Comparing Techo Specialisations UK vs France

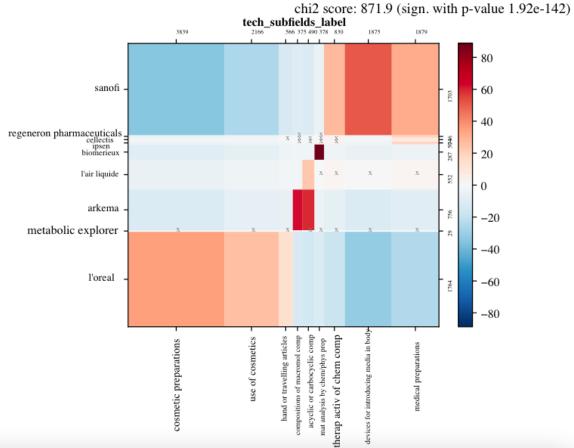
Martina Gregori, Jorge Velez-Ospina, An Yu Chen

Approach 1

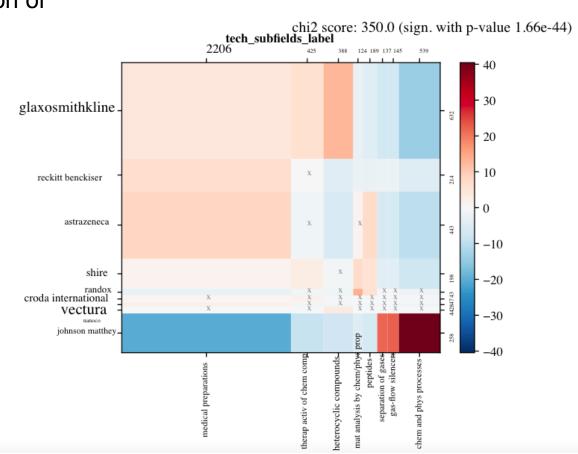
UK and France isolated from any other countries

- Technological specialisation of firms
- Geographical distribution of the top-10 areas

Technological specialisation of firms-France



Technological specialisation of firms-UK



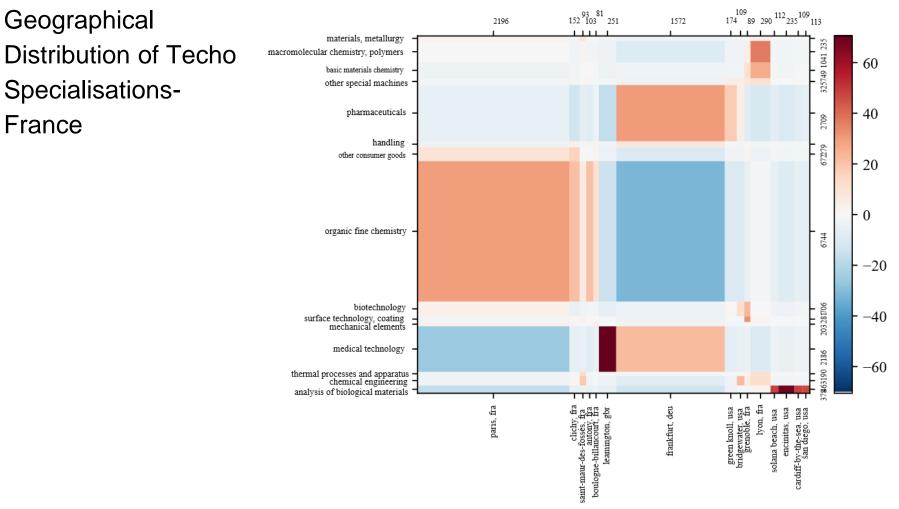
The Shift of Techo Specialisations overtime-France

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		Cosmetic Preparations	Us			e of Cosmetics	Cosmetic Preparations	
						Devices for Introducing	Media in Body	Peptides
				Devices for Intro	oducing Media in Body	Acyclic or Car	rbocyclic Comp	Semiconductor Devices
Use of Cosmetics		Use of Cosmetics		Use of Cosmetics		Therap Activ C	Of Chem Comp	Devices for Introducing Media in Body
			Use of Cosmetics			Adhesives	Mat Analysis by Chem/Phys Prop	
Devices for Introducing	Media in Body	Devices for Introducin	o Media in Body	Medical Preparations	Medical Preparations	Macromol withouth C-to-C Unsa	aturated Bonds	Batteries and related
				Devices for Introducir	ng Media in Body		Peptides	Blood Vessel Filters
Medical Preparations		Medical Preparations			d or Travelling Articles c Comp c or Carbocyclic Comp	Stroring Distribut	ting Non Solids	Acyclic or Carbocyclic Comp
				Therap Activ Of Cher	n Comp ns Of Macromol Comp	Compositions Of M	lacromol Comp	Compositions Of Macromol Comp
Therap Activ Of Chem C	Comp	Therap Activ Of Chem	Comp	Hand or Travelling Ar Therap Mat Analysis by Cher	Activ Of Chem Comp	Batter	ries and related Macro	mol withouth C-to-C Unsaturated Bonds
Hand or Travelling Artic	Ins	Hand or Travelling Art	Icles	Compositions Of Mac	n/Phys Prop Macromol Organ Subst cromol Comp nzymes Culture Media	Mat Analysis by Cl	hem/Phys Prop	Use of Cosmetics
Mat Analysis by Chem/F		Mat Analysis by Chem		Macromol with C-to Macromol with C-to	C Unsaturated Bonds Unsaturated Bonds is by Chem/Phys Prop nol Organ Subst	Hand or Tra	aveiling Articles	Adhesives
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Macromol with C-to-C U	Insaturated Bonds	Micro-Orga Enzymes	Culture Media		Colligned Melora Devices	is Sur	gery-Diagnosis	Micro-Orga Enzymes Culture Media
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Micro-Orga Enzymes Ci Inorg Or Non-Macromol		Inorg Or Non-Macrom	ol Organ Subst	Peptides	Adhesives	Macromol with C-to-C Unst	aturated Bonds	Stroring Distributing Non Solids
Macromol withouth C-to Semiconductor Devices		Macromol withouth C- Blood Vessel Filters	to-€ Unsaturated Bonds	Semiconductor Devic	es Surgery-Diagnosis	Micro-Orga Enzymes	s Culture Media	Hand or Travelling Articles
Surgery-Diagnosis Adhesives	1	Semiconductor Device Surgery-Diagnosis	as	Batteries and related	Batteries and related	Semicon	ductor Devices	Inorg Or Non-Macromol Organ Subst
Peptides Stroring Distributing Nor Blood Vessel Filters	n Solids	Adhesives Stroring Distributing N Batteries and related	on Solids	Blood Vessel Filters	Blood Vessel Filters	Blood	d Vessel Filters M	acromol with C-to-C Unsaturated Bonds

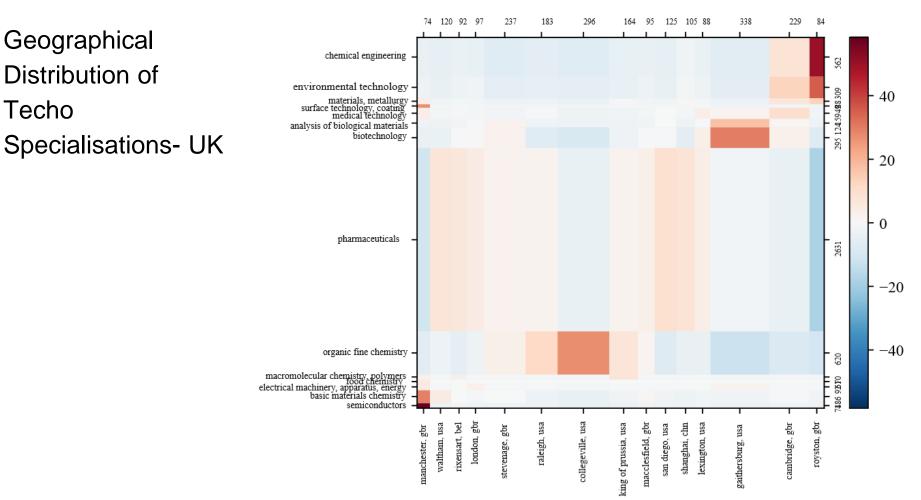
The Shift of Techo Specialisations overtime-UK

2,010.0	2,010.5	2,011.0 2,011.5	2,012.0	2,012.5	2,013.0	2,013.5 2,014	
Medical Preparations	Medical Preparations	Medical Prepar	Medical Preparations Medical Preparations	rations	Medical Preparations	Medical Preparations Heterocyclic Compounds Peptides	
					Heterocyclic Compounds Chem and Phys Processes	Batteries and related	
			Chem and Phy	rs Processes Chem and Phys Proc	cesses	Mat Analysis by Chem/Phys Prop Therap Activ Of Chem Comp Peptides	Therap Activ Of Chem Comp Fire-Fighting Inorg Or Non-Macromol Organ Subst
Thera	ap Activ Of Chem Comp					Devices for Introducing Media in Body Semiconductor Devices	Layered Products
		Chem and Phys Processes	Heterocyclic Co	ompounds Heterocyclic Comp	ounds	Containers for Storage	Materials For Miscellaneous Applications
		Heterocyclic Compounds	Peptides Batteries and re	related Pe	eptides	Gas-Flow Silencers	Acyclic or Carbocyclic Comp
	rocyclic Compounds	Therap Activ Of Chem Con	Separation of g	Gast low one		Separation of gases	Mat Analysis by Chem/Phys Prop
	n and Phys Processes Analysis by Chem/Phys Prop	Acyclic or Carbocyclic Com	Therap Activ O			Inorganic Chem Iterials For Miscellaneous Applications	Semiconductor Devices Separation of gases
Pepti Gas-	des Flow Silencers	Gas-Flow Silencers	Mat Analysis b	Chesa/PhysoBitetor D	evices	Other Foods	Other Foods
	ration of gases nanic Digital Comput	Separation of gases Peptides	Disintectants	roducing Media in Body Device Batteries and r		Mechanic Digital Comput	Mechanic Digital Comput
Disin	lic or Carbocyclic Comp fectants	Disinfectants	Acyclic or Carb	Storage by Chem/Physical Company	Chem	Acyclic or Carbocyclic Comp	Inorganic Chem
Conta	ces for Introducing Media in Body alners for Storage rials For Miscellaneous Application	Mat Analysis by Chem/Phy Materials For Miscellaneou Mechanic Digital Comput	Applications Materials For N	al Comput MsX918-AvoGs/Appx688 or Miscellaneous Applic	Greenp	Batteries and related	Disinfectants
- Inorg Othe	Or Non-Macromol Organ Subst	Semiconductor Devices Batteries and related		Disinfe r Non-Macromol Organ	octants	Layered Products Disinfectants	Gas-Flow Silencers Containers for Storage
Inorg	conductor Devices anic Chem red Products ries and related	Devices for Introducing Me Inorganic Chem Other Foods	lia in Body Fire-Fighting	Containers for S Mechanic Digital C	torage omput	Fire-Fighting	Devices for Introducing Media in Body
	Fighting	Inorg Or Non-Macromol Or Fire-Fighting Layered Products Containers for Storage	an Subst Inorg Or Non-N	Layered Pro Macromol Organ Size s?(Inorg Or Non-Macromol Organ Subst	Chem and Phys Processes

chi2 score: 1438.5 (sign. with p-value 2.97e-188)



chi2 score: 913.5 (sign. with p-value 3.35e-98)



Approach 2

Worldwide and selecting UK-FR: Position of the country in reference to the RoW

RQ: What is the level of specialisation of both countries in reference to the RoW? What is the position of both countries worldwide?

Assumption: some technologies could be underestimate because of their relative position to the RoW.

Approach 3

Subsetting UK and France:

We condition the data for UK or France to see the patent portfolio of the 2 countries and deep dive into areas that could potentially be underestimated if we consider the world's influence

The aim here is to bring more granularity into areas that may not be covered in approach 2.

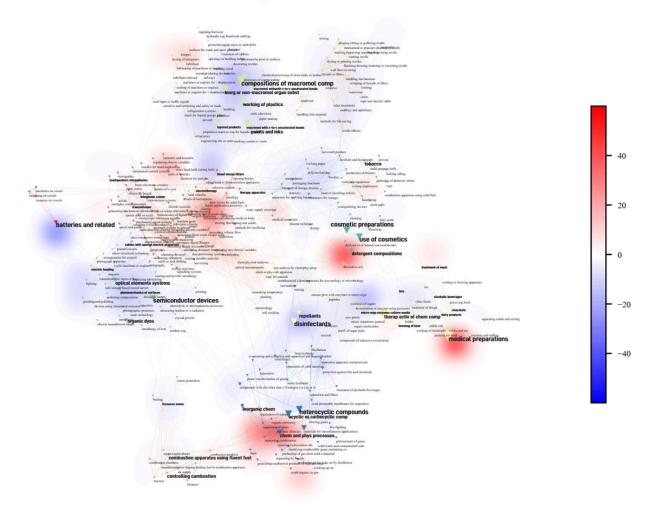
Subfields - Inventors

Differences relative to:

- Worldwide
- UK and France

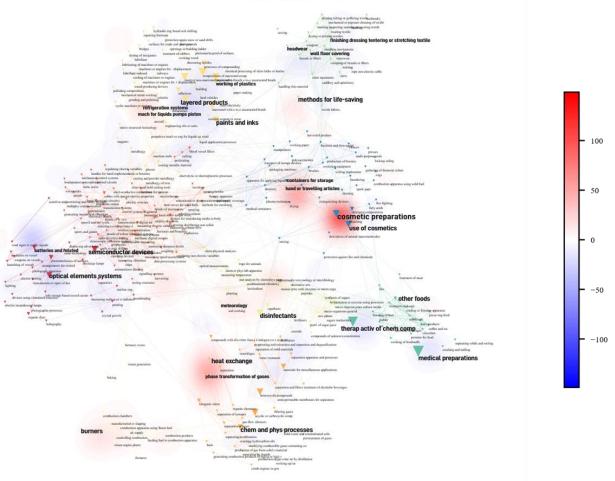
Sub_field ww

United Kingdom, 2010-2015

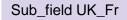


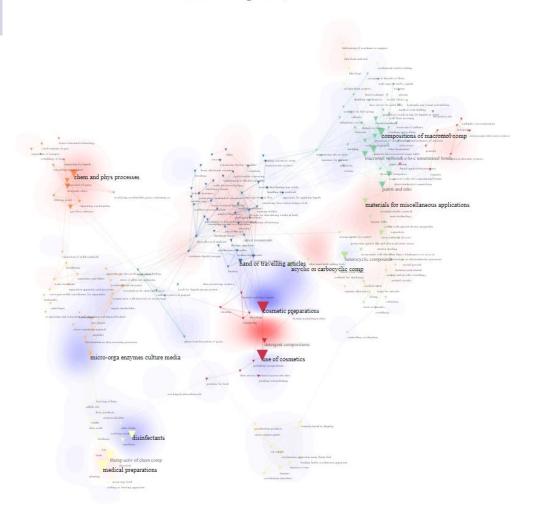
Sub_field ww

France, 2010-2015



United Kingdom, 2010-2015





- 60

- 40

- 20

- 0

- -20

- -40

- -60

Sub_field UK_Fr

France, 2010-2015

100

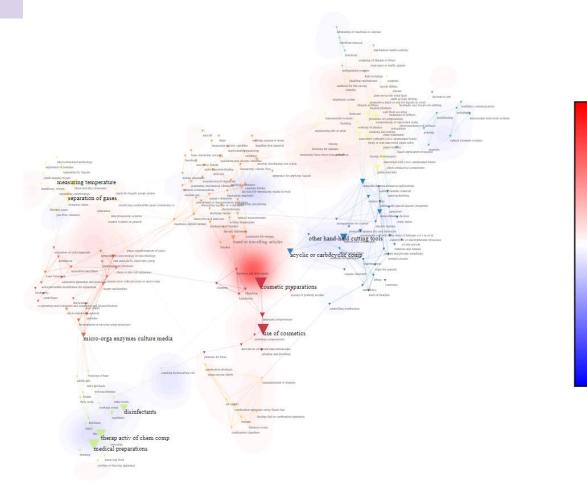
50

- 0

- -50

- -100

-



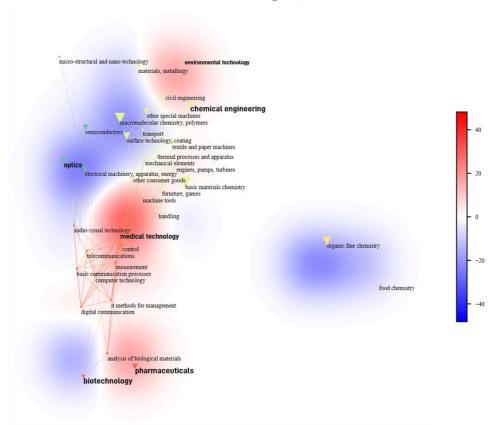
Fields - Inventors

Differences relative to:

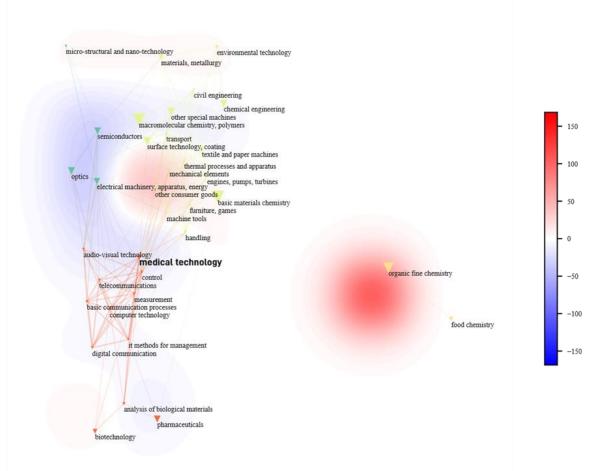
- Worldwide
- UK and France

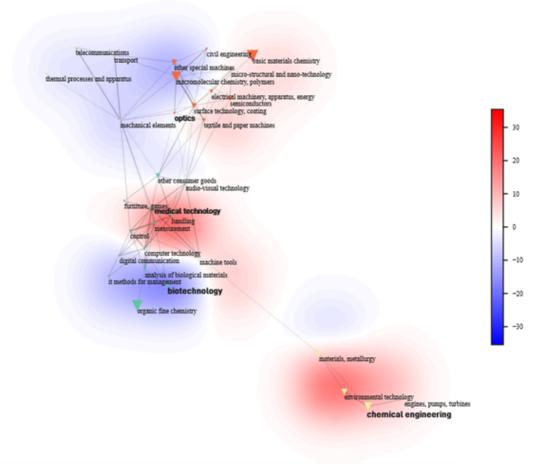
Field_ww

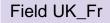
United Kingdom, 2010-2015



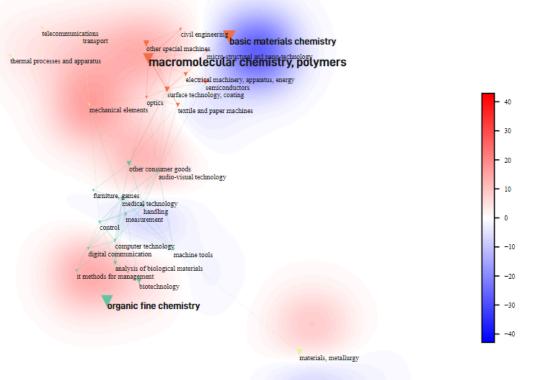
France, 2010-2015







France, 2010-2015



environmental technology engines, pumps, turbines chemical engineering

Conclusions (1)

• Within the 2 industrial sectors and looking at inventors, UK mainly specialises in medical technologies and materials, whereas France sees specialisation in Food chemistry and mechanical elements

	Level of specialisation	Country-Worldwide	UK-FR
	Strong	Medical technology/elements	Medical technology/elements
		Pharmaceuticals	
UK		Chemical engineering	Chemical engineering
	Weak	Optics	Optics
		Biotechnology	Biotechnology
	Level of specialisation	Country-Worldwide	UK-FR
	Strong	Organic fine chemistry	Organic fine chemistry
Fromes			Macromolecular chemistry
France	Weak	Medical technology	Basic materials chemistry

Fields – International collaboration

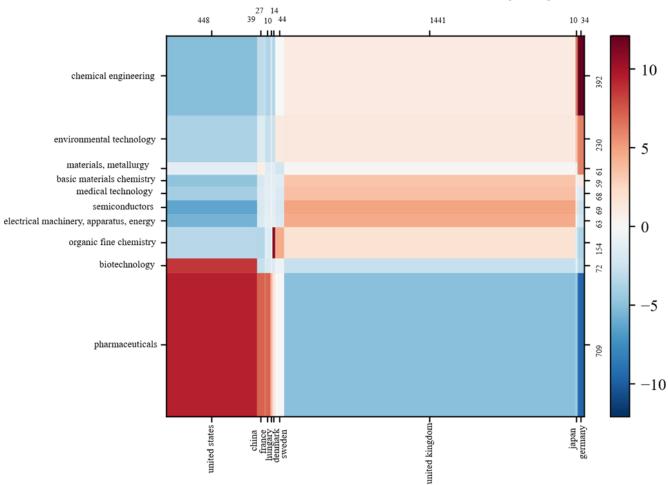
Both France and UK appear to quite homogeneous.

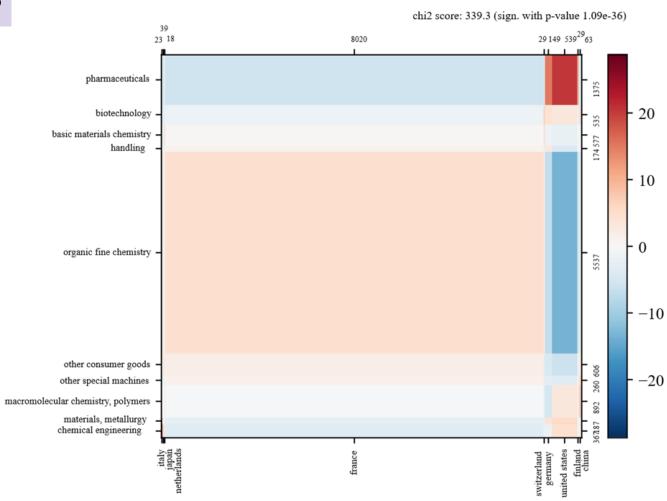
France shows a stronger internal connection.

UK is deeply connected to US, especially in the Pharmacutical and Biotechnology fields; while Germany collaboration seems relevant for the Chemical engineering.

chi2 score: 263.8 (sign. with p-value 4.00e-24)

UK - International Collab





France - International Collab

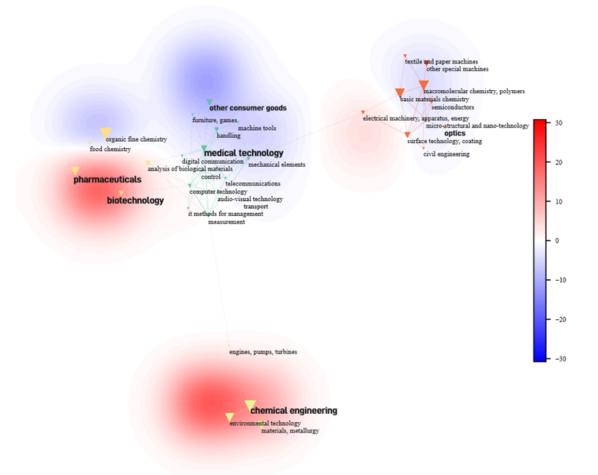
Fields - Head Quarter

Differences relative to:

- Inventors and Head Quarter

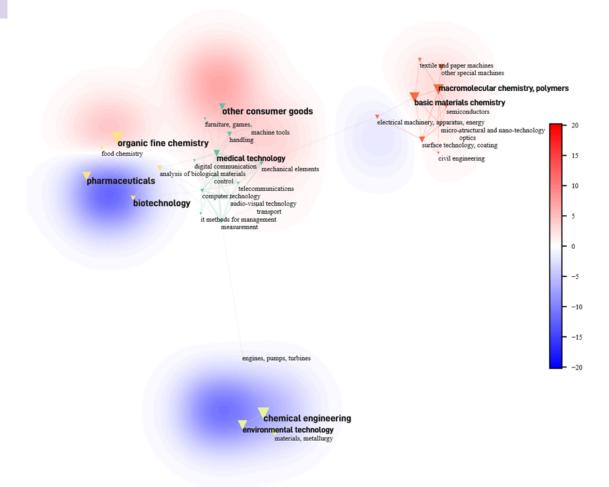
Field - HQ

United Kingdom, 2010-2015



Field - HQ

France, 2010-2015



Conclusions (2)

• Within the 2 industrial sectors and looking at HQ, France's investors specialise in medical technologies, other consumer good and textile technologies. UK's pharmaceuticals, chemical engineering and environmental technologies are overrepresented.

Level of specialisation	UK	France	
Strong	Pharmaceuticals, biotechnology	Medical technology	
	Chemical engineering	Other consumer goods	
	Environmental technology	Textile, papers machines	
Weak	Medical technology	Pharmaceuticals, biotechnology	
	Macromolecular chemistry, polymers	Chemical engineering	
	Basic materials	Environmental technology	

Conclusions (3)

• Medical Technology, Communication Technology

Represent a strong area of interest for the inventors from UK, but France shows to be stronger in terms of Firms investing in those types of patents

• Biotechnology, Organic fine chemistry

UK Firm focus on the fields overcome the UK inventors activities