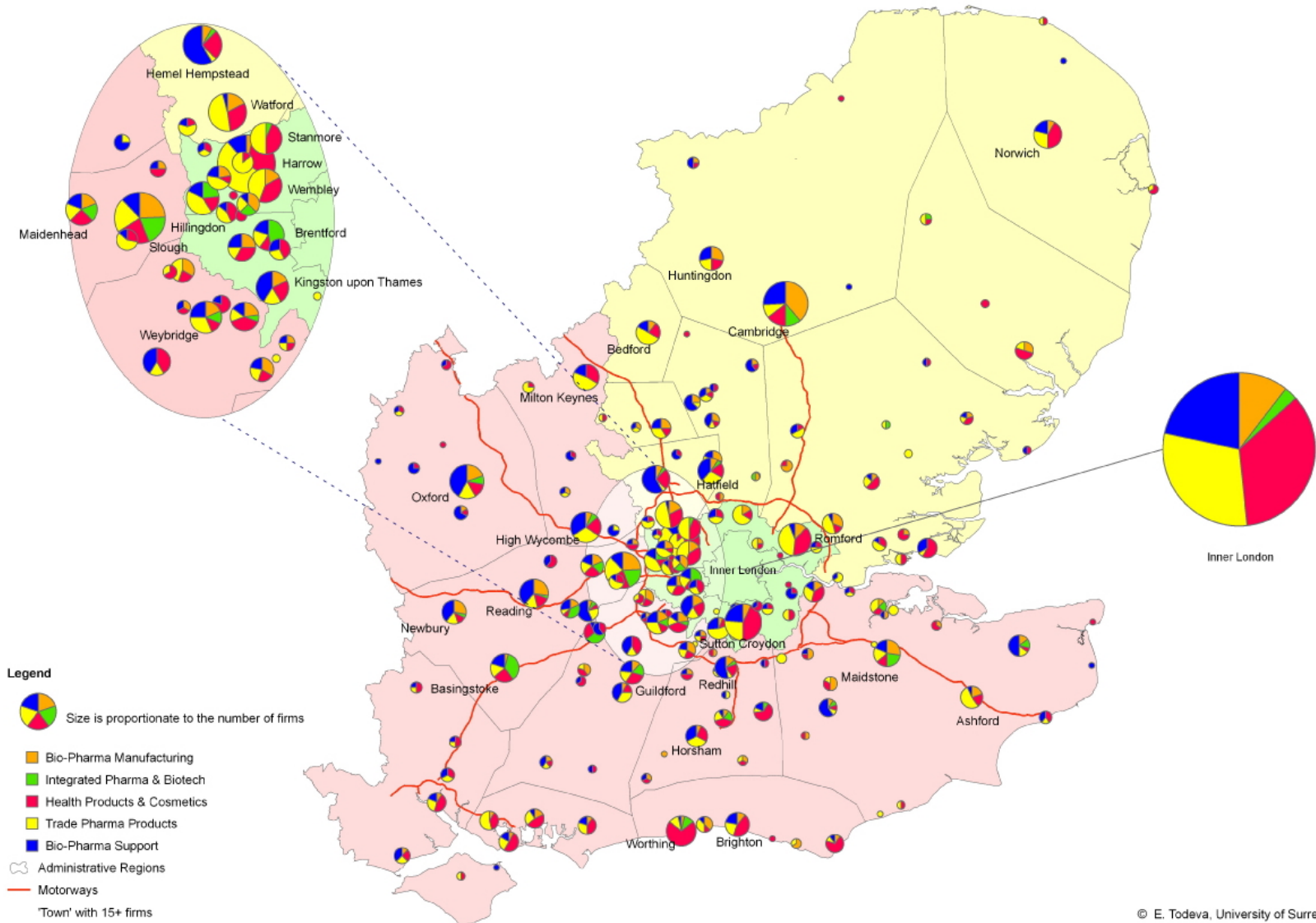
Bespoke Bulgarian Biopharma Database



Biopharma capabilities in the Vanguard cities

Subsidiaries in City	Count
BARCELONA	194
BARCELONE	1
BOLOGNA	5
BRUSSELS	2
COPENHAGEN	2
COPENHAGEN K	3
DRESDEN	13
DÜSSELDORF	17
EDINBURGH	94
FALUN	2
KRAKOW	2
LILLE	3
LINZ	3
LINZ POSTFACH	1
LYON	28
MAASTRICHT	1
MAASTRICHT-AIRPORT	2
MALMÖ	7
MALMO	1
MILAN	2
MILANO	134
NANTES	1
OVIEDO	11
PAMPLONA/IRUÑA	3
PORTO	11
STUTTGART	4
TAMPERE	10
VITORIA-GASTEIZ	3
Total	560

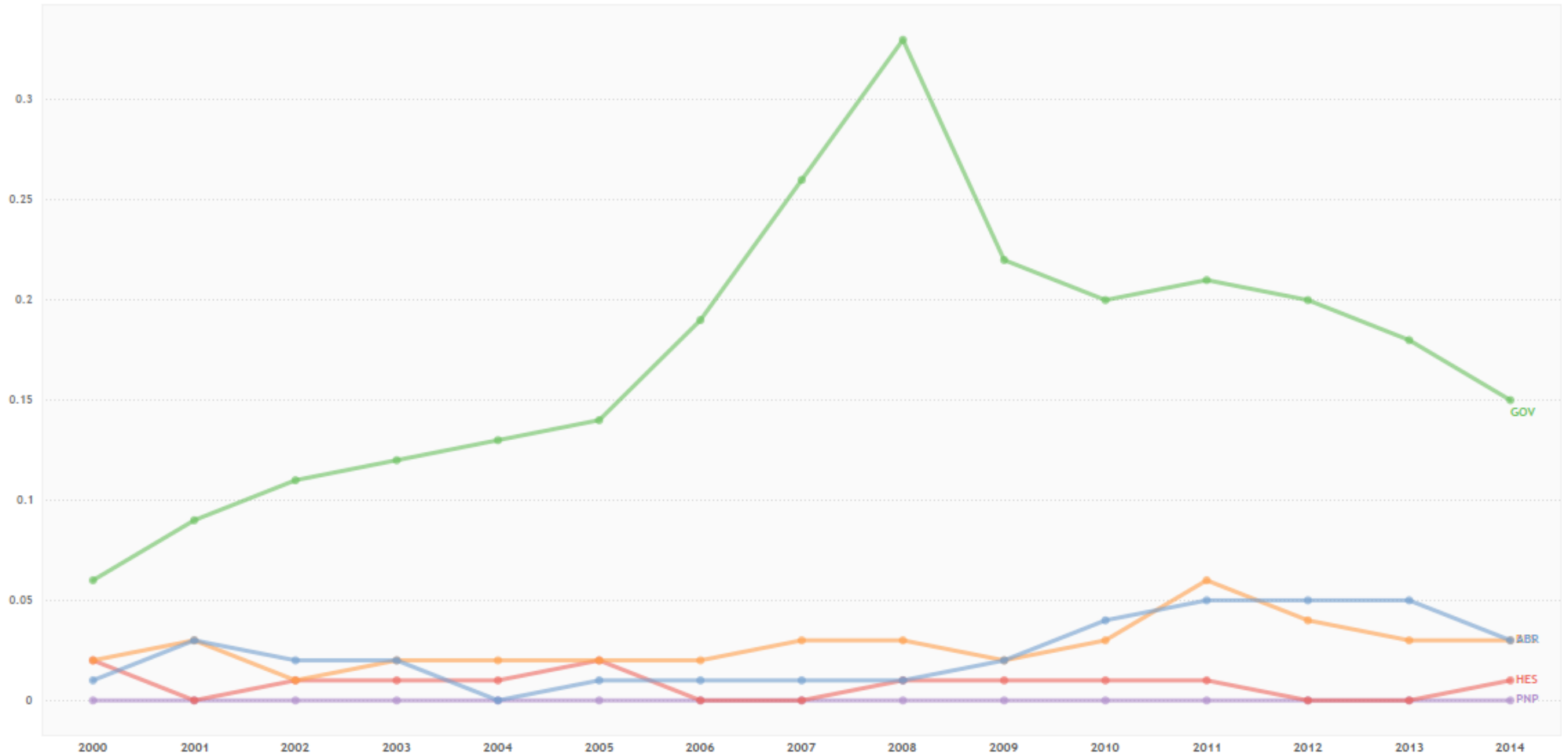
Biomedical and Biopharma Capabilities in the GSE (UK)



Bespoke GSE (UK) biomedical and biopharma dataset (2008)

COUNTRY Romania

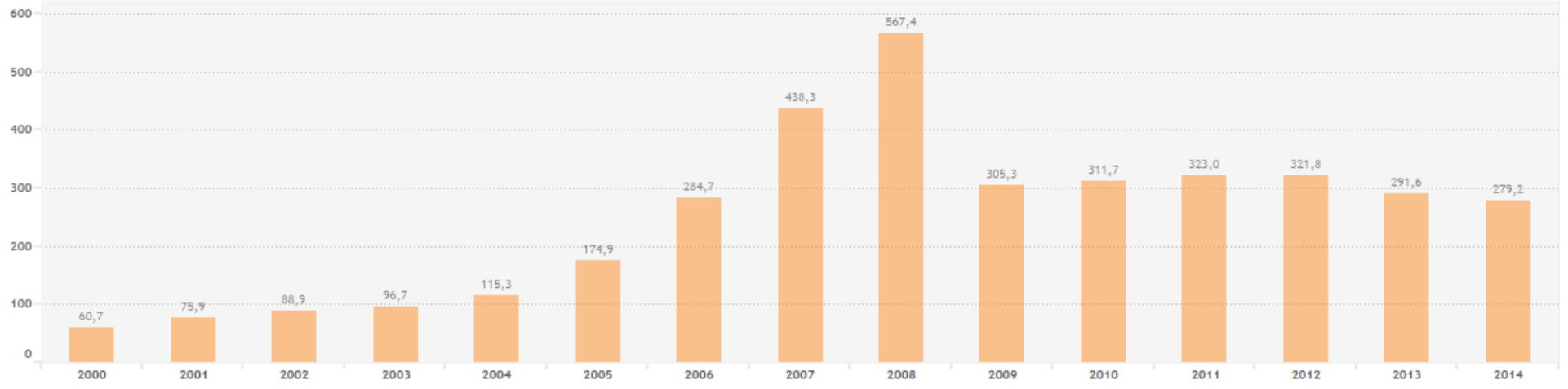
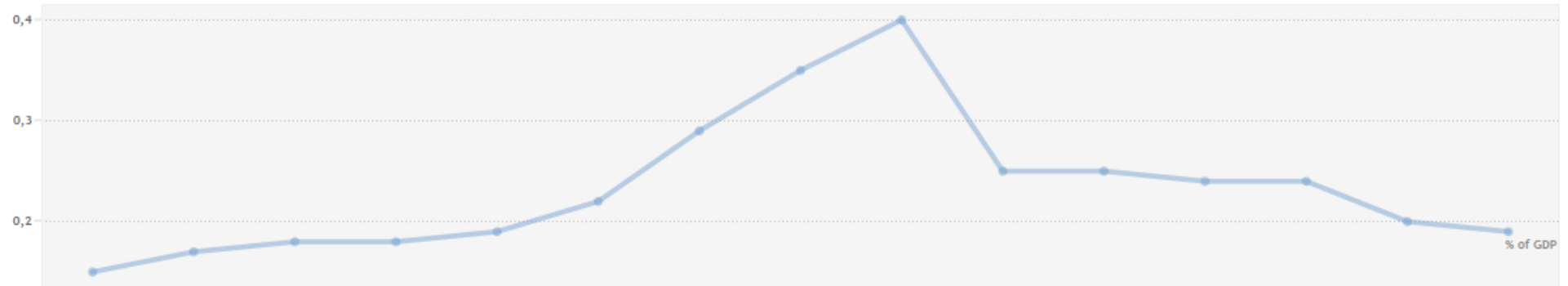
UNIT Percentage of GDP



RIO Indicator: Public R&D by source of financing Country: Romania Unit: Percentage of GDP
ABR: Abroad BES: Business Enterprise Sector GOV: Government Sector HES: Higher Education Sector PNP: Private Non-Profit Sector

COUNTRY Romania

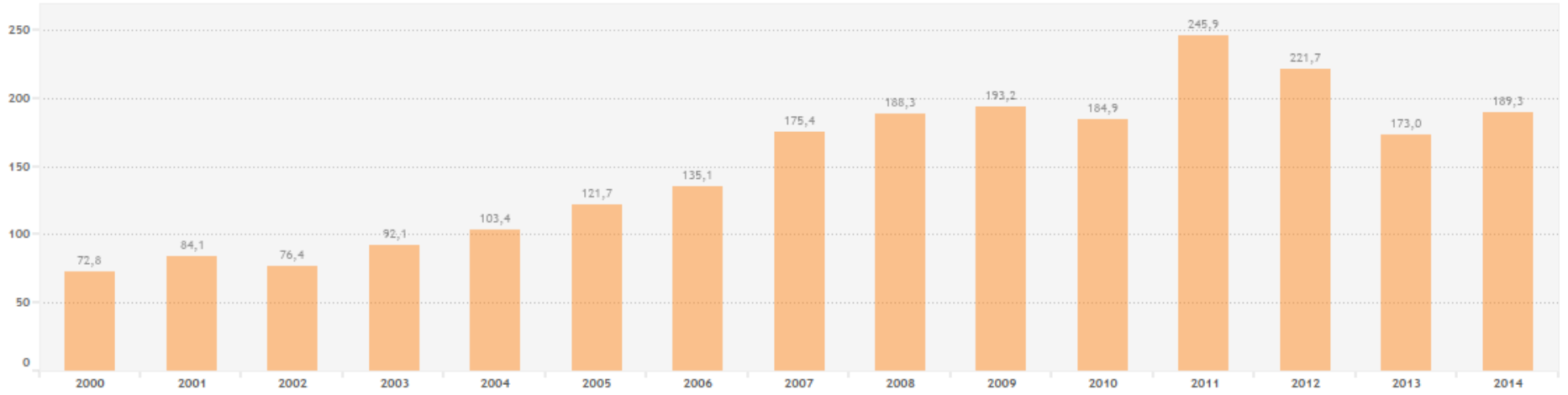
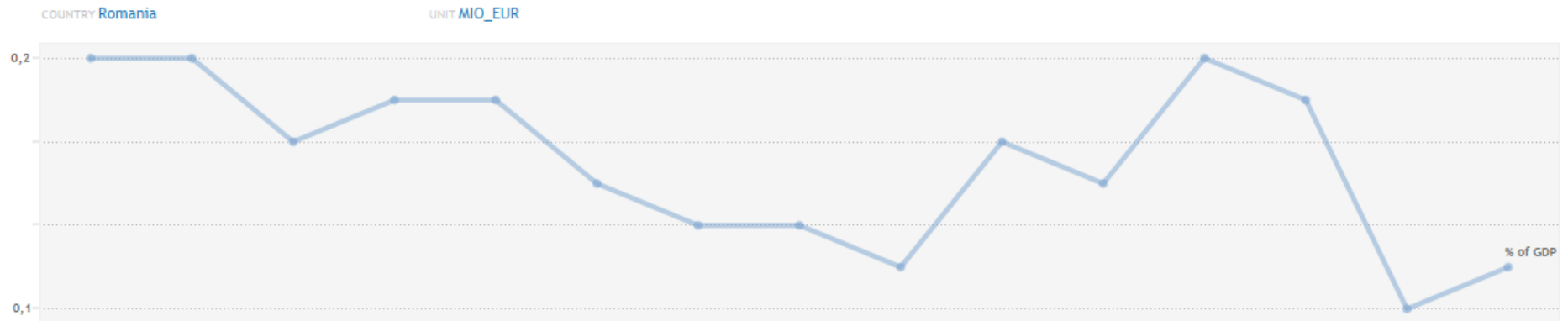
UNIT MIO_EUR



Indicator: Total Intramural R&D expenditure (GERD) financed by government (GOV) Country: Romania Unit: % of GDP and Million euro

PERCENTAGE OF GDP

MILLION EURO

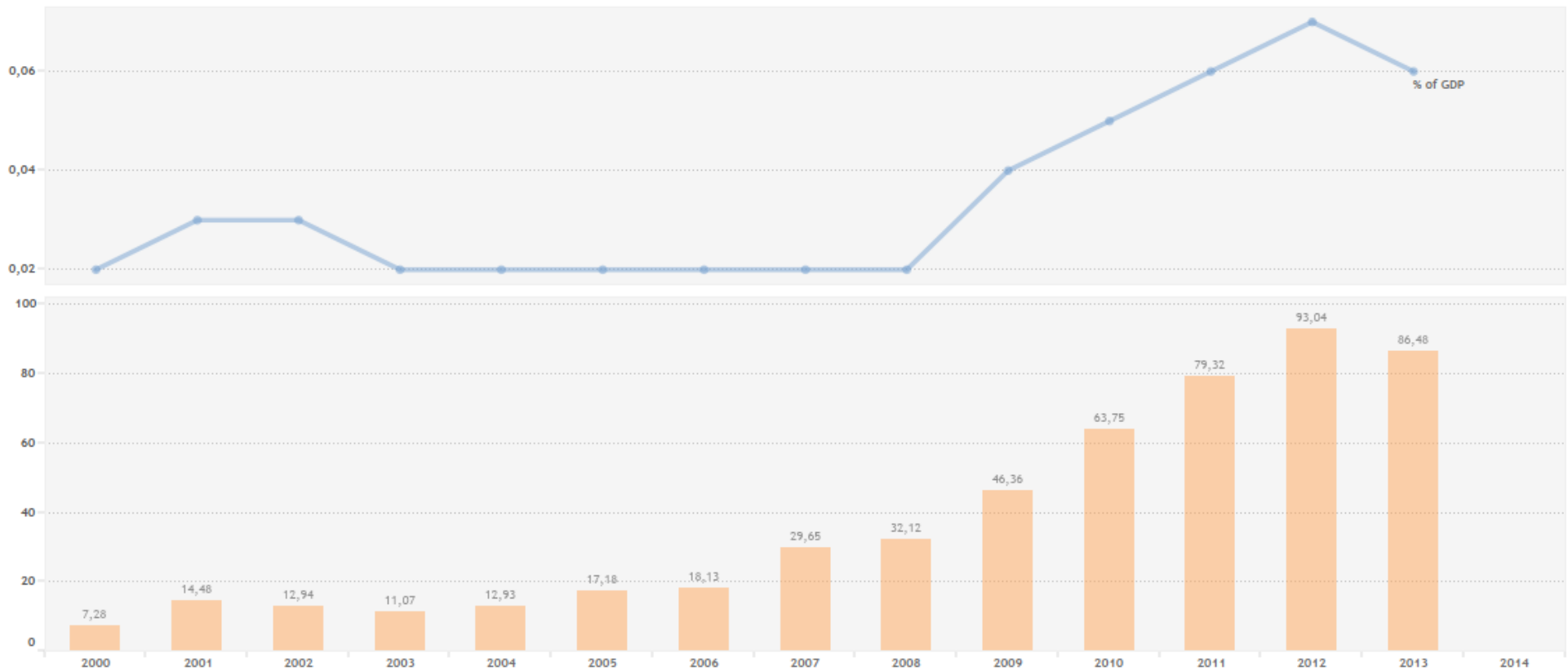


Indicator: Total Intramural R&D expenditure (GERD) financed by business enterprise (BES) Country: Romania Unit: % of GDP and Million euro

PERCENTAGE OF GDP MILLION EURO

COUNTRY Romania

UNIT MIO EUR

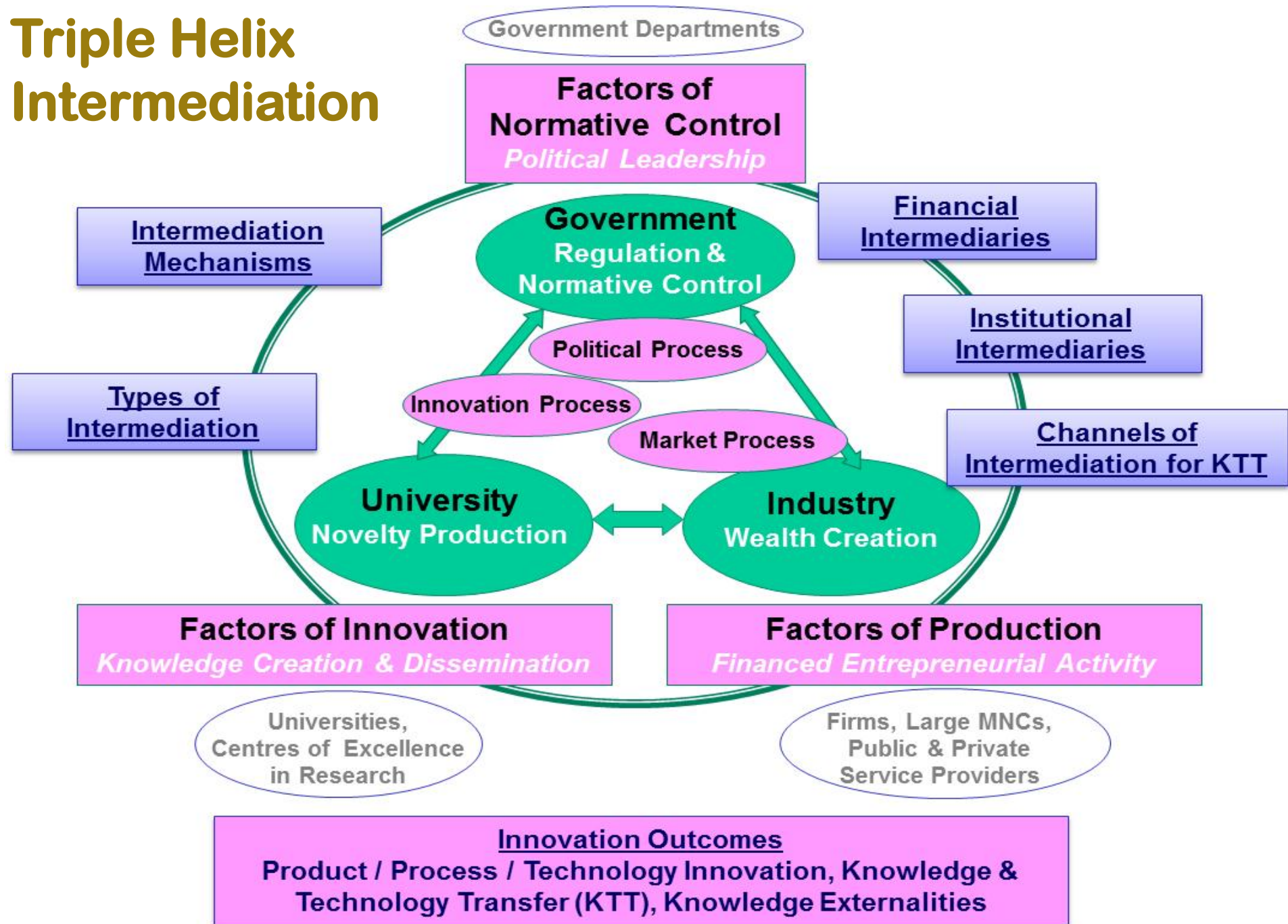


Indicator: Total Intramural R&D Expenditure (GERD) financed by Abroad (ABR) Unit: % of GDP and Million euro Country: Romania

PERCENTAGE OF GDP

MILLION EURO

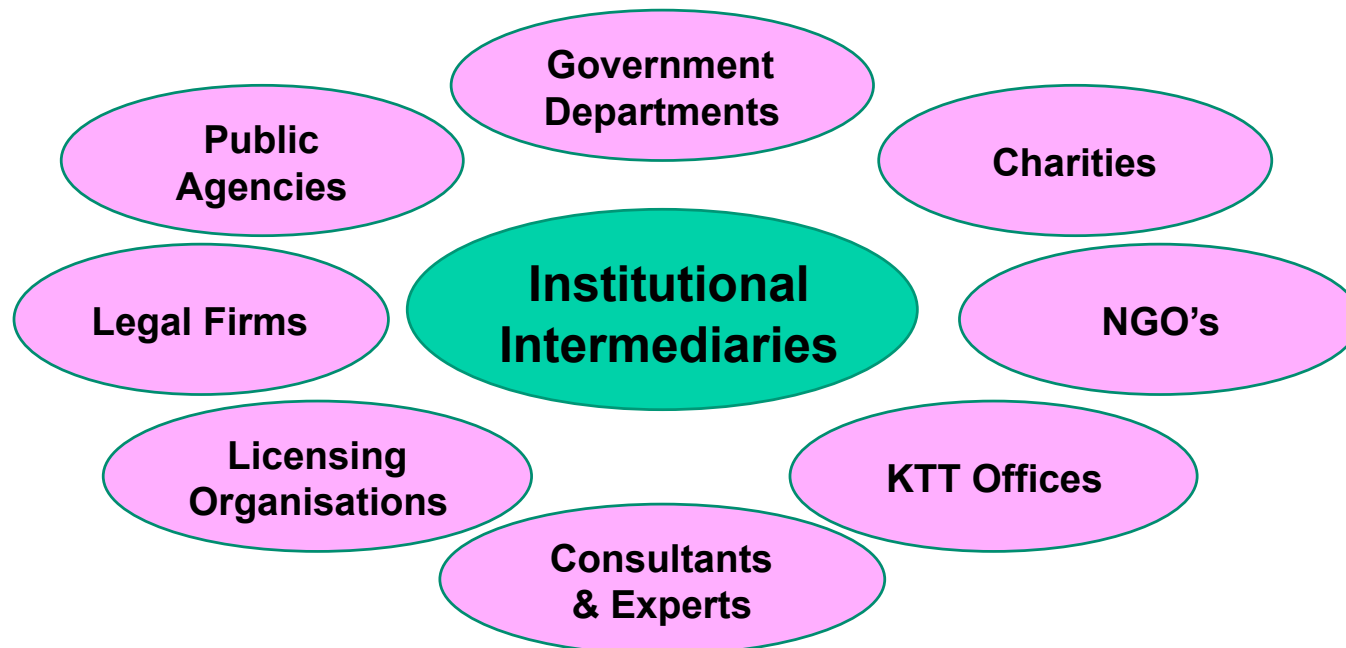
Triple Helix Intermediation



Institutional Intermediation & Relationship Management

Institutions are involved in:

- **Distribution of resources**
- **Events management**
- **Project management**
- **Representation, certification and legal advice**



Financial Intermediation

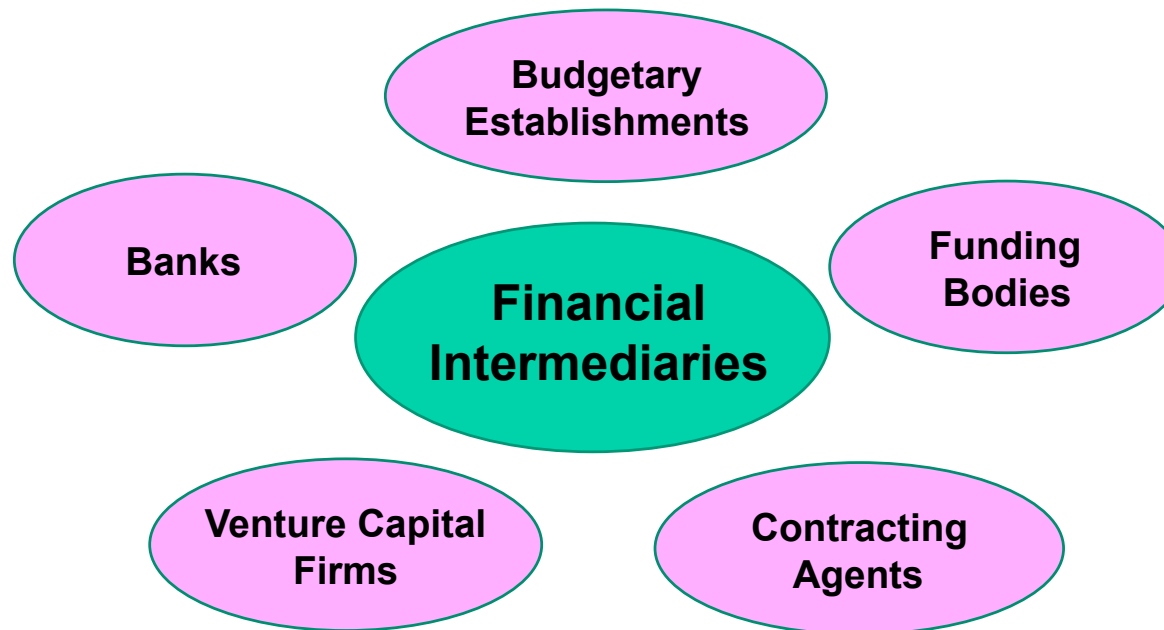
Government Budgetary Establishments (*fundamental research*)

Funding Bodies - Foundations, Charities, Voluntary Organisations (*applied research*)

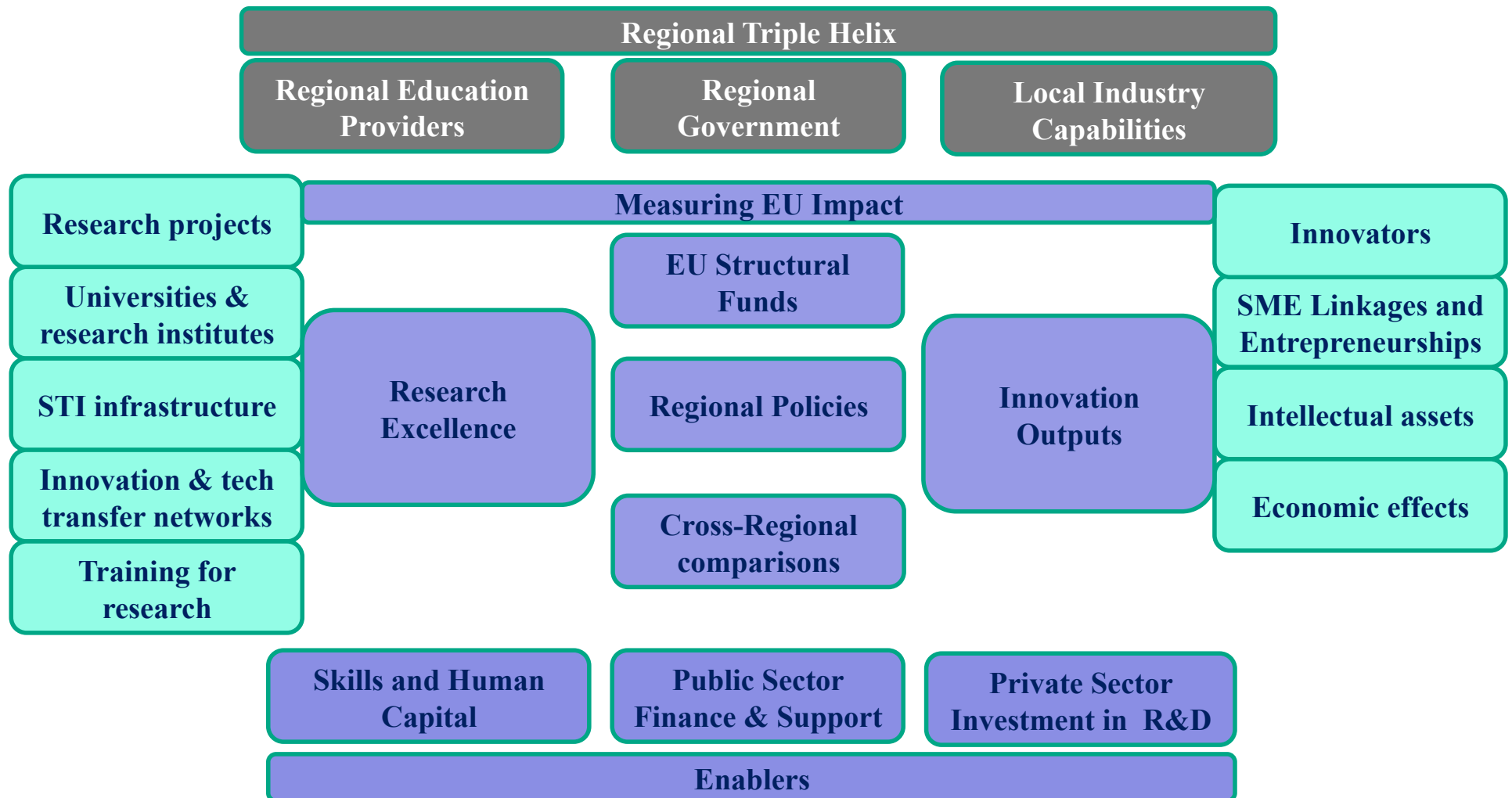
Banks (*experimental and developmental research*)

Venture Capital Firms (*experimental and developmental research*)

Contracting Agents

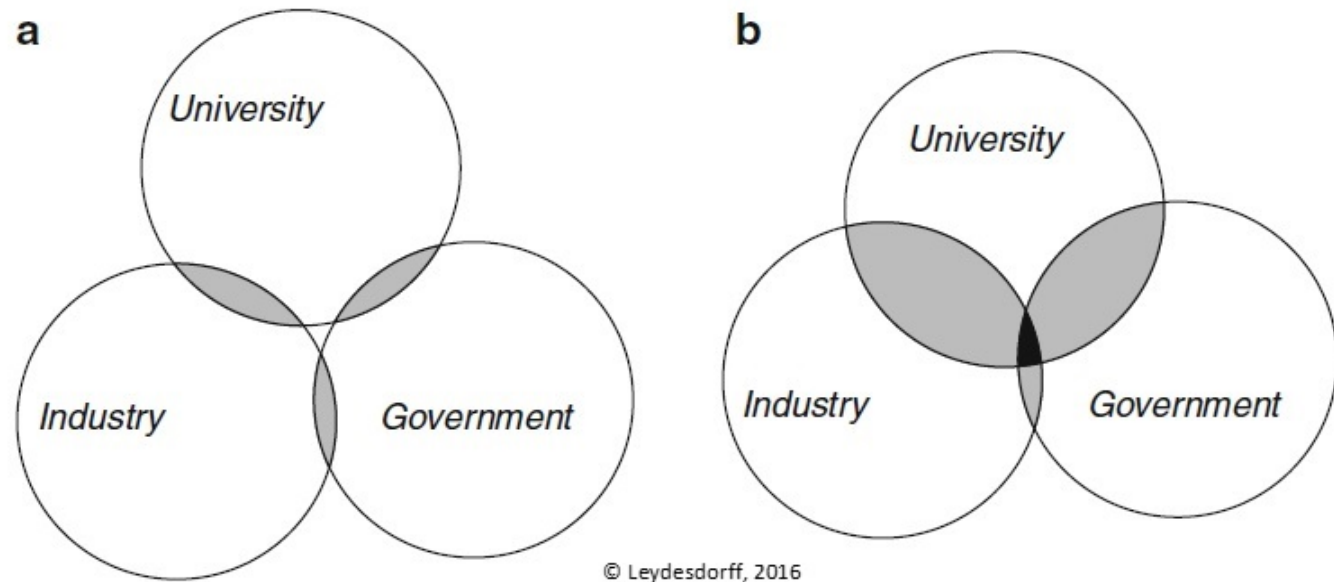


Drivers for Regional Triple Helix Interactions



Regional growth requires building a localised innovation system and co-alignment of the Triple Helix actors and interactions:
a Multistakeholder approach to RIS implementation

Triple Helix of University-Industry-Government Relations, Fig. 1 A triple helix configuration with negative and positive overlap among the three subsystems

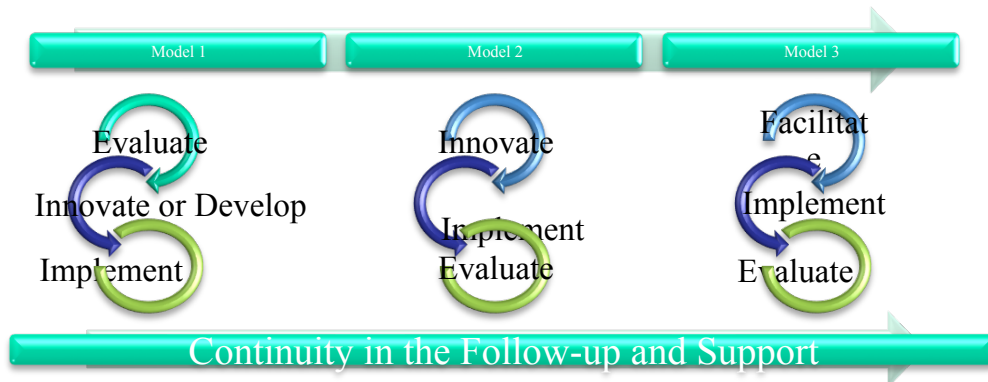


The Role of Regional Authorities



- *Mapping regional capabilities and stakeholders*
- *Analysis of activities, resources, capabilities and supply relationships*
- *Stakeholder engagement for value co-creation and development of ideas*
- *Building stakeholder awareness and orchestration of collaborative behavior*
- *Evaluation of innovation capabilities and promotion*
- *Facilitation of new value chain connectivity*
- *Assistance and support to stakeholder initiatives*

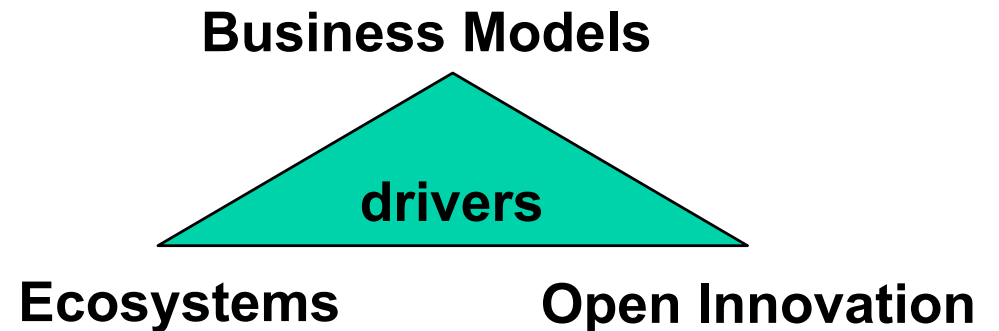
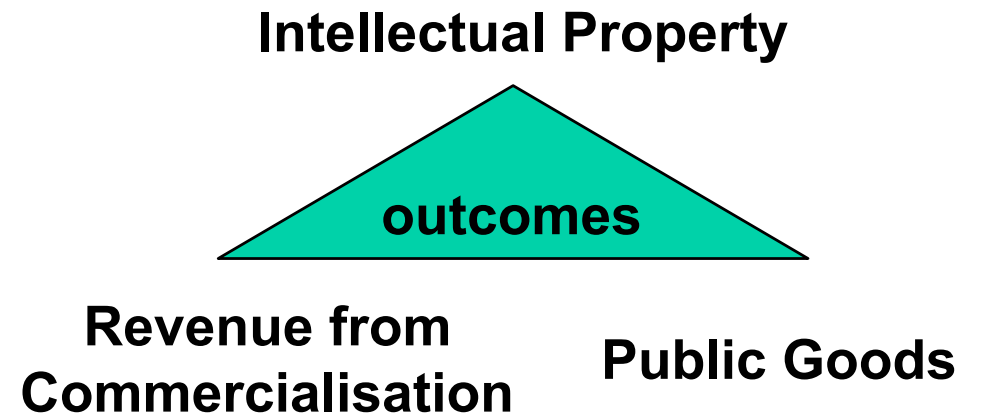
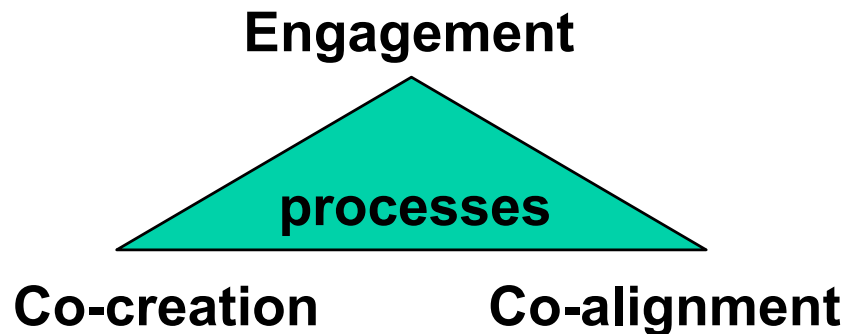
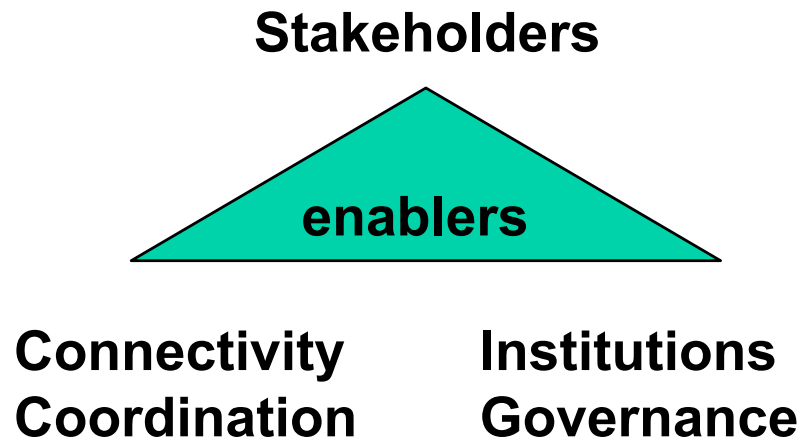
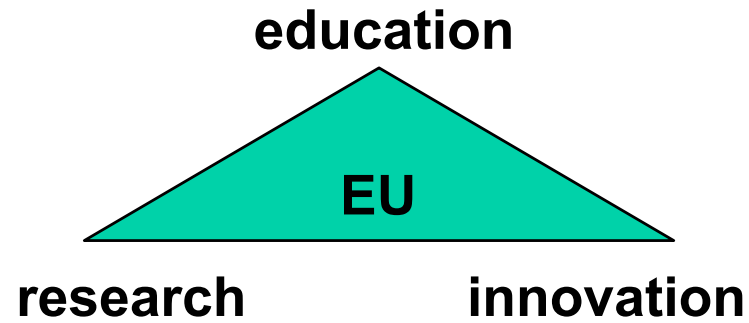
Innovation Dynamics



Stakeholder Engagement and Orchestration

- **Evaluate**
 - *Facilitate*
 - *Communicate*
- **Innovate or Develop**
 - *Facilitate*
 - *Communicate*
- **Implement**
 - *Facilitate*
 - *Communicate*
- **Evaluate**
- **Communicate**

From Triple Crisis to Triple Helix Solutions



Conclusions

- 1. The locus of Innovation is in partnerships and networks that require coordination and facilitation**
- 2. Intermediation enhances Absorptive Capacity in Universities, in Industry and in Government**
- 3. Intermediation reduces Costs and increases Opportunities for all agents**
- 4. Intermediaries provide specialised services and resources (information, capital) to networks and partnerships**
- 5. Intermediation and Facilitation enhances the outcomes from KTT (knowledge and technology transfer)**
- 6. Intermediation and Facilitation employ institutions and hybrid organisations that are difficult to subject to control and governance through traditional methods**
- 7. Empirical evidence demonstrates that intermediaries serve multiple purposes and employ a 2-way communication between intermediated agents and organisations**



Institutions, Intermediation and Triple Helix Relationships
**Special Issues of the Triple Helix: A Journal of University-Industry-
Government Innovation & Entrepreneurship (Springer)**

Global Value Chains and Firm Strategies
Special Issues of the Review of Business Management - RBGN

<http://www.bcned.co.uk/>
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