Industrial Modernisation and Smart Specialisation:

Value Chain Strategic Development Model for Inter-Regional Cooperation

Dr. Emanuela Todeva

Director BCNED

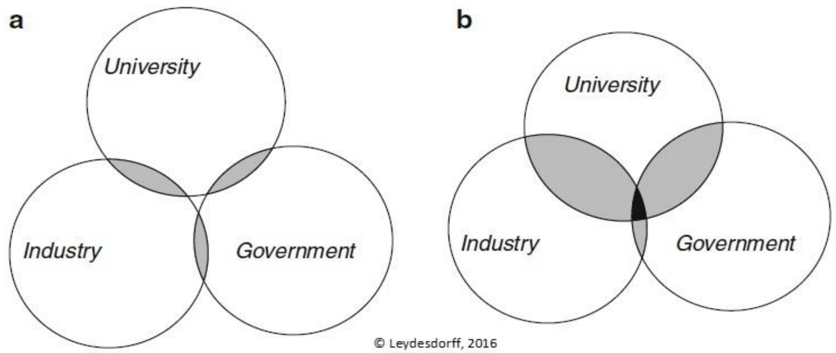
Business Clusters, Networks and Economic Development

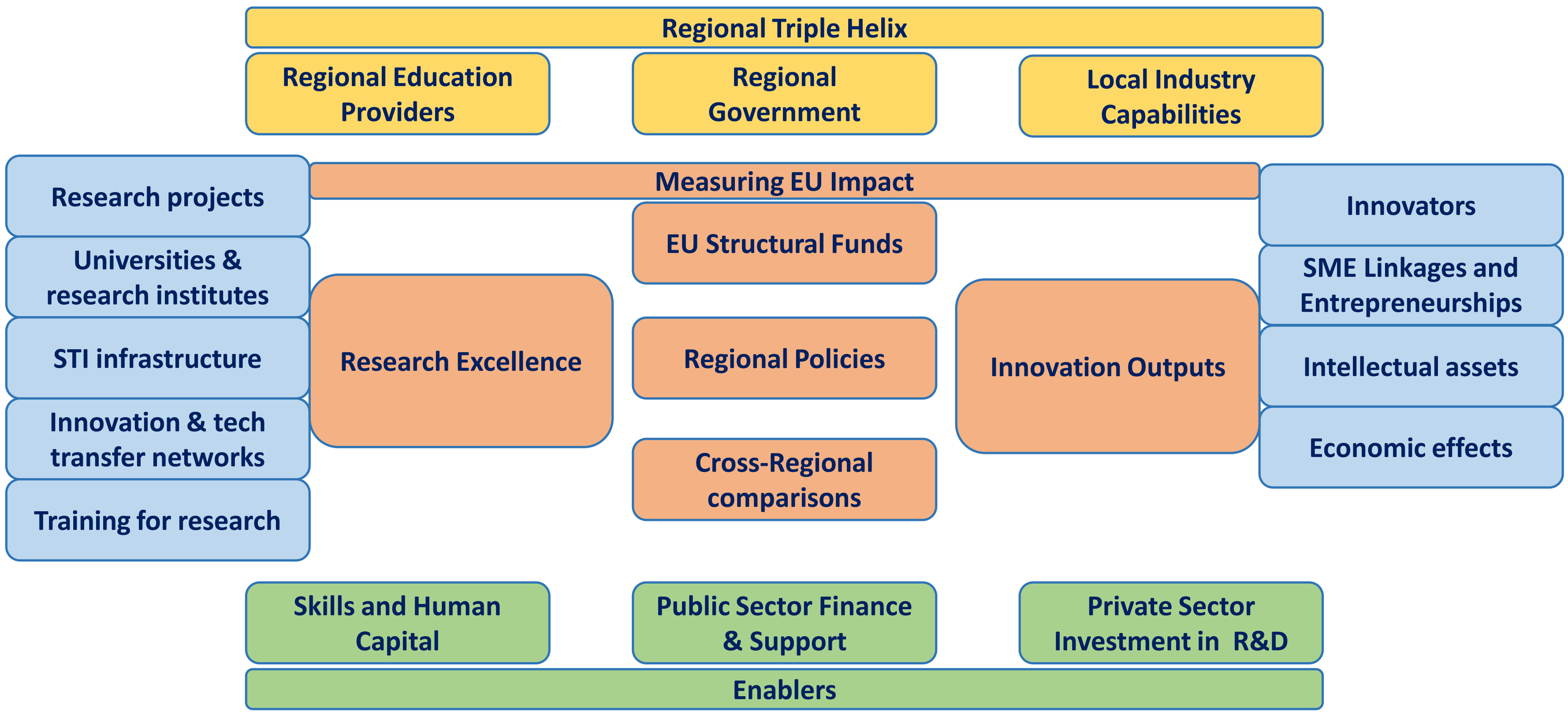
The Current Challenges for Regional Development and Inter-Regional Cooperation

- Developing demand-driven policies and strategies – i.e. *from resource allocation to maximizing business opportunities*
- Governing input-output economics in a sustainable circular economy
  - Understanding input-output relationships between firms and knowledge and resource providers
  - Mapping core value chain capabilities and identifying ‘regional gaps’
  - Developing auxiliary services to facilitate inter-organisational relationships
  - Making use of entrepreneurial initiatives and bi-products - i.e. innovation in the periphery – while striving for excellence
- Identifying niche areas of competitive strength and lead stakeholders
- Co-alignment of resources and strategies between private and public actors of different governance levels
- Support for innovation partnerships emphasizing greater co-ordination between different societal stakeholders
- Pro-active facilitation, intermediation, bridging and information sharing
- Adoption of key enabling technologies fostering economic growth, especially in low-tech EU regions
- Solving major societal challenges that exhibit themselves in a local context

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

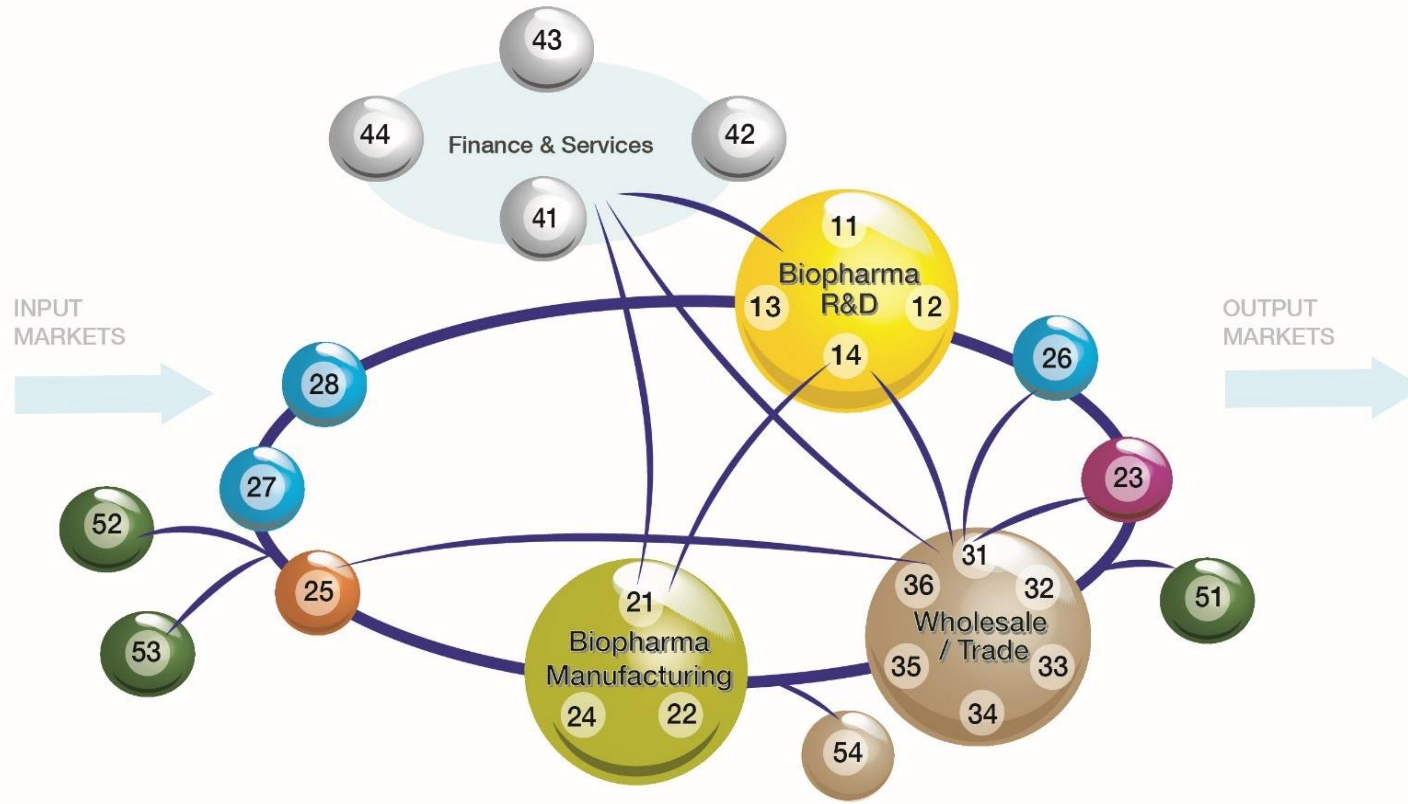
Triple Helix of University-Industry-Government Relations, Fig. 1 A triple helix configuration with negative and positive overlap among the three subsystems





Biopharma Global Value Chain Flows –

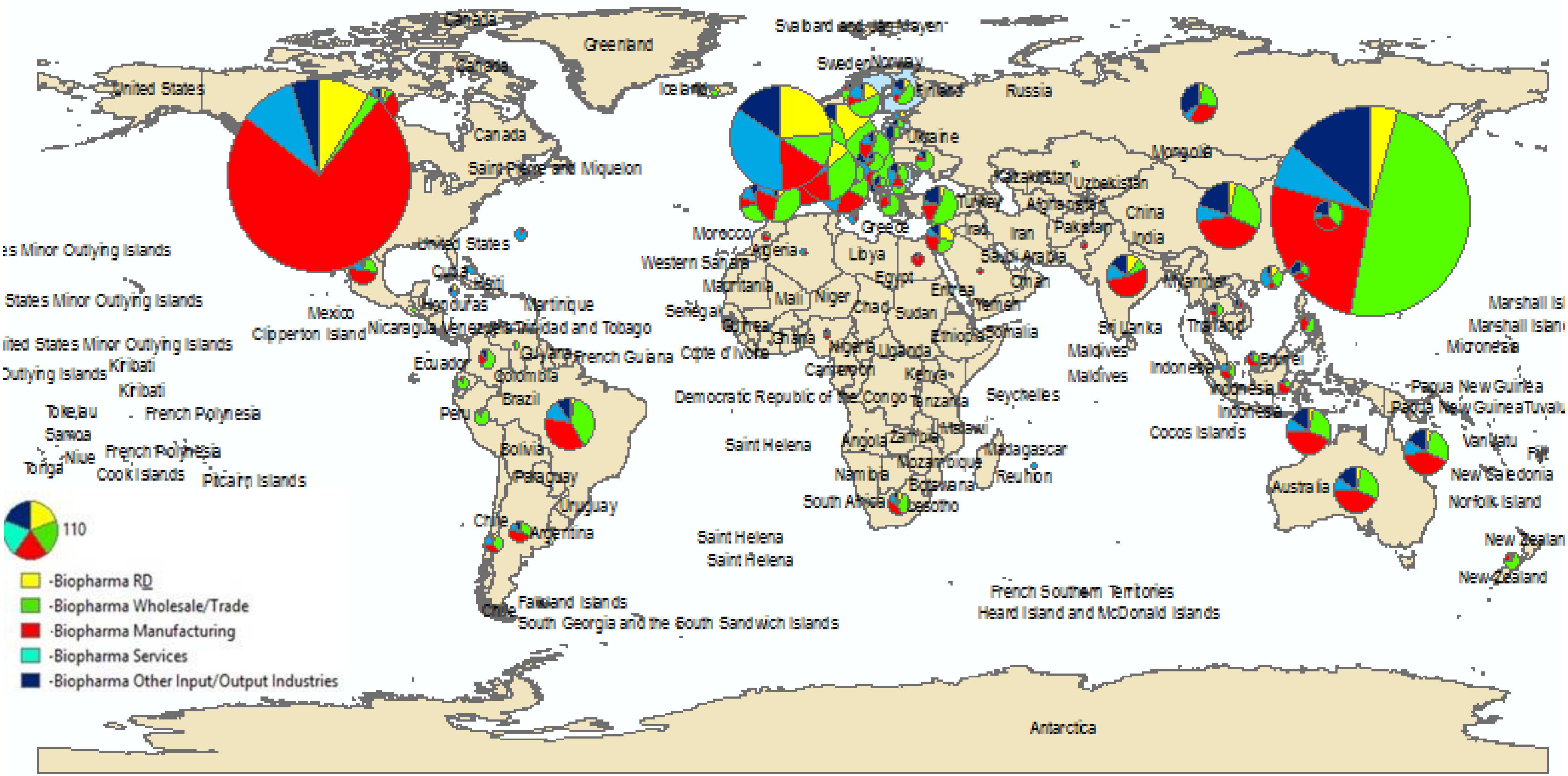
Mapping ownership and supply relationships of the top 20508 firms that participate in the Biopharma GVC



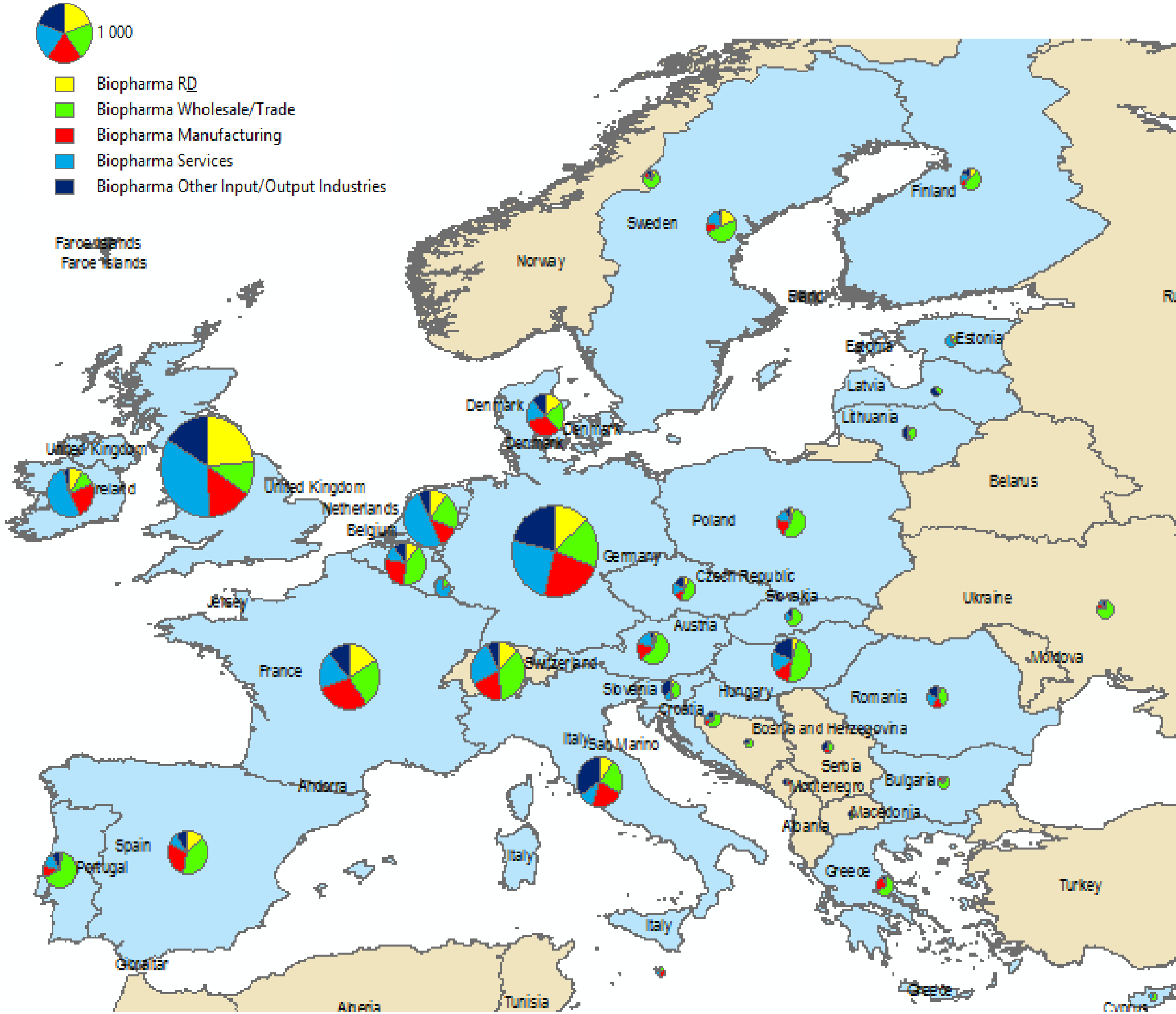
Number	Cluster
11	Biopharma R&D
12	Biopharma R&D & manufacturing
13	Biopharma R&D & services diversified
14	Clinical research & human health activities
21	Bio-pharma manufacturing
22	Biopharma manufacturing and wholesale
23	Perfumes and cosmetics manufacturing
24	Biopharma manufacturing multi-diversified
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

- 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

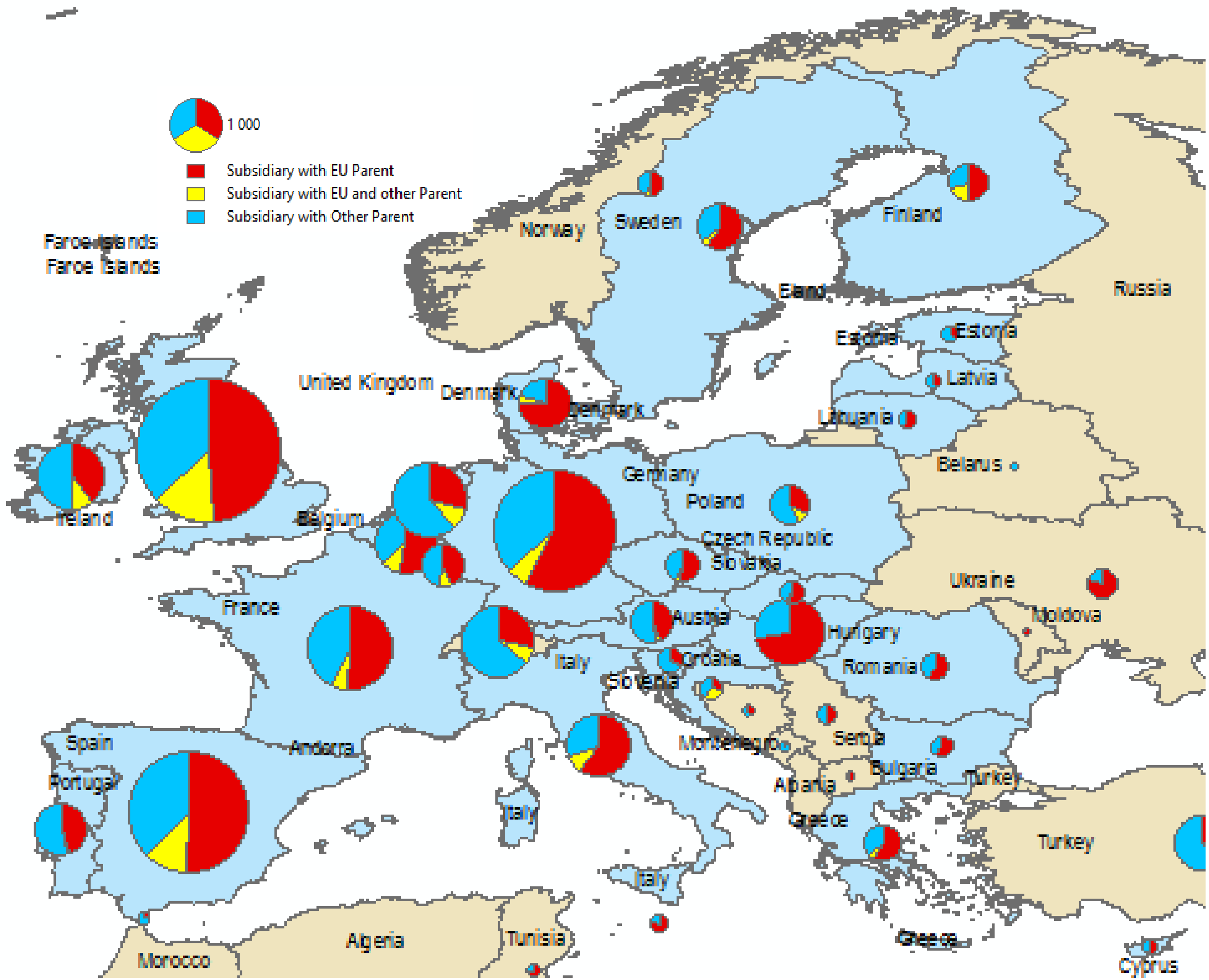
Global Biopharma (20508 firms)



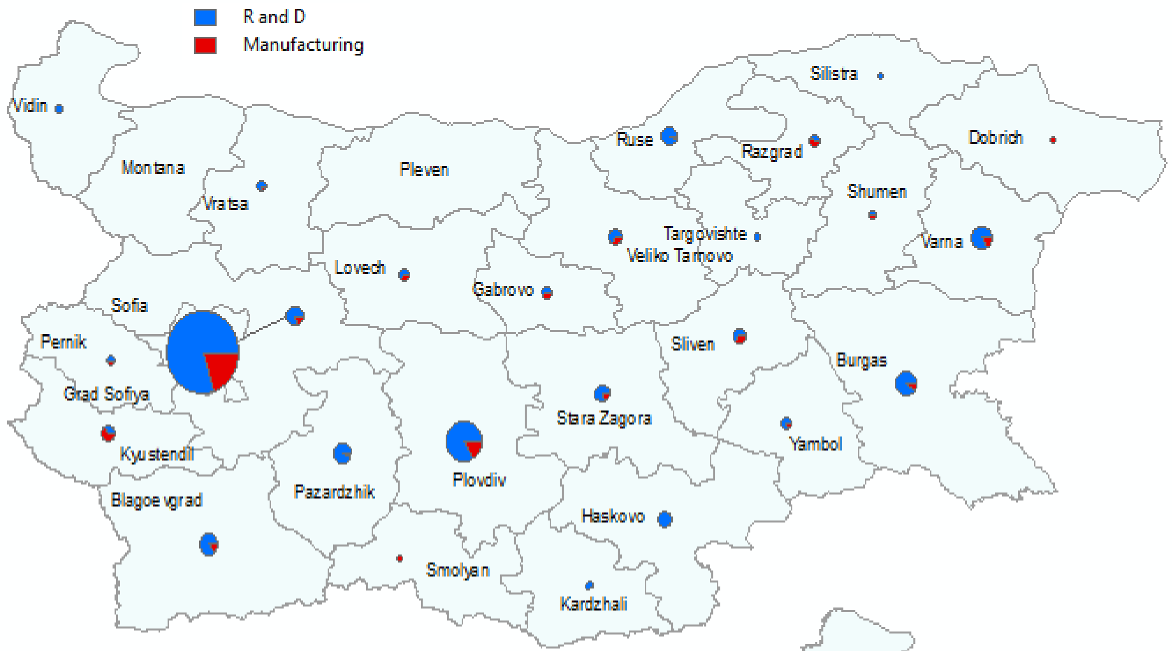
European Parents and Subsidiaries
(6505 firms)

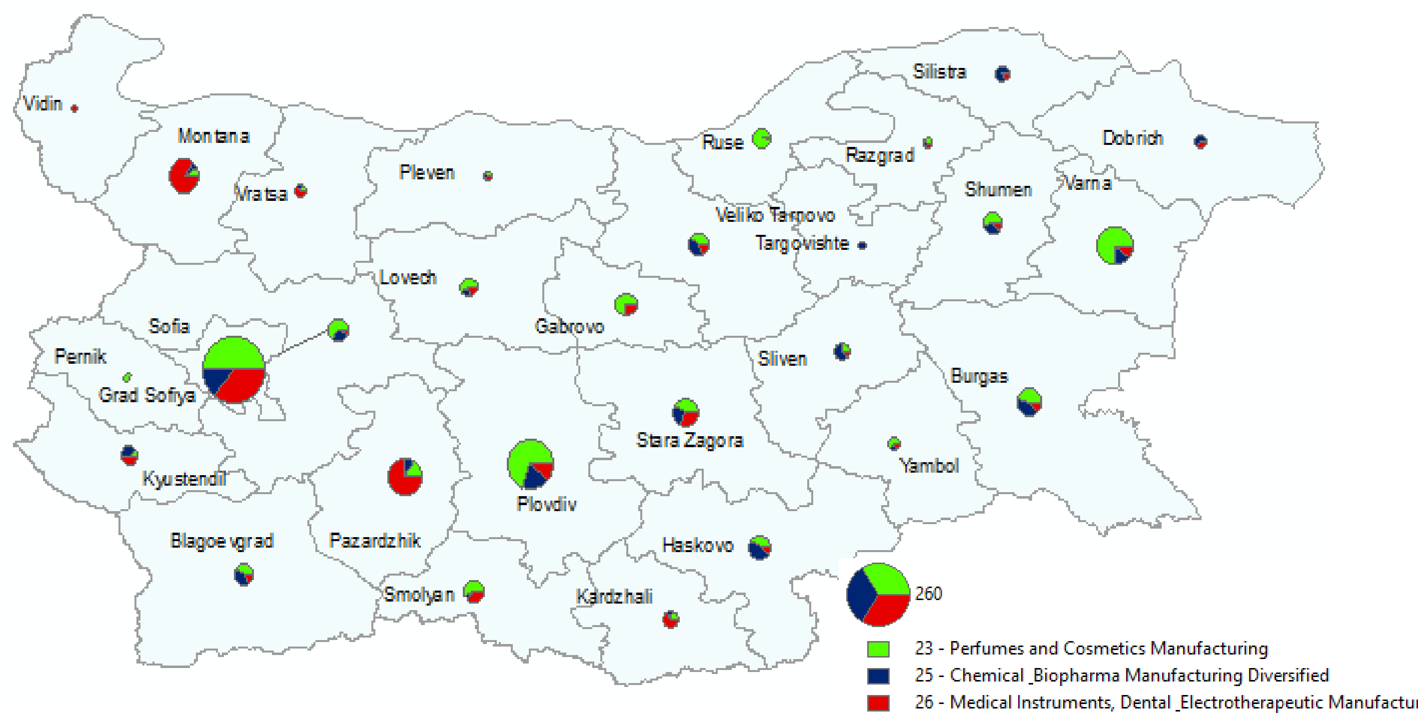


Subsidiaries by Source of Ownership (EU vs. Other, 29,237 firms)

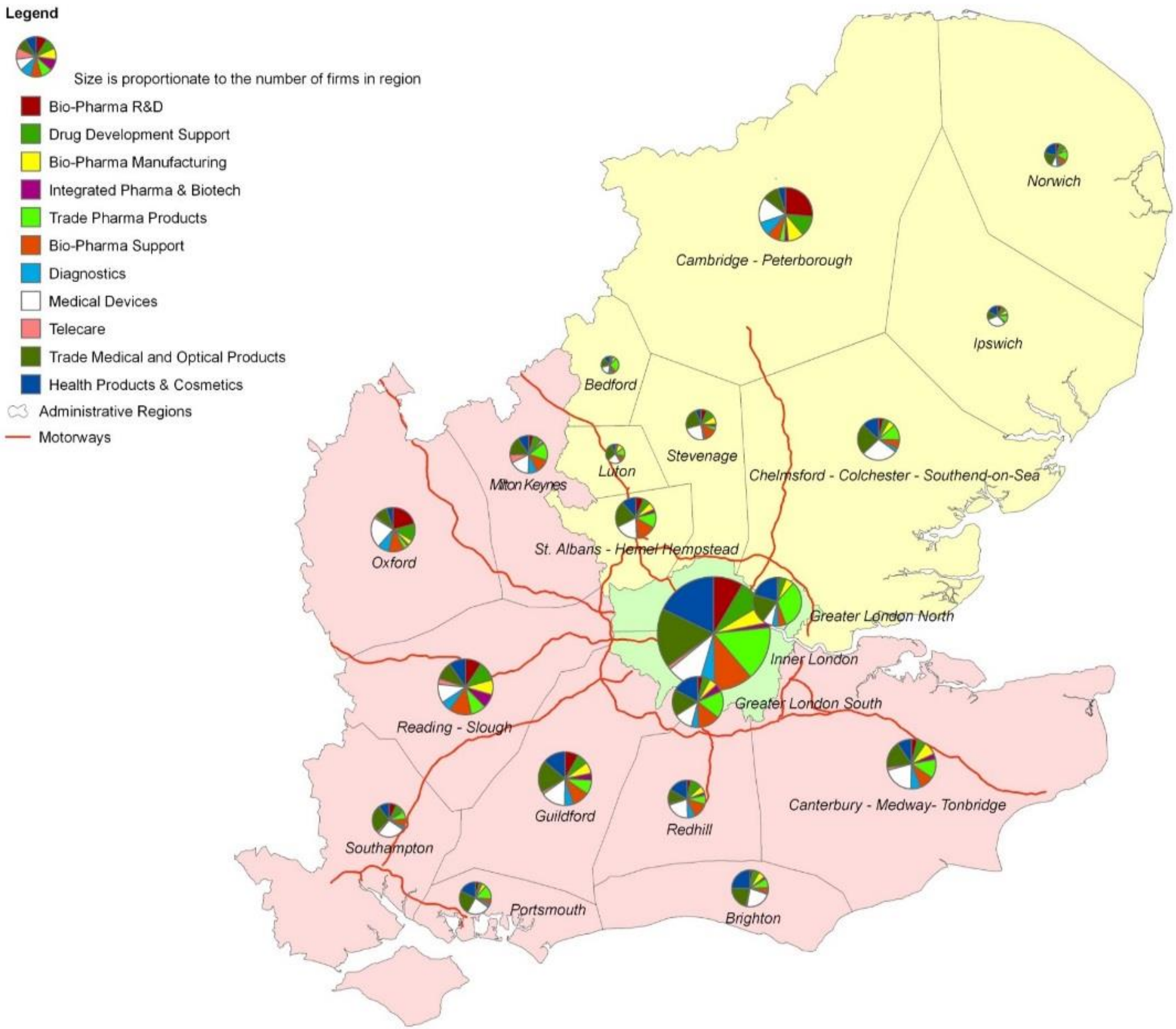


Bespoke Bulgarian Biopharma Database





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



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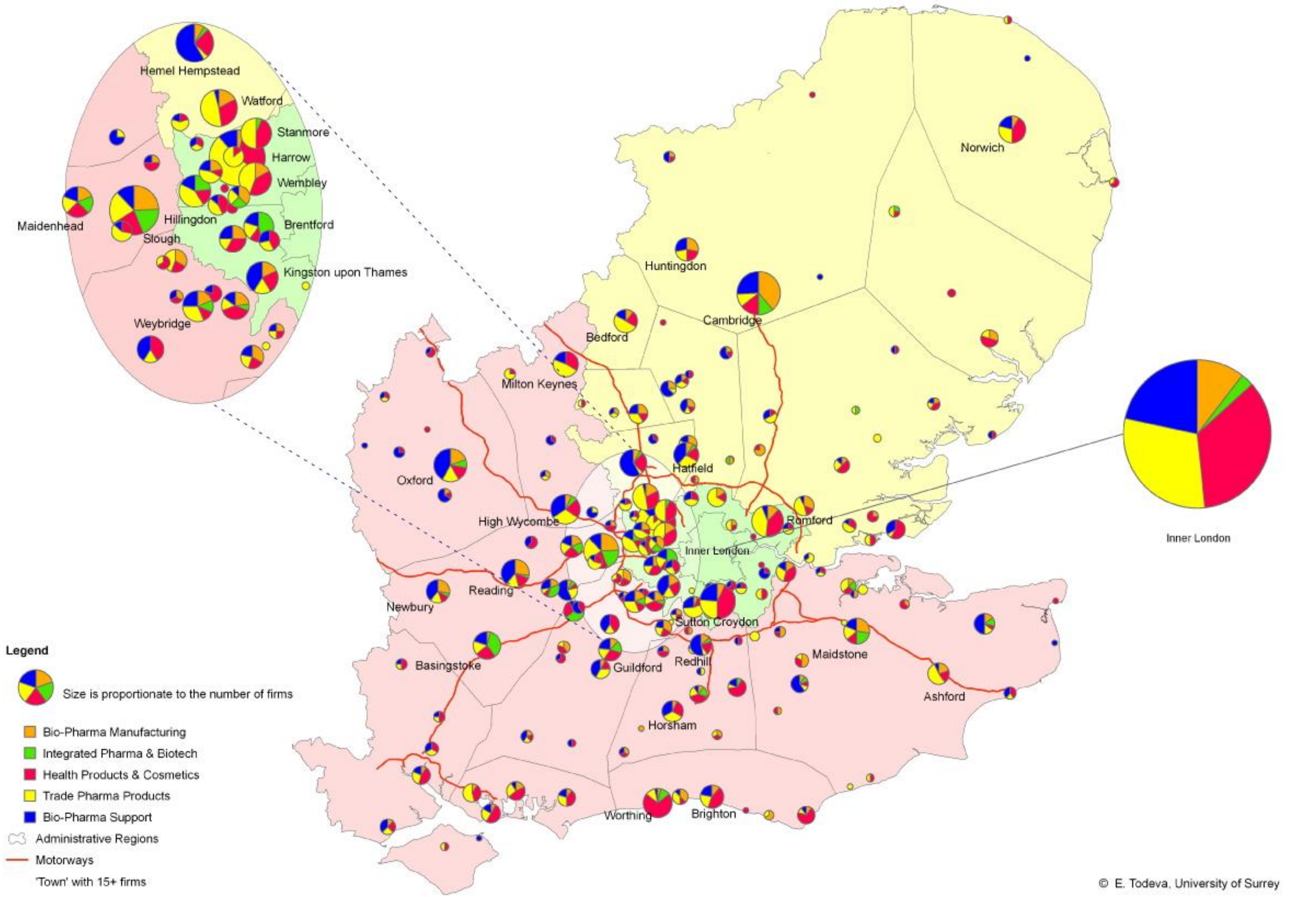
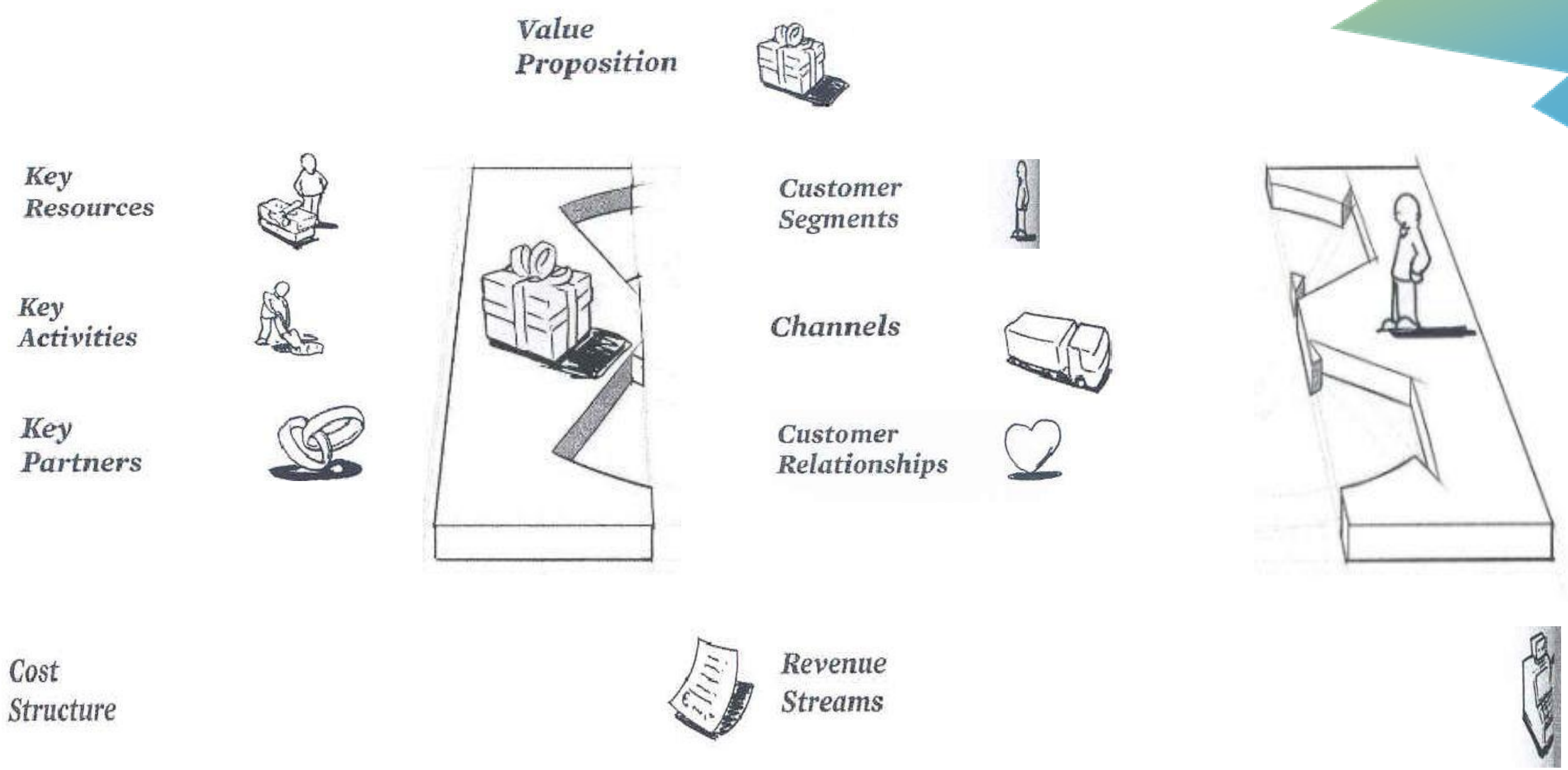


Biopharma capabilities in the Vanguard cities

		Count
Subsidiaries in City	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

Strategy development models are converting policy decisions into everyday practice

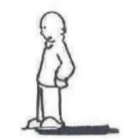


How to Build a Startup- **Osterwalder and Pigneur (2010) Business Model Generation**

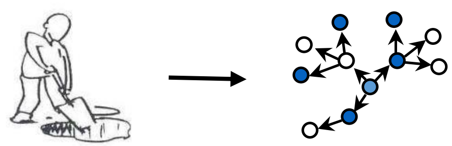
https://www.**udacity.com**/course/viewer#!/c-ep245/l-48632907/m-48739211

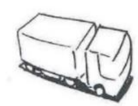
Strategic Models for Inter-Regional Cooperation


- Local business & societal needs
- Mapping local resources & capabilities
  - Identifying boundaries
  - Building a comprehensive dataset of firms, public sector organisations and institutions / NGOs
  - Technology & interface
  - Knowledge & information
- Triple helix & stakeholder engagement
- Triple helix regional profile, highlighting demand and supply

- Commerce & return on investment
- Wealth creation, economic growth & prosperity, developing a knowledge-based society
- Sustainability - community



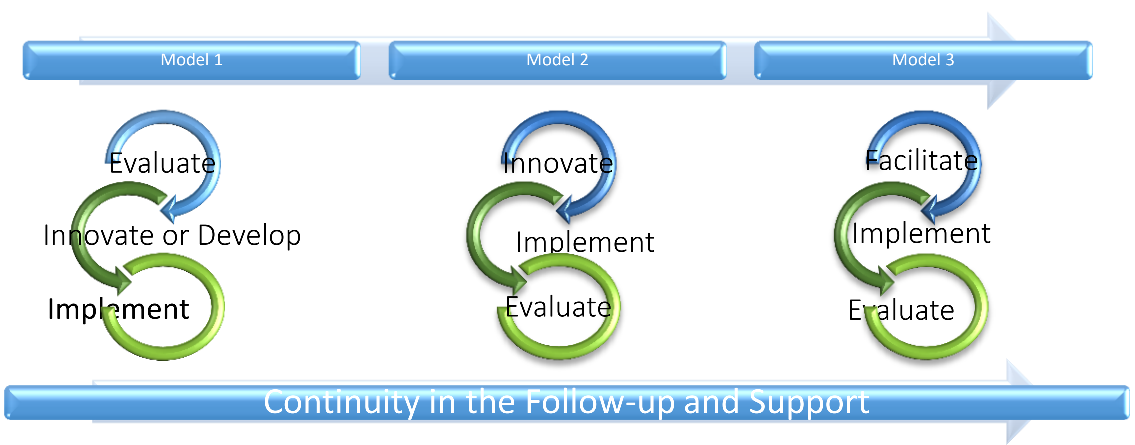



- Scope – networked activities and coordination
- Implementation - content & delivery
- Facilitation, Intermediation, assistance, value co-creation, evaluation, communication & feedback
- Cost structure

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

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

E.Todeva@bcned.co.uk