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ADVANCED MONITORING AND COORDINATION OF EU R&D POLICIES AT REGIONAL LEVEL

Targeted Analysis 2013/2/18

Regional report - TUSCANY
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Regional report - TUSCANY

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Synthesis of the territorial and R&D system

Tuscany´s regional GDP per capita is above the Italian and the European mean. The region is shaped by small-scale businesses with little research capabilities, organised in industrial districts. However, there are sectoral changes occurring, with modern industries developing. Nevertheless, research activities are mostly due to the public sector. Indicators of the RDTI system show that Tuscany cannot achieve national and EU average values.

The Tuscan economy exhibits some intra-regional disparities as indicated through the coefficient of variation of several indicators stated in Table 3. The economically weaker regions which are below the Tuscan average are Massa-Carrara and Pistoia to the north and the north-east, respectively, Arezzo to the east, Grosseto to the south, and Livorno to the west. Particularly weak is the region Massa-Carrara. The stronger regions are all located around the economic centre Firenze (Florence). Except of the region Siena which is situated to the south of Florence, all economically powerful regions are located to the north or northwest of Florence. Nevertheless, in general, it is noticeable that the distribution of wealth does not vary excessively among the regions. Much more unevenly distributed are growth, unemployment and population dynamics. Surprisingly, the economically weaker regions show the highest growth figures. Here, most outstanding is the region Grosseto, followed by Massa-Carrara and Livorno. Regarding the unemployment among the regions, it could be observed that especially Massa-Carrara has a particularly high unemployment rate, followed by Prato and Lucca. All other regions have quite similar, low unemployment figures (around 5%). Although, the regional population development is in general negative, comparatively high growth figures can be found in the north-eastern regions; whereas the north-western regions have the lowest figures (cf. EUROSTAT 2011).

Intra-regional socio-economic disparities in Tuscany (selected Indicators)

Coefficient of variation of GDP per capita 2008 (in %)	Coefficient of variation of the yearly average GDP per capita growth rate 1998-08 (in %)	Coefficient of variation of the unemployment rate 2009 (in %)	Coefficient of variation of the population dynamics 2002-10 (in %)
8.27	24.79	31.62	26.74

Remark: disparity calculations based on NUTS-3 level data

(Source: own creation and calculations; based on data from EUROSTAT 2011)

The main R&D sectors are in the fields of radar, space, and laser technologies, ICT research, as well as biotechnology and life sciences. These research fields are high-tech-oriented and mostly dominated by the public sphere. The business sector plays a rather subordinated role. Finally, the weaknesses of the private sector in terms of RTDI activities partly explain the steadily erosion of the region´s international competitiveness in its traditional industrial sectors (cf. COLETTI 2007).

The innovativeness of the Tuscany region, measured by the number of patents registered at the EPO, is below the national and European figures. In 2007, employment in R&D sector was equivalent to 6.7% of the overall Italian R&D personnel. The R&D personnel per 1,000 employees amounted to 9.2. This figure almost corresponds with the Italian standard (9.1), but it is below EU average (11.0). The number of R&D public employees is 17.7% of the total. The main differences with the national average are in the greatest number of people within the university, highlighting the role of universities in R&D, and small business involvement (cf. EUROSTAT 2011).

In 2007, Tuscany had the 8thlargest per capita spending on R&D among the Italian regions, and a R&D intensity of 1.01%, thus being far below both the national (1.78%) and the EU-27 average (1.85%) compared to the rest of Italy. The Tuscan R&D productivity amounts to 0.26, thus being below-average compared to the Italian standard (0.31) and to EU average (0.27) (cf. EUROSTAT 2011).

Impact evaluation

Main findings

The following section analyses the research profile of the region by considering the capability to attract research funding in the Seventh Framework Program and the characteristics of the network generated by the programs. Moreover, we also consider the employment profile of the Region in the period 2004-2009, by paying particular attention to knowledge intensive and research dynamic sectors, as well as the patents produced in the region in the period 2002-2007.

As specified in the methodological section, it is not possible to assess the impact of European funding on the region. Nevertheless, programs, patenting and employment represents different and complementary stages in which research activity is developed and exploited. Thus, by using this data, it is possible to i) assess the coherence existing at the regional level among these different phases and ii) identify the most promising sectors.

Tuscany region is highly attractive of FP 7 funds, when compared to the national and European average, both in terms of number of projects and the amount of funds attracted. The provinces of Florence and Pisa are by large the most attractive. The participants are mostly Higher Education Institutions (55%), followed by private for profit (25%) and research organizations (18%). The region is particularly attractive in the themes "Health", "ICT", "Nanosciences, Nanotechnologies, Materials and new Production Technologies", "Energy", "Space" and "Socio-economic sciences and humanities". Most partners are located in Germany (14,8%), United Kingdom (12,2%) and France (10,0%). The most important organizations in the regional FP7 network are the universities of Florence, Pisa and Siena, while a very important subject in terms of projects led, the European University Institute (EUI), is not embedded in the regional network.

The region is mostly specialized in medium knowledge intensive sectors, which sum up 52% of the employed, and which have grown 6 thousands units in the considered period. The region is weakly specialized in High knowledge intensive sectors (9,5% of regional employees), and strongly specialized in low knowledge intensive sectors (38%), both compared to European and Italian averages. Nevertheless, the formers have grown in the period (+ 3'805 units, +6,6%), where the latter have decreased (-4'091, -2.3%), suggesting a slow but relevant shift towards more knowledge intensive economy, and in particular in "Information Technology" (+2'119), "Financial services" (+1'428) and "Pharmaceuticals (+739).

The patenting activity is remarkable in Chemistry and some fields of the Mechanical Engineering, mostly due to the presence of Siemens.

In sum, the region is strong in terms of research potential but more integration is needed of a pivotal actor, such as the EUI. In terms of employment there is a promising trend towards knowledge intensive sectors, and in particular there is a potential of integration between highly attractive sectors in research and growing economic sectors of strong specialization: i) research in "Health" with "Pharmaceuticals" sectors ii) ICT and iii) "Nanoscience" research with sectors in "Chemistry products" and "Construction materials".

General statement of the regional participation in the FP7

Headquarter effect

The headquarter effect analysis revealed 71 ingoing participations in the region, and 14 outgoing participations. No headquarter effect was identified for 89% of regional participations. Most of the ingoing participations were subtracted from Roma (57 participations). Outgoing participations were added to a number of regions including Milano (3 participations), Messina (2 participations) and Roma (3 participations).

The majority of ingoing participations came from Research Organisations (67%) and Private Research Organisations (30%). Outgoing participations are also evenly divided between both of these groups of actors.

Rate of participation of the region in the FP 7

Regional actors in Tuscany accounted for a total of 648 participations in FP7, 128 coordinations and 205mln€ in EC funding (10%, 12% and 11% respectively of the national total). The weight of the region in total national FP7 funding (11%) is considerably higher than its weight in the gross domestic expenditure on R&D (7%). During the 2007 – 2011 period, Tuscany received a yearly average of 41€mln year in FP7 financing, representing approximately 3% of the region's yearly R&D effort (1.2bn€ in R&D).

Overall, the rate of participation, the leadership rate[1] and the contribution received are superior to the European average and the Italian standard (Table 1).

Table 1 –Participation in the FP 7: comparison with country and European average

	TUSCANY	ITALY	EUROPE
leadership rate	20%	17%	19%
collaborations per 100.000 population	16.20	10.45	13.9
coordination per 100.000 population	3.20	1.74	2.6
€ contribution per inhabitant	53	31	44.4
average funding per project	317'290	293'724	318255

Distribution of funding at infra-regional level

The majority of regional participations and coordinations are located in Firenze (42% and 50% respectively), followed by Pisa (37% and 37%) and Siena (11% and 10%). As seen in the following table, the infra-regional distribution of FP7 funding is roughly equal to that of participations and coordinations. Firenze and Pisa account for 77% of FP7 funding in the region (37% and 40% respectively).   Siena comes in third with 15% of the overall FP7 funding in the region.

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[1] It represents an estimation of the strength of the regional actors, it is given by the ratio between the number of projects in which the regional actors play the role of coordinator and the number of projects in which the regional actors are in the position of partner.

Figure 1: EC contribution distribution within the region
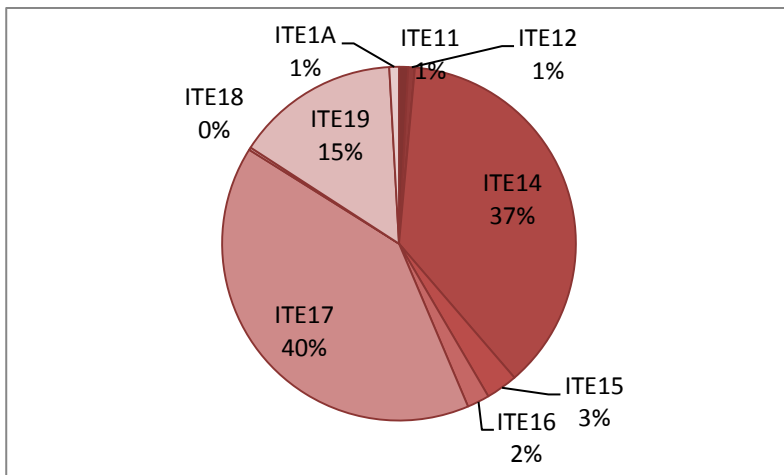
Distribution of funding by participant type

There are significant differences in the structure of participation between the regional and national level as illustrated by the following figures. The share of Higher of Secondary Education Establishments (HES) in Tuscany is considerably higher than in the rest of the country (55% vs. 36%). On the other hand the share of Research Organisations in Tuscany is lower than in Italy (18% vs. 32%).

Figure 2: Participation typology: a comparison between regional and national level
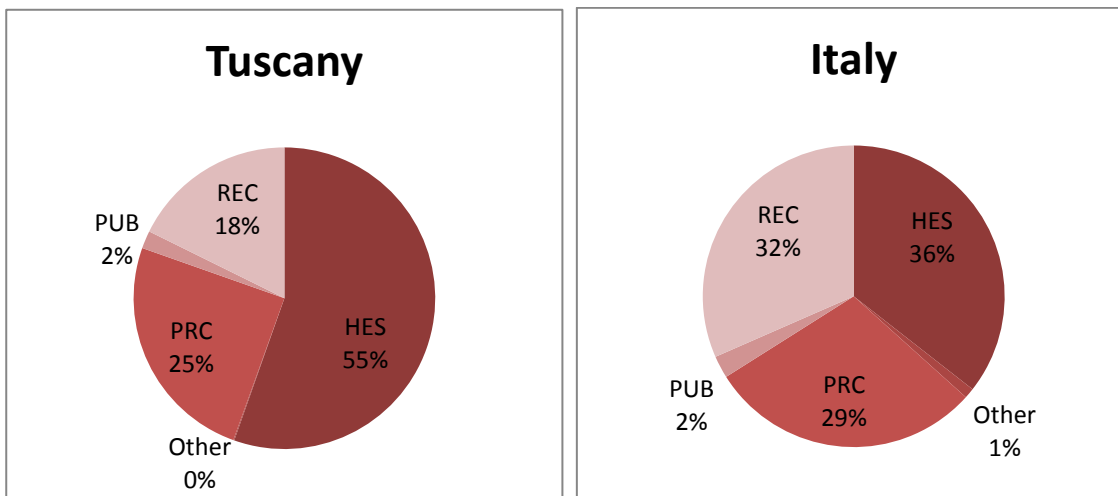
At the regional level, private organisations (commercial and non-profit) account for 39% of participations, compared to 61% for public organisations (commercial and non-profit). At the national level, the share between both types of organisations is even (49% vs. 51%). The following figure presents the distribution of FP7 funding among private and public organisations.

Italy

- Public sector 53%
- Private sector 47%

Tuscany

- Public sector 66%
- Private sector 34%
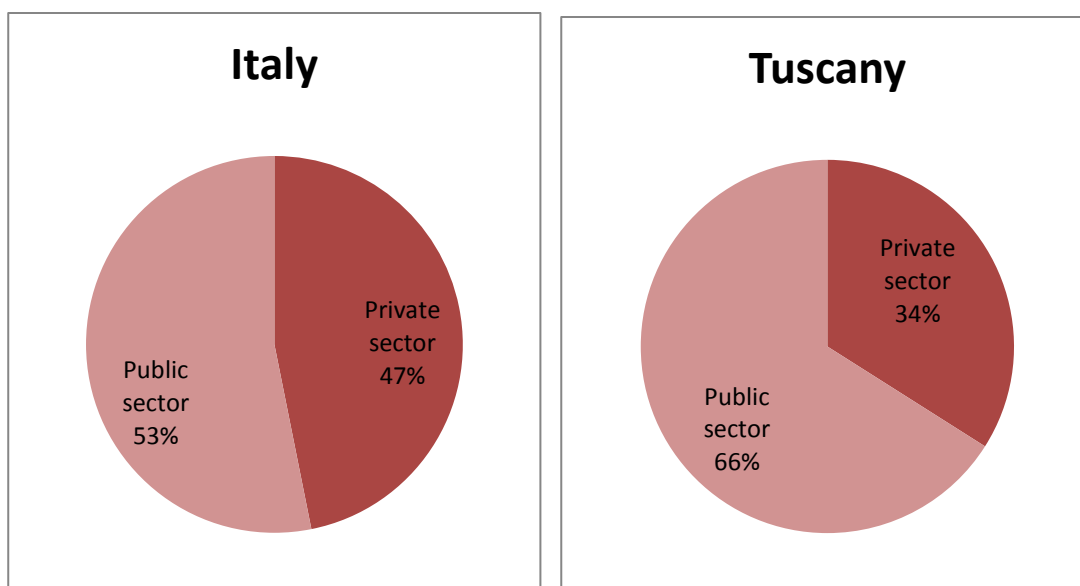
In terms of FP7 funding, Higher of Secondary Education establishments tend to outperform other types of participants. At the regional level, this group accounted for 50% of participations, while receiving 55% of the total FP7 regional funding. Private Commercial Organisations on the other hand account for 31% of participations, while benefiting from 25% of the total regional FP7 funding.

Distribution of funding by participant type at infra-regional level

The distribution of FP7 funding by participant type at the infra-regional level varies considerably. When looking at the top three territories, the structure of funding between Firenze and Sienna is similar with approximately half of funding going to Higher of Secondary Education establishments. In Siena however, the share of funding going to Private Commercial organisations is stronger than in the two other territories (39% vs. 20% in average). Private commercial organisations tend to receive the highest shares of funding in territories with lower participation rates.

Figure 3 Distribution of funding by type of participant at the infra-regional level

Higher of secondary education est.(HES)   Other (OTH)

Private commercial(PRC)   Public body (excl.research and education) (PUB)

Research organisations (REC)
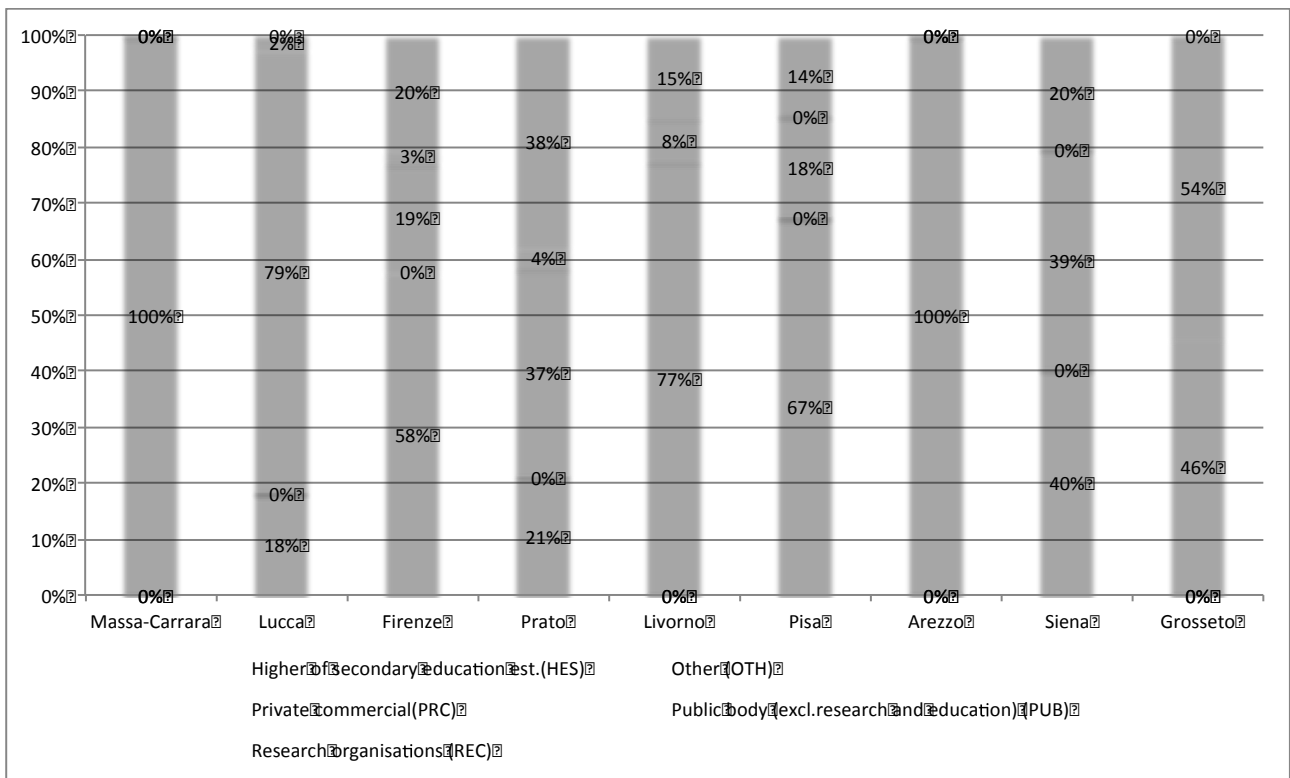
SMES' participation in FP7

During the 2007-2011 period, SMEs in Tuscany accounted for 129 participations in FP7 projects and 30mln€ in funding (11% of the national total in both cases). This is similar to the regional share of overall participations in Italy (11% - see above). All SME participations were generated by private commercial SMEs (100%).

The following figure presents the infra-regional distribution of SME funding in FP7. SMEs in Firenze and Pisa account for 66% of total SME funding in the region (30% and 36% respectively).

Figure 4: EC contribution for SMEs within the region
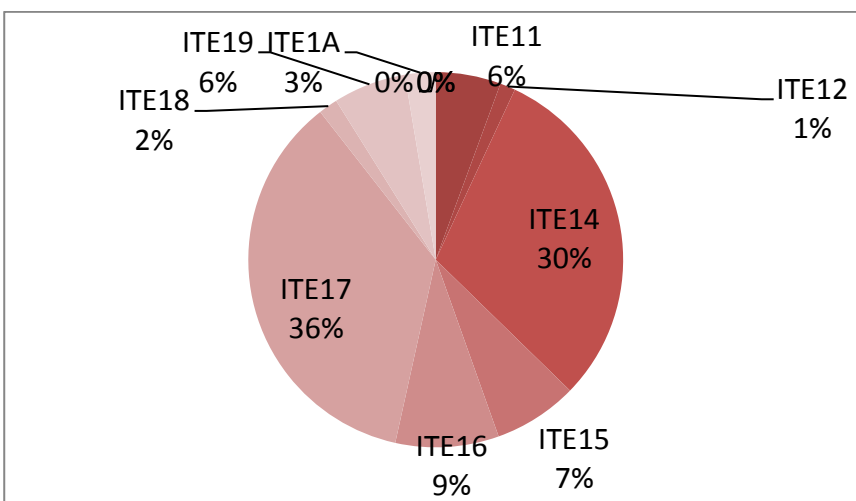
Distribution of funding by programme and by theme

COOPERATION programs represent the largest share of funding (139mil) and projects (447), followed by IDEAS (30 mil, 28 projects), PEOPLE - Marie Curie actions (19,5 mil, 86 projects,) and CAPACITIES (16 mil and 81 projects). In terms of thematic specialization within the COOPERATION program, the themes attracting more funding are *Information and communication technologies* (36%), *Health* (23%) and *Nanosciences* (10%). The relative weight of each thematic area largely reflects the amount of funding pre-allocated by the European Union to each Theme. The comparison with country and European attractiveness of funds per inhabitant provides a better insight as to the regional scientific specialization[2]: Tuscany is more attractive in almost all types of programs, and particularly in Health, Socio-economic sciences, Energy and ICT.

A more detailed description of the thematic specialization in the FP 7 is presented in section 2.4.

Table 2 – Thematic distribution of projects and funding

num	PROG SPEC	Theme	nbr	REGION EC contribution		Attractiveness compared (contribution) COUNTRY	EU
1	COOPERATION	Health	76	32'014'647	23%	2.37	1.52
2	COOPERATION	Food, Agriculture, and Biotechnology	18	4'969'710	4%	1.12	0.73
3	COOPERATION	Information and Communication Technologies	152	50'068'297	36%	1.59	1.32
4	COOPERATION	Nanosciences, Nanotechnologies, Materials and new Production Technologies	53	14'557'401	10%	1.42	1.18
5	COOPERATION	Energy	24	8'523'328	6%	1.71	1.25
6	COOPERATION	Environment (including Climate Change)	31	6'824'751	5%	1.40	0.84
7	COOPERATION	Transport (including Aeronautics)	41	9'821'290	7%	0.94	0.85
8	COOPERATION	Socio-economic sciences and Humanities	17	3'753'121	3%	2.33	1.69
9	COOPERATION	Security	16	3'534'305	3%	1.10	0.86
10	COOPERATION	Space	19	5'091'532	4%	2.06	1.57
11	COOPERATION	General Activities (Annex IV)			0%	0.00	0.00
	COOPERATION	TOTAL	447	139'158'382		1.59	1.20
12	IDEAS	European Research Council	28	30'180'326			
13	PEOPLE	Marie-Curie Actions	86	19'512'665			
14	CAPACITIES	Research Infrastructures	19	8'702'007	54%	1.20	0.93
15	CAPACITIES	Research for the benefit of SMEs	40	4'140'001	26%	0.97	0.88
16	CAPACITIES	Regions of Knowledge	10	1'651'047	10%	3.92	3.76
17	CAPACITIES	Research Potential	2	271'220	2%	0.50	0.18
18	CAPACITIES	Science in Society	8	813'387	5%	1.06	0.71
19	CAPACITIES	Coherent development of research policies	1	373'672	2%	7.14	2.38
20	CAPACITIES	Activities of International Cooperation	1	131'910	1%	0.48	0.23
	CAPACITIES	TOTAL	81	16'083'244		1.18	0.90
21	Euratom	Fusion Energy					
22	Euratom	Nuclear Fission and Radiation Protection	6	669'057			
			1'176	*360'845'301*			

The following figure presents the distribution of participations at the infra-regional level, by FP7 theme (only for COOPERATION); for the top three infra-regional territories. Siena has a significantly higher level of

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[2] A ratio above or below 1 points out a higher/lower attractiveness.

participations in the field of Health, while Pisa displays a high level of specialisation in the Information and Communication Technologies sub-theme when compared to the regional and national averages.
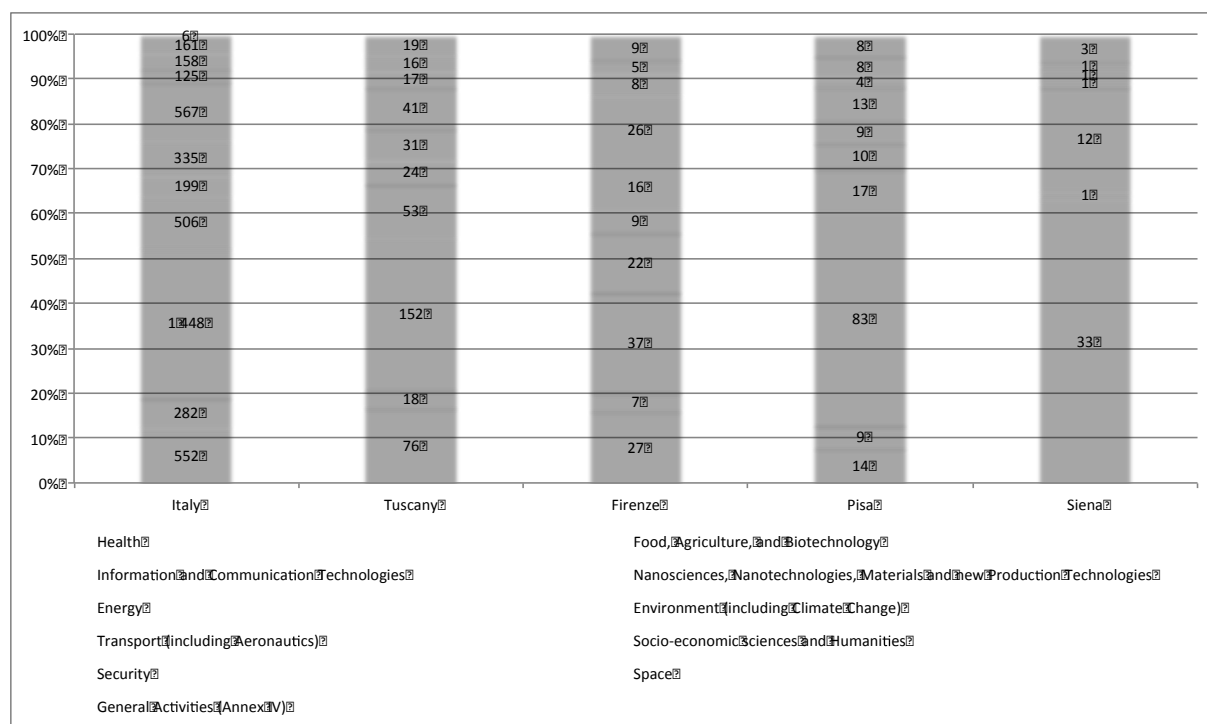
Networking: collaboration in the FP 7

Main partner countries of the region

Regional actors tend to cooperate mostly with other organizations outside the region. Partners in the region count around 9%, nationals 10%, whereas 81% are located in other European regions. The most important countries in terms of collaborations are Germany and United Kingdom; whereas if single regions are considered, the most important are Ile de France, Baden-Württemberg and London (Table).

Table 3 – Spatial distribution of collaborations

Partner country	n	% of total		Partner regions	n	% of total
DE	850	14.8%		Ile de France	301	5.2%
UK	701	12.2%		Baden-Württemberg	181	3.1%
FR	573	10.0%		London	180	3.1%
IT	570	9.9%		Bayern	164	2.9%
ES	444	7.7%		Nordrhein-Westfalen	150	2.6%
NL	306	5.3%		Comunidad de Madrid	139	2.4%
BE	237	4.1%		Lombardia	135	2.3%
CH	223	3.9%		Lazio	133	2.3%
SE	205	3.6%		Catalana	119	2.1%
EL	185	3.2%		Attiki	117	2.0%
AT	148	2.6%		Vlaams Gewest	115	2.0%

PL	116	2.0%	South East England	106	1.8%
DK	114	2.0%	RÉGION DE BRUXELLES	88	1.5%
FI	104	1.8%	Arr. Halle-Vilvoorde	83	1.4%
PT	90	1.6%	East of England	81	1.4%

Network of the regional collaborations in the FP7

Figure 1 visually represents the network of regional collaborations in the FP 7. The names of the most important actors are underlined. The network appears rather well connected, and centred around several important universities and research centres.

Figure 7–FP 7 network and its main features

Meta Network
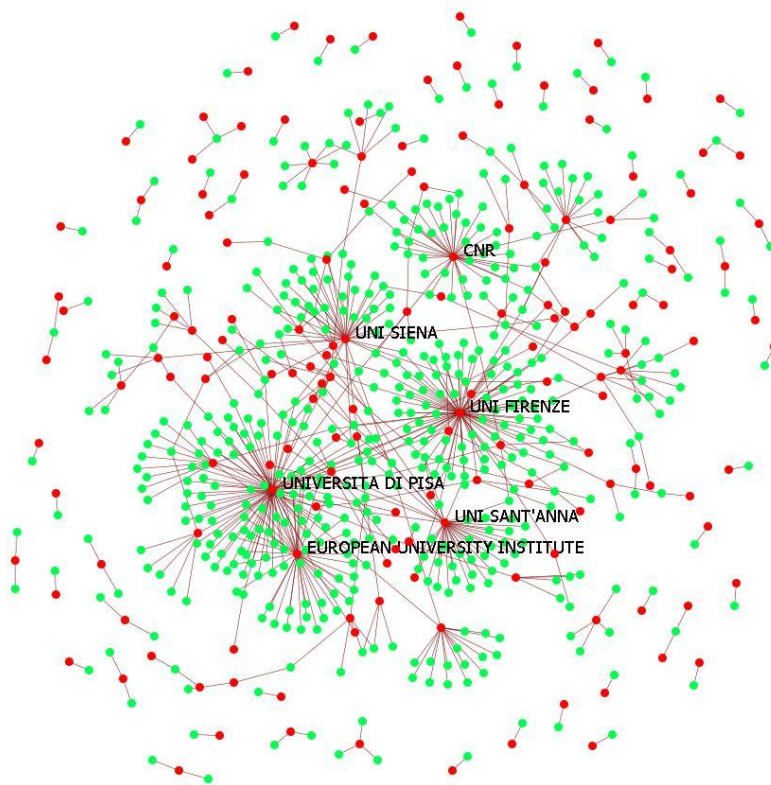
powered by ORA, CASOS Center @ CMU

Measure	Value
number of nodes (organizations)	158
number of egdes (cooperations)	314
Density	0.025
Components of 1 node (isolates)	61
Components of 2 nodes (dyadic isolates)	7
Components of 3 or more nodes	4
Characteristic path length	3.339
Clustering coefficient	0.553
Network levels (diameter)	7
Network fragmentation	0.781
Krackhardt connectedness	0.219
Krackhardt efficiency	0.913

Main regional actors involved in FP7 networks

The next chart shows which organizations are repeatedly top-ranked in a series of centrality measures[3]. The value shown is the percentage of measures for which it was ranked in the top three. The following table represents three key measures to approximate the importance of the actors in the network[4].

Figure 8 –More central organizations in the regional FP7 network

Recurring Top Ranked Agent - Meta Network
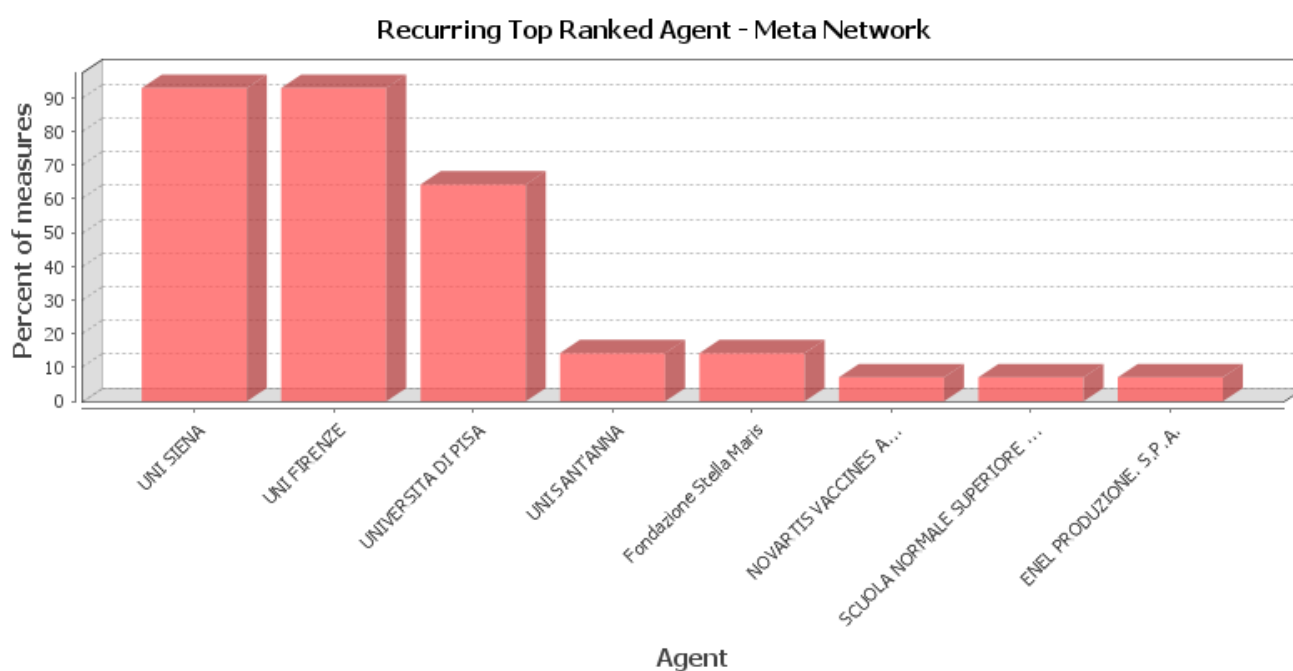
Table 4 – Centrality measures: top actors in the FP 7

Rank	HUB centrality		Betweenness centrality		Total degree centrality	
1	UNI FIRENZE	1.27	UNI FIRENZE	1021	UNI FIRENZE	111
2	UNIVERSITA DI PISA	0.6	UNIVERSITA DI PISA	841	UNIVERSITA DI PISA	106
3	UNI SIENA	0.11	UNI SIENA	838	UNI SIENA	67
4	UNI SANT'ANNA	0.1	UNI SANT'ANNA	580	UNI SANT'ANNA	62
5	CNR	0.04	CNR	502	CNR	52
6	PIAGGIO & C S.P.A.	0.03	ALTA RICERCA E SVILUPPO IN BIOTECNOLOGIE SRLU	300	EUROPEAN UNIVERSITY INSTITUTE	42
7	RESILTECH SRL	0.03	Fondazione Stella Maris	261	SCUOLA NORMALE SUPERIORE DI PISA	19
8	SMARTEX S.R.L.	0.03	REGIONE TOSCANA	180	CONSORZIO INTERUNIVERSITARIO RISONANZE MAGNETICHE DI METALLOPROTEINE PARAMAGNETICHE	19

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[3] Total degree centrality, In-degree centrality, Out-degree centrality, Eigenvector centrality, Eigenvector centrality per component, Closeness centrality, In-Closeness centrality, Betweenness centrality, Hub centrality, Authority centrality, Information centrality, Clique membership count, Simmelian ties, Clustering coefficient.

[4] For a definition of these measure see the methodological section.

9	Fondazione Stella Maris	0.03	CONSORZIO INTERUNIVERSITARIO RISONANZE MAGNETICHE DI METALLOPROTEINE PARAMAGNETICHE	160	LABORATORIO EUROPEO DI SPETTROSCOPIE NON LINEARI	18
10	ATAF SPA	0.02	SMARTEX S.R.L.	148	ALTA RICERCA E SVILUPPO IN BIOTECNOLOGIE SRLU	16

Main actors in the region in terms of leading collaboration

The three main actors in terms of leading collaboration and partnerships are shown in the following table. What is striking is that a very important organization in terms of project led, e.g. the European University Institute, is very weakly embedded in the regional (and even national) network of collaboration in FP 7. This can be explained by its peculiar history and mission, which is precisely to be a prototypical European Higher Education Institution. However, it remains rather surprising that there are no FP 7 collaboration with other high standing and reputed HEIs like those present in Tuscany.

Table 5 – Top three organizations for projects led and participation as partner

	focus on the top three coordinators		location of partners		
Type	leader	n° as leader	region	country	EU
HES	EUROPEAN UNIVERSITY INSTITUTE	35		1	53
HES	UNIVERSITA DI PISA	17	8	1	68
HES	SCUOLA SUPERIORE DI STUDI UNIVERSITARI E DI PERFEZIONAMENTO SANT'ANNA	12	8		80

	focus on the top three partners		location of leaders		
	leader	n° as partner	region	country	EU
HES	UNIVERSITA DEGLI STUDI DI FIRENZE	74	3	10	61
HES	UNIVERSITA DI PISA	60	1	8	51
HES	UNIVERSITA' DEGLI STUDI DI SIENA	35	6	7	22

The following Social Network Analysis reveals the links between the main research players in the region and their partners in Europe. European partners are not displayed individually, but have instead been regrouped by type of organisation and country of origin. The shape of the nodes indicates the type of organisation represented (circles = research organisations, squares = higher education establishments, rhombus = private commercial organisations, triangles = other). The figure only displays the most important collaboration patterns, while excluding collaborations that are too weak to be significant5. The size of the nodes indicates the importance of the player in terms of centrality (number of participations linking them to other partners); and the width of lines represents the intensity of collaboration between the partners represented in the figure.

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[5] This has been determined using a minimun value of frequency of collaborations (>6).
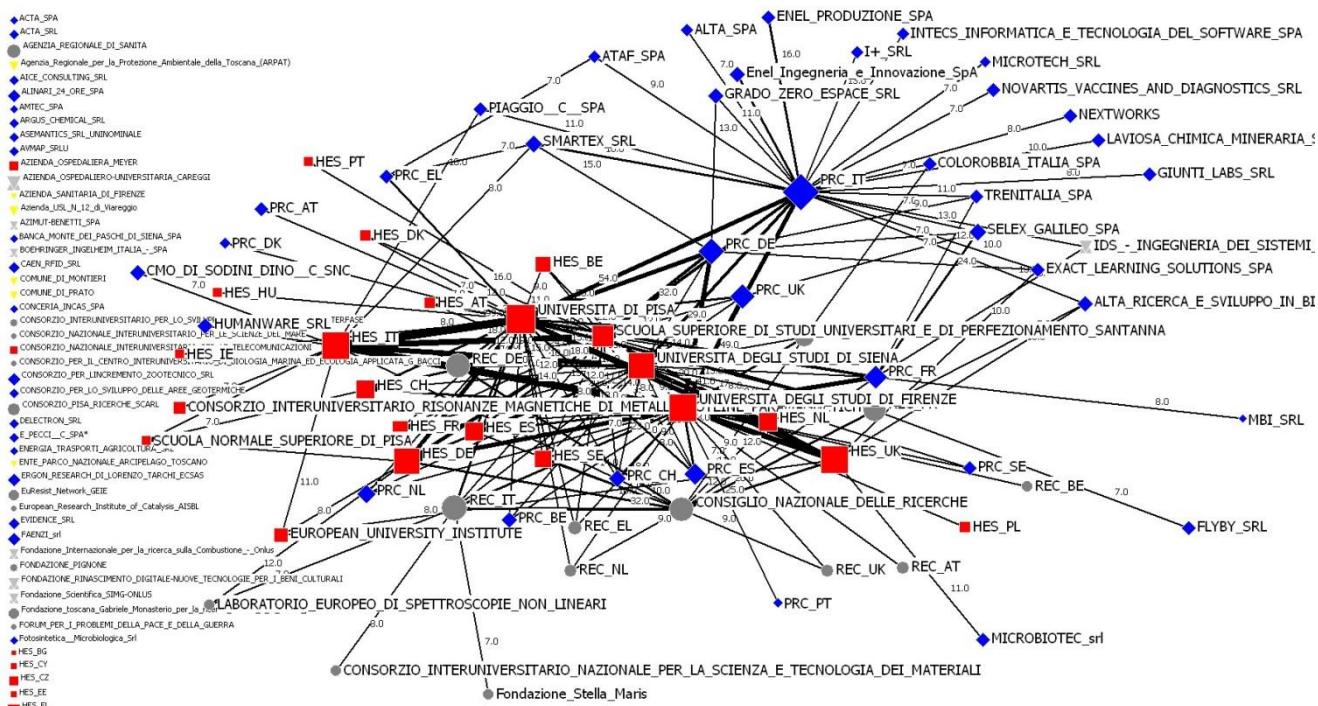
Outputs – employment and patenting in the region

Employment

In this section we examine the distribution of employment in the region across sectors with special attention on identifying sectors where the region has a particular specialisation and/or where there are trends of growth and decline in employment. Figure 9 makes a basic breakdown of employment into sectors that can be classified as 'high', 'medium' and 'low' knowledge and technology intensive using the Eurostat and OECD's classification of sectors into technology and knowledge intensive groups (see Annex 1). Further, Table 6 shows figures on employment growth and relative specialisation with respect to Italy and Europe for each of these broad groupings of sectors.

Figure 9 - Share of regional employment 2009

Share of regional employment 2009
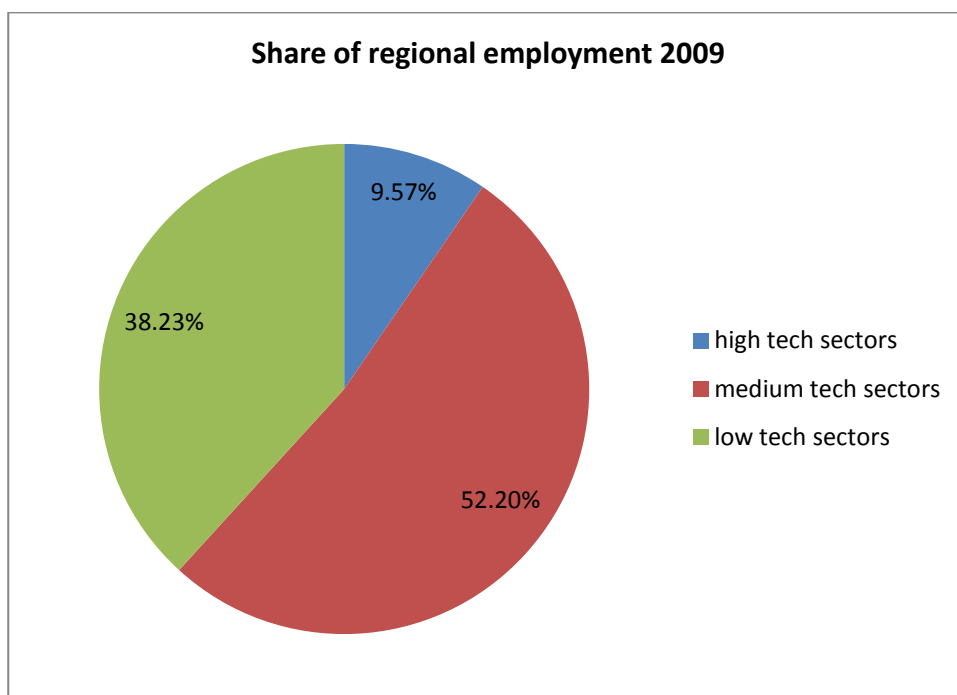
Table 6 –Employment and specialization (2009)

	Share of regional employment 2009	variation in the share of employment 2009-2004[6]	Employment Tuscany 2009 - 2004	Specialization with respect to Europe (2009)[7]	Specialization with respect to Italy (2009)[8]
high tech sectors	9.57%	6.61%	3805.00	0.58	0.91
medium tech sectors	52.20%	1.94%	6102.00	0.87	0.80
low tech sectors	38.23%	-2.27%	-4091.00	1.63	1.56

Employment in the region is dominated by medium tech sectors (52%), with low and high technology sectors accounting for 38% and 10% of employment respectively. Medium and high tech sectors has grown and in low sectors has decreased. The specialisation figures tell the most interesting story because they show how the region is positioned relative to Italy and Europe. The region is relatively less specialised in medium and high tech sectors than Europe and Italy and more specialised in low tech sectors with respect to both Italy and Europe. In Table 7 this analysis is continued sector-by-sector, with sectors ranked in terms of their share of regional employment (in 2009).

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[6] The variation in the share employments has been calculated as: (n° employees in the region in 2009 – n° employees in the region in 2004)/ (n° employees in the region in the year 2004)

[7] Specialization index with respect to Europe shows whether the region concentrates more or less employment in a certain sector(s) than the European average being 1 this average.

[8] *Ibid* with respect to Italy

Table 7 – Employment specialization by sector and Knowledge intensity (2009)

	Share of regional employment 2009	Employment 2009 - 2004	Specialization with respect to Europe (2009)	Specialization with respect to Italy(2009)	Technology and knowledge intensity
Financial services	6.08%	1428	0.84	1.00	HIGH TECHNOLOGY AND KNOWLEDGE INTENSITY
IT	1.56%	2119	0.77	0.66	
Pharmaceuticals	1.35%	739	1.57	1.29	
Education and knowledge creation	0.44%	-827	0.12	0.71	
Biotech	0.12%	311	0.86	3.17	
Aerospace	0.02%	35	0.05	0.06	
Construction	10.65%	7104	1.16	0.80	MEDIUM TECHNOLOGY AND KNOWLEDGE INTENSITY
Transportation and logistics	7.71%	4477	1.17	0.95	
Business services	6.41%	-5646	0.81	0.78	
Metal manufacturing	4.75%	-550	1.02	0.62	
Processed food	4.44%	-339	0.79	0.74	
Building fixtures, equipment and services	3.69%	67	1.39	1.06	
Chemical products	2.27%	132	2.3	1.85	
Telecom	1.69%	-2857	0.65	0.73	
Entertainment	1.60%	5366	1.13	1.10	
Production technology	1.38%	-81	0.66	0.45	
Automotive	1.32%	-782	0.46	0.47	
Construction materials	1.28%	-246	2.53	0.99	
Plastics	1.11%	-763	1	0.73	
Sporting, recreational and children's goods	0.93%	280	3.55	2.32	
Heavy Machinery	0.81%	82	0.82	0.58	
Medical devices	0.65%	499	1.06	0.67	
Lighting and electrical equipment	0.54%	-387	0.96	0.89	
Maritime	0.50%	142	0.78	0.92	
Instruments	0.29%	-284	0.64	0.88	
Power generation and transmission	0.18%	-112	0.52	0.52	
Tourism and hospitality	5.57%	3005	1.45	1.28	LOW TECHNOLOGY AND KNOWLEDGE INTENSITY
Textiles	4.62%	-4138	3.57	1.94	
Distribution	4.34%	1545	1.56	1.15	
Paper products	3.41%	507	1.96	1.48	
Leather products	3.30%	254	19	6.37	
Footwear	3.13%	-3012	6.57	2.61	
Media and publishing	2.39%	1451	0.93	0.82	
Jewellery and precious metals	2.14%	-1565	10.82	3.91	
Furniture	2.07%	184	1.68	1.06	
Agricultural products	0.68%	1498	0.47	1.13	
Stone quarries	0.29%	-388	2.54	2.27	
Oil and gas	0.20%	-67	0.5	0.69	

Tobacco	0.05%	-110	0.19	2.84
Farming and animal husbandry	0.00%	5	0	1.88

The detail of the previous table can be also found in the following figures, in which we can see the absolute employment growth (y axis), the relative weight on the regional total employed (x axis) and the regional specialization with respects to Europe (the size of the bubbles).

Figure 9 shows that "IT" is rather small but strongly growing, "Pharmaceuticals" and "Financial services" are sectors that are growing at medium rate. "Education and knowledge creation" is declining.

Figure 9 – High tech and knowledge sectors: evolution 2004- 2009
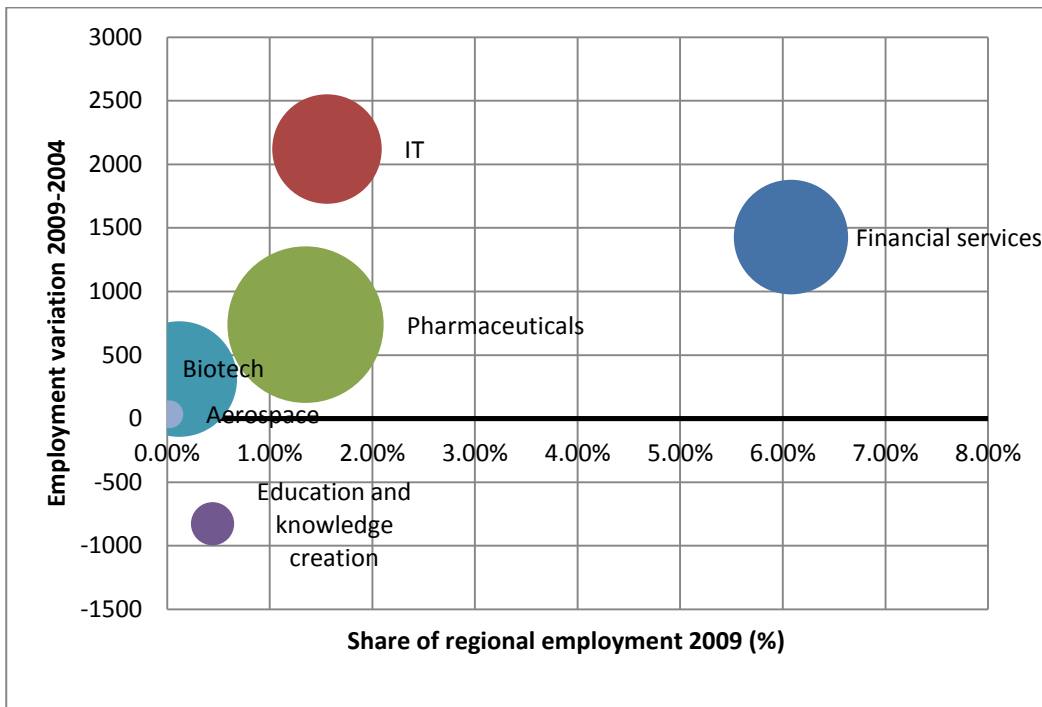
With regards to medium tech, "Transportation and logistics" and "Contruction" are growing sectors that account a high share of the regional employment. The figure also shows a strongly declining sector, "Business services", in which the region is not highly specialised.

Figure 10 – Medium tech and knowledge sectors: evolution 2004- 2009

Figure 10 – Medium tech and knowledge sectors: evolution 2004- 2009
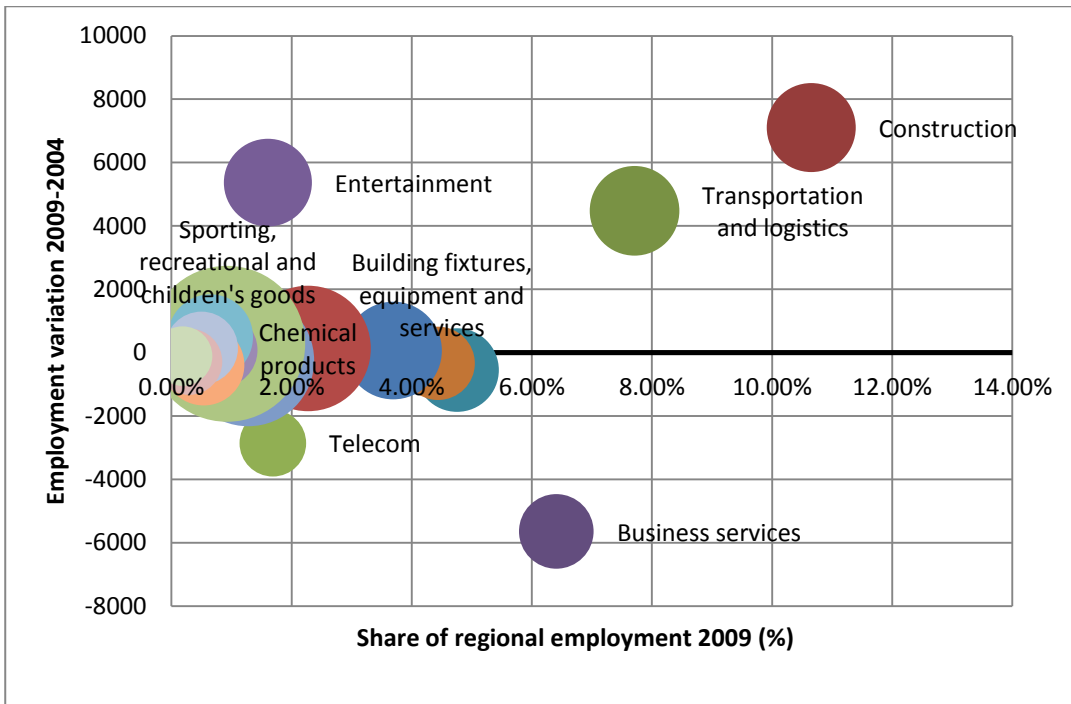
Among low tech sectors "Construction" is large and has grown. We can also appreciate some declining sectors as "Jewellery and precious metals" or "Footwear". The region is highly specialised in the sector "Leather products", which is stable in terms of employment.

Figure 11 – Low tech and knowledge sectors: evolution 2004- 2009

Figure 11 – Low tech and knowledge sectors: evolution 2004- 2009
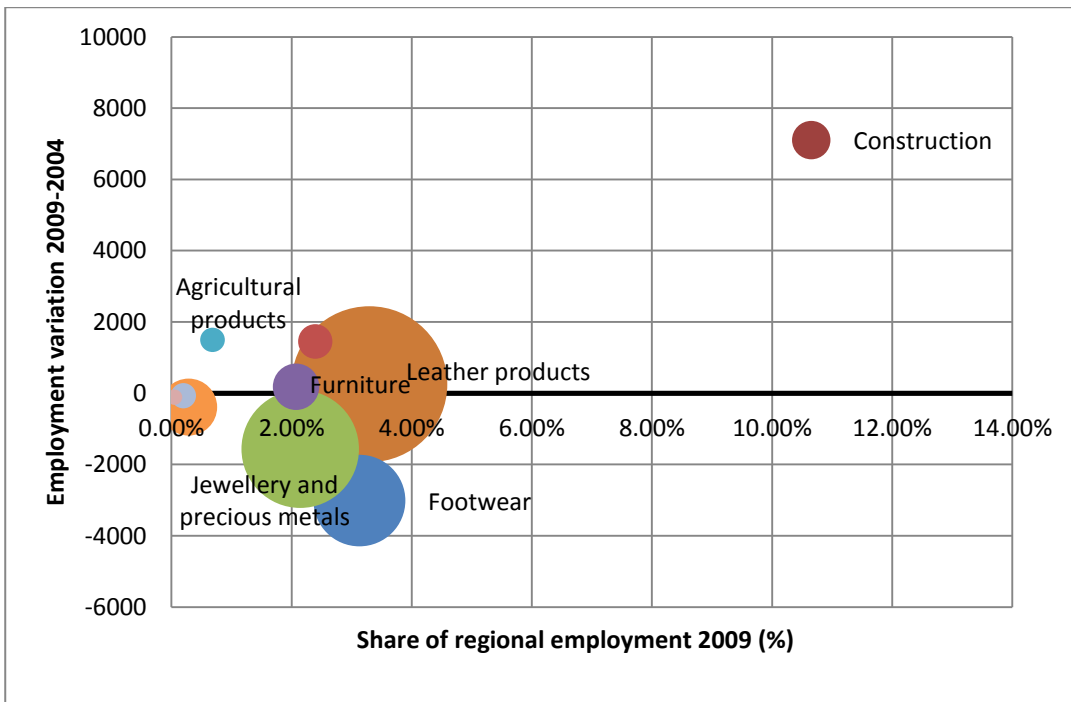
Patents

Table 8 and figures 12 and 13 show the degree of specialization by sector of patenting, for EPO applications from 2002 to 2007. Patents are regrouped by domain and sub-field. Fractional counting is used for distributing patents across fields.

Tuscany clearly emerges as specialized in Mechanical Engineering, whereas in the other sector the patenting activity is rather modest. Table 10 shows that this specialization is largely due to one important actor -Siemens.

Table 8 – patents by domain and sub-field

dm	lib_domaines	n	lib_fields	n° patents	field weight*	country weight**	specialisation index ***
1	Electrical engineering	1	Electrical machinery, apparatus, energy	18.41	3.53%	3.44%	0.69
1	Electrical engineering	2	Audio-visual technology	4.00	0.77%	3.75%	0.76
1	Electrical engineering	3	Telecommunications	21.83	4.18%	4.14%	0.83
1	Electrical engineering	4	Digital communication	19.00	3.64%	4.82%	0.97
1	Electrical engineering	5	Basic communication processes	1.67	0.32%	1.00%	0.20
1	Electrical engineering	6	Computer technology	21.17	4.06%	3.96%	0.80
1	Electrical engineering	7	IT methods for management	1.25	0.24%	2.14%	0.43
1	Electrical engineering	8	Semiconductors	3.25	0.62%	1.64%	0.33
2	Instruments	9	Optics	11.92	2.28%	5.32%	1.07
2	Instruments	10	Measurement	26.69	5.11%	6.93%	1.40
2	Instruments	11	Analysis of biological materials	0.75	0.14%	2.63%	0.53
2	Instruments	12	Control	8.03	1.54%	3.48%	0.70
2	Instruments	13	Medical technology	30.28	5.80%	5.28%	1.06
3	Chemistry	14	Organic fine chemistry	5.97	1.14%	4.64%	0.93
3	Chemistry	15	Biotechnology	0.00	0.00%	0.00%	0.00
3	Chemistry	16	Pharmaceuticals	15.83	3.03%	4.73%	0.95
3	Chemistry	17	Macromolecular chemistry, polymers	9.21	1.76%	6.73%	1.35
3	Chemistry	18	Food chemistry	4.50	0.86%	3.79%	0.76
3	Chemistry	19	Basic materials chemistry	5.95	1.14%	4.57%	0.92
3	Chemistry	20	Materials, metallurgy	6.02	1.15%	4.84%	0.97
3	Chemistry	21	Surface technology, coating	8.81	1.69%	7.30%	1.47
3	Chemistry	22	Micro-structural and nano-technology	0.64	0.12%	6.78%	1.37
3	Chemistry	23	Chemical engineering	11.27	2.16%	5.09%	1.02
3	Chemistry	24	Environmental technology	3.08	0.59%	2.68%	0.54
4	Mechanical engineering	25	Handling	40.43	7.74%	7.25%	1.46
4	Mechanical engineering	26	Machine tools	15.10	2.89%	4.97%	1.00
4	Mechanical engineering	27	Engines, pumps, turbines	133.12	25.50%	27.55%	5.55
4	Mechanical engineering	28	Textile and paper machines	18.95	3.63%	8.33%	1.68
4	Mechanical engineering	29	Other special machines	13.64	2.61%	3.06%	0.62
4	Mechanical engineering	30	Thermal processes and apparatus	3.67	0.70%	1.55%	0.31
4	Mechanical engineering	31	Mechanical elements	8.90	1.70%	1.68%	0.34
4	Mechanical engineering	32	Transport	13.78	2.64%	2.00%	0.40
5	Other fields	33	Furniture, games	8.83	1.69%	1.87%	0.38
5	Other fields	34	Other consumer goods	10.72	2.05%	1.81%	0.36
5	Other fields	35	Civil engineering	15.33	2.94%	3.18%	0.64

* ratio: (n° of patents of the region in field x) / (total patents of the region)
** ratio: (n° of patents of the region in field x) / (n° of patents of the country in field x)
*** ratio: (patenting weight of field x in the region) / (patenting weight of field x in the country)

Figure 12 – Patenting by domain: total share
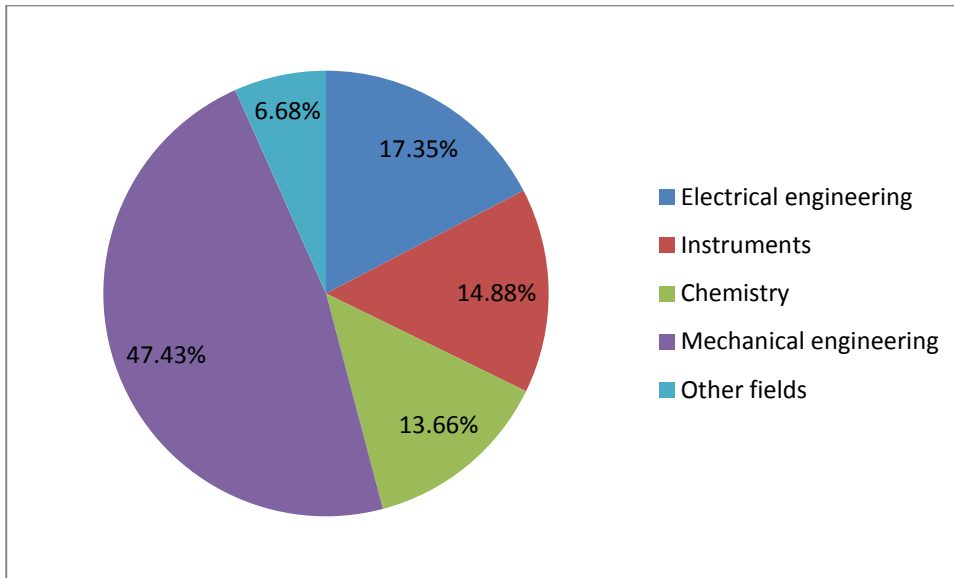
Figure 13 - Patenting by domain: specialization
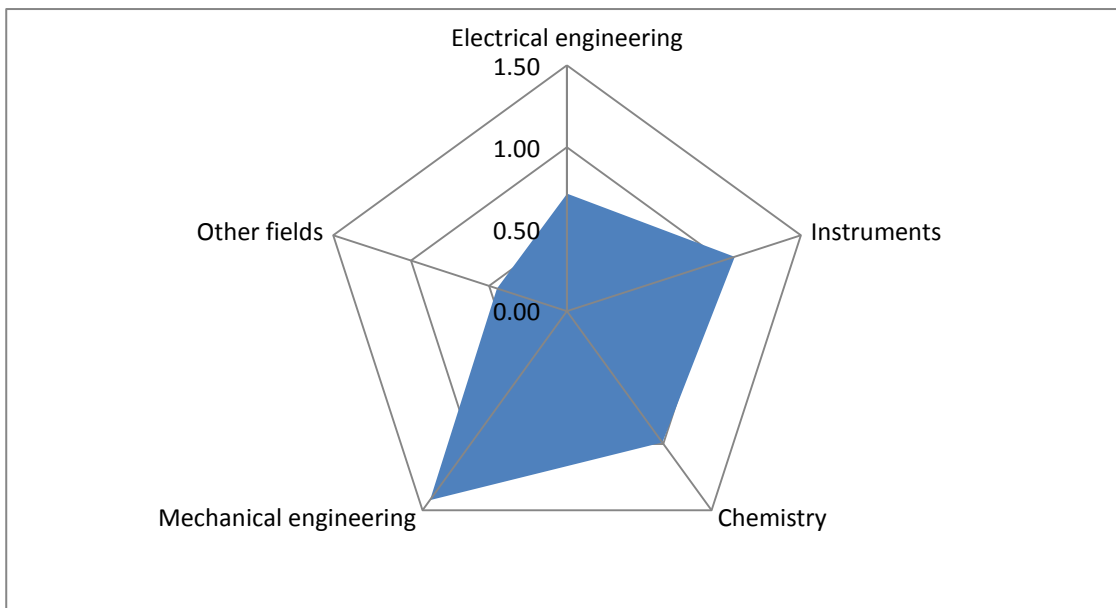
Table 9 shows the most important patenting subjects.

Table 9 – Most important applicants

name	count
SIEMENS VDO AUTOMOTIVE AG	72
SIEMENS VDO AUTOMOTIVE SPA	36
SIEMENS AG	24
ERICSSON TELEFON AB L M	18
ESAOTE SPA	13
M T C MACCHINE TRASFORMAZIONE	12
MAGNETEK SPA	12
CELLI NONWOVENS SPA	9
ST MICROELECTRONICS SRL	9
POWER ONE ITALY S P A	8

Annex 1 - Regional Research and technological specialisation in FP7

Context

FP7 allocates a total of EUR 32 413 million to the Cooperation specific programme. This funding is mainly aimed at supporting cooperation between universities, industry, research centres and public authorities through collaborative research projects. As of October 2011, 3 725 projects were funded through the FP7 cooperation programme representing a total of 14.5€bn.

The FP7 cooperation programme covers 11 themes (Cf. **Box 1**) which themselves cover a number of research areas. For the purposes of this study, 188 research areas have been selected in order to perform a regional specialization analysis of each theme.

Box 1 The 11 themes of the FP7 cooperation programme (and the number of research areas for each of them)

- Health (13 research areas)
- Food, Agriculture, and Biotechnology (17 research areas)
- Information and Communication Technologies (12 research areas)
- Nanosciences, Nanotechnologies, Materials and new Production Technologies (16 research areas)
- Energy (8 research areas)
- Environment (including Climate Change) (9 research areas)
- Transport
    - Aeronautics (17 research areas)
    - Surface transport (15 research areas)
- Socio-economic sciences and Humanities (18 research areas)
- Space (5 research areas)
- Security (7 research areas)

Methodological aspects

The specialization analysis aims to establish regional profiles based on thematic participation in the cooperation programme of FP7. The principle of the specialization analysis is to compare, within a theme, the budget breakdown into research areas between the European, national and regional levels.

The perimeter of the analysis only concerns research activities. In order to improve the relevance of the specialization analysis, cross-cutting activities, support actions to improve international collaborations, to promote SMEs or for NCP activities are not taken into account.

The specialization analysis is conditioned by the creation of a clean and reliable regional monitoring tool which takes into account headquarter effects. This was done during as part of the second component of the AMCER, which allowed validating the FP participations of each of the nine regions covered by the project.

The specialization analysis has been carried out for each theme of the cooperation programme. As an underlying hypothesis, we consider there is no asymmetry of information within a theme. This means that we consider national and regional stakeholders to be equally informed about all the research areas and funding opportunities covered in the theme.

In order to avoid the appearance of a mass effect of some research areas against others, the share (weight) of the area within the theme is not considered in the specialization profile. Instead, the European profile is considered as the baseline (Base 100) for regional and national comparisons. The specialization profile is established by measuring the spread between the EU baseline and national or regional EC funding distribution among the research areas.

In other words, this methodology allows identifying which research areas are over-represented and under-represented among all research areas. This provides information regarding the preferences of national and regional research communities in terms of priority research areas. It should be taken into account however, that the analysis does not consider the possible existing competition between European, national and regional funding opportunities at the stakeholder level.

Remarks on the specialisation indexes

The analysis does not constitute a performance indicator. Instead, it presents the differences in terms of distribution of funding among research areas at the national and regional level, compared to the FP standard, and regardless of the total funding weight of each research area. A comparison between the national profile and the EU profile illustrates the national and regional specialization trends. A comparison can also be carried out between national and regional specialization profiles, allowing to know if the regional specialization profile follows the national profile. The difference between profiles can be unlighted by national or regional experts aware of the territorial.

In order to identify areas of specialization, readers must identify the specialization index provided for each research area. If the 'specialisation index' is above the European 100 base, it can be stated that the region or country is specialized in that particular research area. On the other hand, if the specialization index stands below 100, the area is underrepresented and there is no indication of specialization in this area.

For each theme covered by the FP7 cooperation programme, the three following sets of information are provided:

i)   The overall EU budget distribution by research area
ii) The specialisation profile at the national and regional level, providing a picture of specialisation trends for the two levels. A comparison between the two levels can give information on regional specialisation trends (and highlight strategic initiatives taken at regional level).
iii) The ranking of research areas at the national and regional levels, according their specialisation scores. The table ranks the research areas according to their specialization score (in base 100) at the national and regional level (left and right column respectively). If the score is above 100, the area is over represented in comparison to the European standard, providing an indication on the specialization trend of the country or the region.

Health

Rk	Research area	%
1	Translational research in other major diseases	21.6%
2	Translational research in major infectious diseases: To confront major threats to public health	19.1%
3	Integrating biological data and processes: large-scale data gathering, systems biology	17.6%
4	Innovative therapeutic approaches and interventions	10.0%
5	Research on the brain and related diseases, human development and ageing	8.3%
6	Detection, diagnosis and monitoring	6.7%
7	High-throughput research	4.0%
8	Translating the results of clinical research outcome into clinical practice including better use of medicines, and appropriate use of behavioural and organisational interventions and new health therapies and technologies	2.9%
9	International public health & health systems	2.6%
10	Quality, efficiency and solidarity of healthcare systems including transitional health systems	2.6%
11	Health promotion	2.1%
12	Suitability, safety, efficacy of therapies	1.3%
13	Specific international cooperation actions for health system research	1.1%

Figure 6 Specialisation profiles of Italy and Tuscany
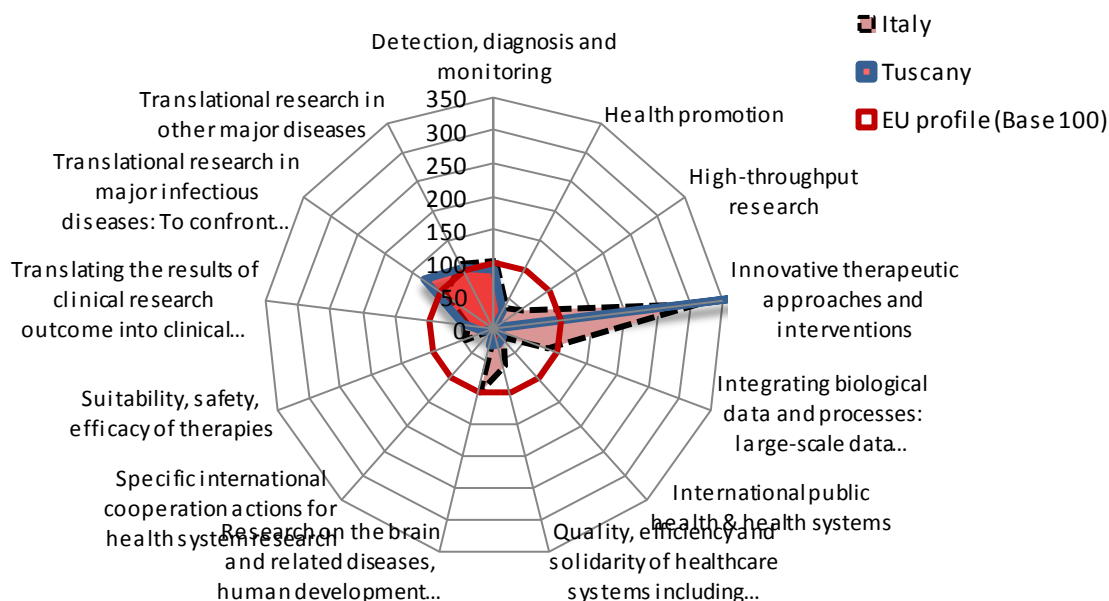
The following table ranks the research areas according to their specialization score (in base 100) at the national and regional level (left and right column respectively). If the score is above 100, the area is over represented in comparison to the European standard, providing an indication on the specialization trend of the country or the region.

Table 2 Specialisation ranking for Italy and Tuscany

Rk	Italy	Index base 100	Rk	Tuscany	Index base 100
1	Innovative therapeutic approaches and interventions	309	1	Innovative therapeutic approaches and interventions	403
2	Translational research in major infectious diseases: To confront major threats to public health	111	2	Translational research in major infectious diseases: To confront major threats to public health	129
3	Detection, diagnosis and monitoring	102	3	Translational research in major infectious diseases: To confront major threats to public health	103
4	Research on the brain and related diseases, human development and ageing	99	4	Detection, diagnosis and monitoring	88
5	Translational research in major infectious diseases: To confront major threats to public health	93	5	Translating the results of clinical research outcome into clinical practice including better use of medicines, and appropriate use of behavioural and organisational interventions and new health therapies and technologies	49
6	Integrating biological data and processes: large-scale data gathering, systems biology	84	6	Research on the brain and related diseases, human development and ageing	29
7	Quality, efficiency and solidarity of healthcare systems including transitional health systems	58	7	Health promotion	27
8	Suitability, safety, efficacy of therapies	49	8	Quality, efficiency and solidarity of healthcare systems including transitional health systems	27
9	High-throughput research	49	9	INTERNATIONAL PUBLIC HEALTH & HEALTH SYSTEMS	20
10	Translating the results of clinical research outcome into clinical practice including better use of medicines, and appropriate use of behavioural and organisational interventions and new health therapies and technologies	42	10	Suitability, safety, efficacy of therapies	18
11	Health promotion	35	11	Integrating biological data and processes: large-scale data gathering, systems biology	5
12	INTERNATIONAL PUBLIC HEALTH & HEALTH SYSTEMS	18			

Food, Agriculture, and Biotechnology

Table 3 Budget breakdown in research areas

Rk	Research area	%
1	Increased sustainability of all production systems (agriculture, forestry, fisheries and aquaculture); plant health and crop protection	18.4%
2	Socio-economic research and support to policies	9.8%
3	Nutrition	8.8%
4	Optimised animal health production and welfare across agriculture, fisheries and aquaculture	8.8%
5	Marine and fresh-water biotechnology (blue biotechnology)	8.1%

6	Food processing	7.1%
7	Food quality and safety	6.4%
8	Novel sources of biomass and bioproducts	6.3%
9	Enabling Research	6.0%
10	Industrial biotechnology: novel high added-value bio-products and bio-processes	5.4%
11	Environmental impacts and total food chain	4.2%
12	Consumers	3.3%
13	Environmental biotechnology	3.0%
14	Emerging trends in biotechnology	2.3%
15	The Ocean of Tomorrow	1.5%
16	Biorefinery	0.5%
17	Energy Efficiency in Agriculture	0.1%

Figure 7 Specialisation profiles of Italy and Tuscany
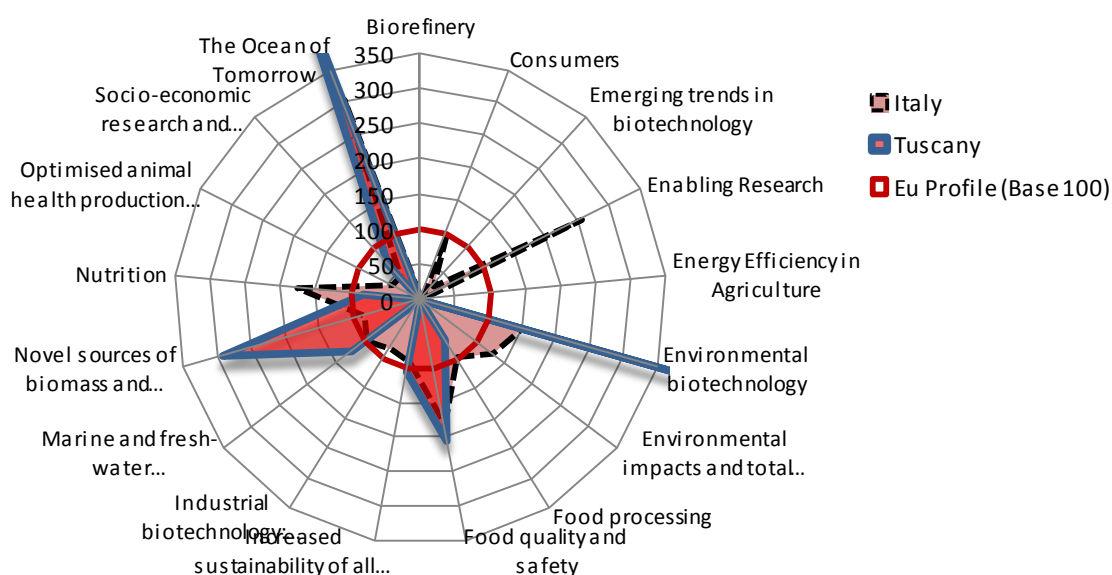
Table 4 Specialisation ranking for Italy and Tuscany

Rk	Italy	Index base 100	Rk	Tuscany	Index base 100
1	The Ocean of Tomorrow	304	1	The Ocean of Tomorrow	481
2	Enabling Research	255	2	Environmental biotechnology	450
3	Food quality and safety	180	3	Novel sources of biomass and bioproducts	292
4	Nutrition	178	4	Food quality and safety	204
5	Environmental biotechnology	149	5	Marine and fresh-water biotechnology (blue biotechnology)	122
6	Environmental impacts and total food chain	127	6	Increased sustainability of all production systems (agriculture, forestry, fisheries and aquaculture); plant health and crop protection	104
7	Consumers	99	7	Nutrition	81
8	Marine and fresh-water biotechnology (blue	98	8	Socio-economic research and support to policies	68

	biotechnology)				
9	Food processing	96	9	Food processing	67
10	Increased sustainability of all production systems (agriculture, forestry, fisheries and aquaculture); plant health and crop protection	91			
11	Novel sources of biomass and bioproducts	84			
12	Industrial biotechnology: novel high added-value bio-products and bio-processes	83			
13	Optimised animal health production and welfare across agriculture, fisheries and aquaculture	46			
14	Socio-economic research and support to policies	45	14	Energy Efficiency in Agriculture	0
15	Emerging trends in biotechnology	25	15	Environmental impacts and total food chain	0
16	Biorefinery	0	16	Industrial biotechnology: novel high added-value bio-products and bio-processes	0
17	Energy Efficiency in Agriculture	0	17	Optimised animal health production and welfare across agriculture, fisheries and aquaculture	0

Information and Communication Technologies

Table 5 Budget breakdown in research areas

Rk	Research area	%
1	Pervasive and Trustworthy network and service infrastructures	26.4%
2	Components, systems, engineering	21.6%
3	Towards sustainable and personalised healthcare	9.2%
4	Cognitive systems, interaction, robotics	9.0%
5	Digital libraries and content	8.8%
6	ICT for mobility, environmental sustainability and energy efficiency	8.5%
7	Future and emerging technologies	8.3%
8	ICT for Independent Living, Inclusion and Governance	3.1%
9	Smart Factories/virtual factories	2.4%
10	Future Internet experimental facility and experimentally-driven research	1.1%
11	ICT for the Fully Electric Vehicle	1.0%
12	Exa-scale computing, software and simulation	0.4%

Figure 8 Specialisation profiles of Italy and Tuscany
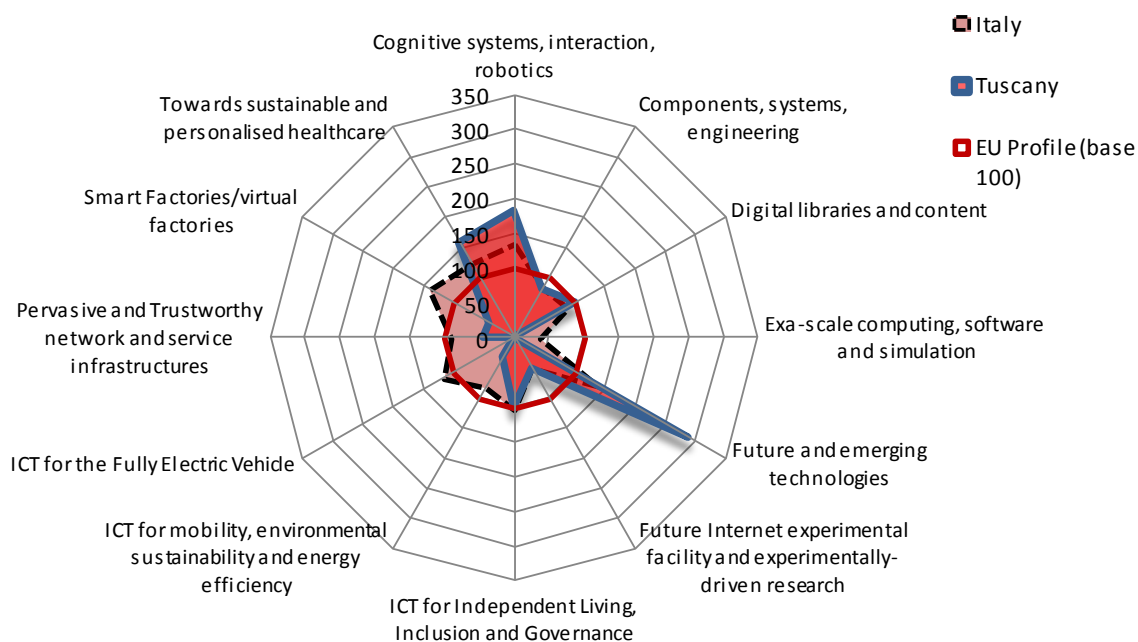
Table 6 Specialisation ranking for Italy and Tuscany

Rk	Italy	Index base 100	Rk	Tuscany	Index base 100
1	Pervasive and Trustworthy network and service infrastructures	140	1	Future and emerging technologies	287
2	Exa-scale computing, software and simulation	137	2	Cognitive systems, interaction, robotics	182
3	Smart Factories/virtual factories	124	3	Towards sustainable and personalised healthcare	157
4	ICT for mobility, environmental sustainability and energy efficiency	116	4	Digital libraries and content	101
5	Future Internet experimental facility and experimentally-driven research	103	5	ICT for Independent Living, Inclusion and Governance	101
6	Towards sustainable and personalised healthcare	100	6	Components, systems, engineering	80
7	ICT for the Fully Electric Vehicle	90	7	Future Internet experimental facility and experimentally-driven research	51
8	Components, systems, engineering	87	8	Pervasive and Trustworthy network and service infrastructures	44
9	Cognitive systems, interaction, robotics	83	9	Smart Factories/virtual factories	41
10	ICT for Independent Living, Inclusion and Governance	82	10	ICT for mobility, environmental sustainability and energy efficiency	32
11	Future and emerging technologies	49			
12	Digital libraries and content	37			

Nanosciences, Nanotechnologies, Materials and new Production Technologies

Table 7 Budget breakdown in research areas

Rk	Sub theme	Research area	%
1	Nanosciences	Nanotechnology for benefiting environment, energy and health	12.9%
2	New production	Adaptive production systems	12.1%
3	Nanosciences	Maximising the contribution of Nanotechnology on sustainable development	9.4%
4	Materials	Innovative materials for advanced applications	8.5%
5	New production	Rapid transfer and integration of new technologies into the design and operation of manufacturing processes	7.8%
6	Materials	Using engineering to develop high performance knowledge-based materials	7.6%
7	New production	Exploitation of the convergence of technologies	7.6%
8	New production	Development and validation of new industrial models and strategies	6.0%
9	Materials	Enabling R&D in Nanostructured materials	5.8%
10	Materials	Advances in chemical technologies and materials processing	5.7%
11	Materials	Structuring actions/new materials	4.6%
12	Nanosciences	Ensuring the safety of Nanotechnology	4.1%
13	New production	Networked production	3.7%
14	Integration	Substantial innovation in the European medical industry: development of nanotechnology-based systems for in-vivo diagnosis and therapy (in coordination with topic HEALTH-2007-2.4.1-7 and HEALTH-2007-1.2-3 in Theme 1 Health)	2.6%
15	Integration	Smart materials for applications in the sectors of construction and of machinery and production equipment	0.8%
16	Integration	Sustainable new products and markets through bioproduction of green forest-based chemicals and materials	0.7%

Figure 9 Specialisation profiles of Italy and Tuscany
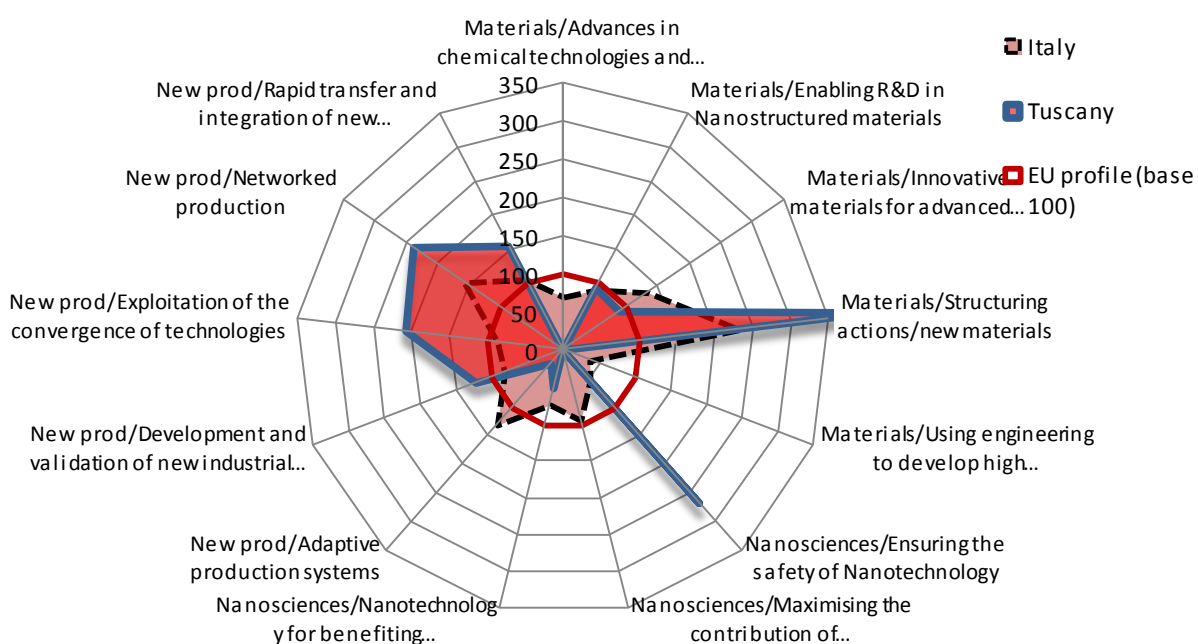
Table 8 Specialisation ranking for Italy and Tuscany

Rk	Italy	Index base 100	Rk	Tuscany	Index base 100
1	Materials/Structuring actions/new materials	231	1	Materials/Structuring actions/new materials	406
2	New prod/Networked production	157	2	Nanosciences/Ensuring the safety of Nanotechnology	268
3	Materials/Innovative materials for advanced applications	134	3	New prod/Networked production	237
4	New prod/Adaptive production systems	130	4	New prod/Exploitation of the convergence of technologies	207
5	New prod/Rapid transfer and integration of new technologies into the design and operation of manufacturing processes	106	5	New prod/Rapid transfer and integration of new technologies into the design and operation of manufacturing processes	154
6	Nanosciences/Maximising the contribution of Nanotechnology on sustainable development	94	6	New prod/Development and validation of new industrial models and strategies	121
7	Materials/Enabling R&D in Nanostructured materials	90	7	Materials/Enabling R&D in Nanostructured materials	92
8	New prod/Exploitation of the convergence of technologies	86	8	Materials/Innovative materials for advanced applications	89
9	New prod/Development and validation of new industrial models and strategies	82	9	Nanosciences/Nanotechnology for benefiting environment, energy and health	52
10	Nanosciences/Nanotechnology for benefiting environment, energy and health	73	10	New prod/Adaptive production systems	24
11	Materials/Advances in chemical technologies and materials processing	70			
12	Nanosciences/Ensuring the safety of Nanotechnology	52			
13	Materials/Using engineering to develop high performance knowledge-based materials	37			

Energy

Table 9 Budget breakdown in research areas

Rk	Research area	%
1	Renewable electricity generation	31.5%
2	Renewable fuel production	21.0%
3	Smart energy networks	13.7%
4	Energy efficiency and savings	13.3%
5	CO2 capture and storage technologies for zero emission power generation	9.4%
6	Clean coal technologies	5.9%
7	Hydrogen and fuel cells	3.1%
8	Knowledge for energy policy making	2.1%

Figure 10 Specialisation profiles of Italy and Tuscany
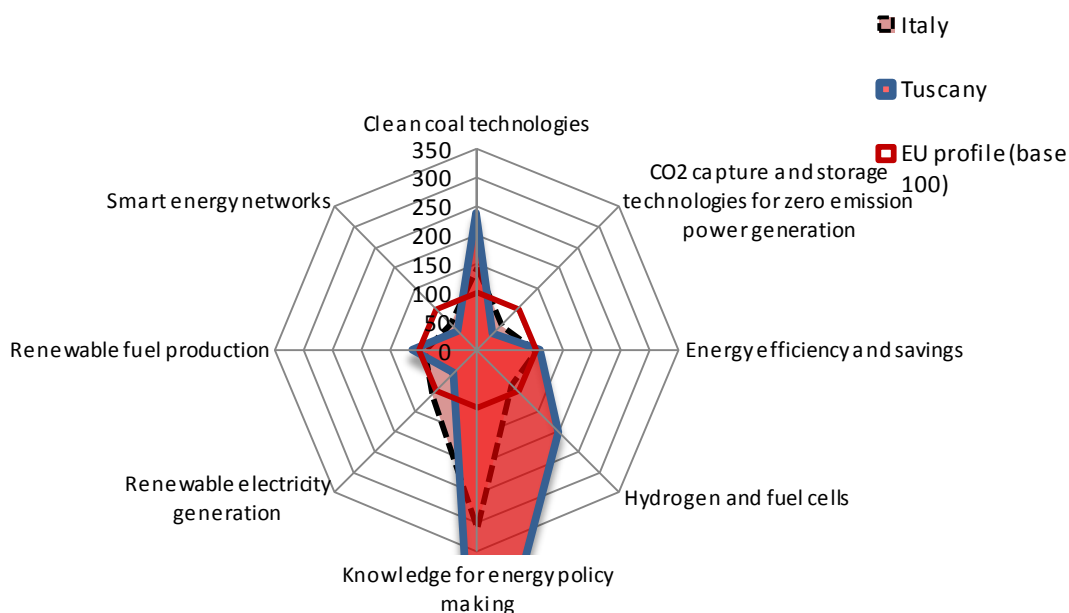
Table 10 Specialisation ranking for Italy and Tuscany

Rk	Italy	Index base 100	Rk	Tuscany	Index base 100
1	Knowledge for energy policy making	309	1	Knowledge for energy policy making	686
2	Clean coal technologies	145	2	Clean coal technologies	237
3	Renewable electricity generation	110	3	Hydrogen and fuel cells	202
4	Energy efficiency and savings	102	4	Energy efficiency and savings	111
5	Renewable fuel production	92	5	Renewable fuel production	111
6	Hydrogen and fuel cells	84	6	Renewable electricity generation	56
7	Smart energy networks	66	7	Smart energy networks	45
8	CO2 capture and storage technologies for zero emission power generation	61	8	CO2 capture and storage technologies for zero emission power generation	40

Environment (including Climate Change)

Table 11 Budget breakdown in research areas

Rk	Sub theme	Research area	%
1	Climate change, pollution, and risks	Pressures on environment and climate	19.5%
2	Sustainable management of resources	Conservation and sustainable management of natural and man-made resources and biodiversity	17.4%
3	Environmental technologies	Environmental technologies for observation, simulation, prevention, mitigation, adaptation, remediation and restoration of the natural and man-made environment	17.1%

4	Climate change, pollution, and risks	Environment and Health	10.4%
5	Earth observation and assessment tools for sustainable development	Earth and ocean observation systems and monitoring methods for the environment and sustainable development	9.7%
6	Sustainable management of resources	Management of marine environments	9.0%
7	Climate change, pollution, and risks	Natural hazards	7.0%
8	Earth observation and assessment tools for sustainable development	Forecasting methods and assessment tools for sustainable development taking into account differing scales of observation	6.8%
9	Environmental technologies	Protection, conservation and enhancement of cultural heritage, including human habitat	3.2%

Figure 11 Specialisation profiles of Italy and Tuscany

Table 12 Specialisation ranking for Italy and Tuscany

Rk	Italy	Index base 100	Rk	Tuscany	Index base 100
1	Natural hazards	254	1	Protection, conservation and enhancement of cultural heritage, including human habitat	301
2	Protection, conservation and enhancement of cultural heritage, including human habitat	245	2	Natural hazards	227
3	Environmental technologies for observation, simulation, prevention, mitigation, adaptation, remediation and restoration of the natural and man-made environment	119	3	Environmental technologies for observation, simulation, prevention, mitigation, adaptation, remediation and restoration of the natural and man-made environment	205
4	Earth and ocean observation systems and monitoring methods for the environment and sustainable development	107	4	Earth and ocean observation systems and monitoring methods for the environment and sustainable development	181
5	Pressures on environment and climate	84	5	Conservation and sustainable management of natural and man-made resources and biodiversity	46
6	Conservation and sustainable management of natural and man-made resources and biodiversity	71	6	Pressures on environment and climate	38

7	Management of marine environments	65	7	Environment and Health	34
8	Environment and Health	55	8	Forecasting methods and assessment tools for sustainable development taking into account differing scales of observation	33
9	Forecasting methods and assessment tools for sustainable development taking into account differing scales of observation	49	9	Management of marine environments	8

Transport (Aeronautics)

Table 13 Budget breakdown in research areas

Rk	Research area	%
1	Propulsion	21.9%
2	Aerostructures	15.1%
3	Design Systems and Tools	8.8%
4	Systems and Equipment	8.6%
5	Production	7.0%
6	Flight Physics	6.5%
7	Avionics	4.2%
8	Maintenance	3.9%
9	Novel Air Transport Vehicles	3.9%
10	Airports	3.8%
11	Human Factors	3.5%
12	Green Air Transport Operations	3.3%
13	Guidance and Control	2.6%
14	Systems	2.3%
15	Personal air transport systems	2.0%
16	Lift	1.7%
17	Interior space	1.0%

Figure 12 Specialisation profiles of Italy and Tuscany
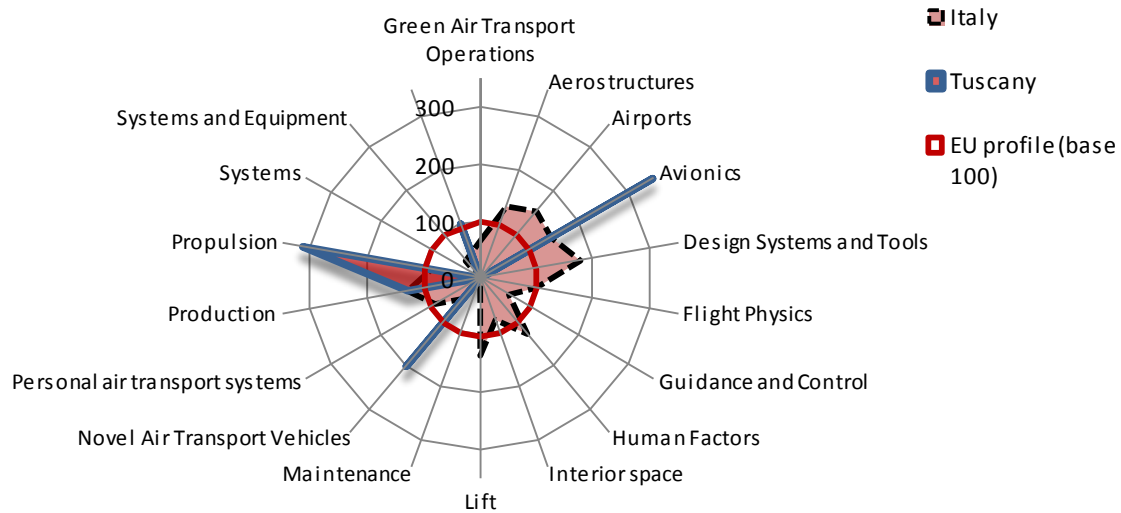
Table 14 Specialisation ranking for Italy and Tuscany

Rk	Italy	Index base 100	Rk	Tuscany	Index base 100
1	Design Systems and Tools	177	1	Avionics	346
2	Airports	152	2	Propulsion	314
3	Avionics	142	3	Novel Air Transport Vehicles	200
4	Lift	136	4	Production	128
5	Aerostructures	134			
6	Production	128			
7	Human Factors	128			
8	Flight Physics	98			
9	Personal air transport systems	90			
10	Propulsion	87			
11	Interior space	78			
12	Green Air Transport Operations	65			
13	Guidance and Control	58			
14	Novel Air Transport Vehicles	47			
15	Systems and Equipment	39			

Transport (Surface transport)

Table 15 Budget breakdown in research areas

Rk	Research area	%
1	The greening of products and operations	24.0%
2	Integrated safety and security for surface transport systems	21.2%
3	Competitive surface transport products and services	12.1%
4	Innovative strategies for clean urban transport (CIVITAS Plus II)	10.8%
5	Logistics and intermodal transport	7.7%
6	New transport and mobility concepts	7.4%
7	Interoperability and Safety	4.1%
8	Environment-friendly and efficient industrial processes	3.0%

9	Maritime and inland waterway transport	2.9%
10	High quality public transport	2.7%
11	Policy support	1.6%
12	Integrated electric auxiliaries and on-board systems	1.0%
13	Socio-economic issues	0.8%
14	Electrical machines	0.4%
15	Optimised thermal engine development and integration	0.4%

Figure 13 Specialisation profiles of Italy and Tuscany
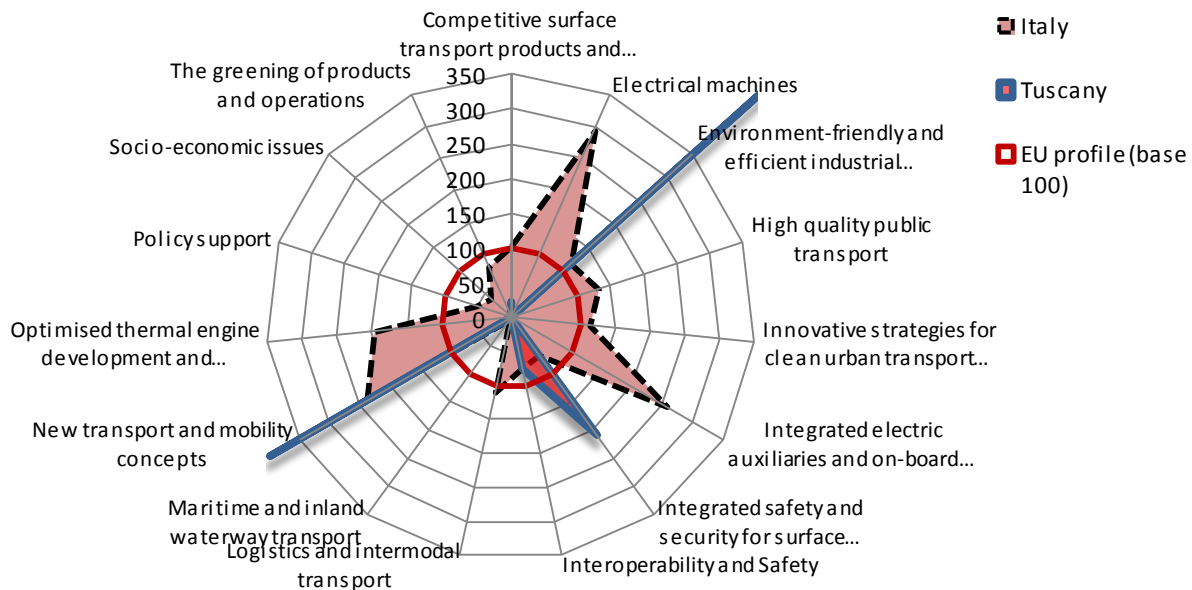
Table 16 Specialisation ranking for Italy and Tuscany

Rk	Italy	Index base 100	Rk	Tuscany	Index base 100
1	Electrical machines	295	1	Environment-friendly and efficient industrial processes	678
2	Integrated electric auxiliaries and on-board systems	257	2	New transport and mobility concepts	399
3	New transport and mobility concepts	239	3	Integrated safety and security for surface transport systems	209
4	Optimised thermal engine development and integration	197	4	Interoperability and Safety	76
5	High quality public transport	131	5	Competitive surface transport products and services	22
6	Environment-friendly and efficient industrial processes	115			
7	Innovative strategies for clean urban transport (CIVITAS Plus II)	113			
8	Logistics and intermodal transport	110			
9	Competitive surface transport products and services	103			

10	The greening of products and operations	80
11	Interoperability and Safety	75
12	Integrated safety and security for surface transport systems	68
13	Policy support	53
14	Socio-economic issues	40
15	Maritime and inland waterway transport	4

Socio-economic sciences and Humanities

Table 17 Budget breakdown in research areas

Rk	Research area	%
1	Socio-economic development trajectories	16.1%
2	Participation and Citizenship in Europe	9.0%
3	Interactions and interdependences between world regions and their implications	9.0%
4	Societal trends and lifestyles	8.2%
5	Diversities and Commonalities in Europe	7.8%
6	Changing role of knowledge throughout the economy	6.5%
7	Regional, territorial and social cohesion	6.5%
8	Conflicts, peace and human rights	6.1%
9	Structural changes in the European knowledge economy and society	5.9%
10	Cultural interactions in an international perspective	5.2%
11	Demographic changes	3.7%
12	Foresight activities	3.7%
13	Strengthening policy coherence and coordination in Europe	3.0%
14	Europe's changing role in the world	2.8%
15	Developing better indicators for policy	2.5%
16	Provision of underlying official statistics	1.7%
17	Use of indicators and related approaches for the evaluation of research policies and programmes	1.2%
18	Current use of indicators in policy	1.1%

Figure 14 Specialisation profiles of Italy and Tuscany
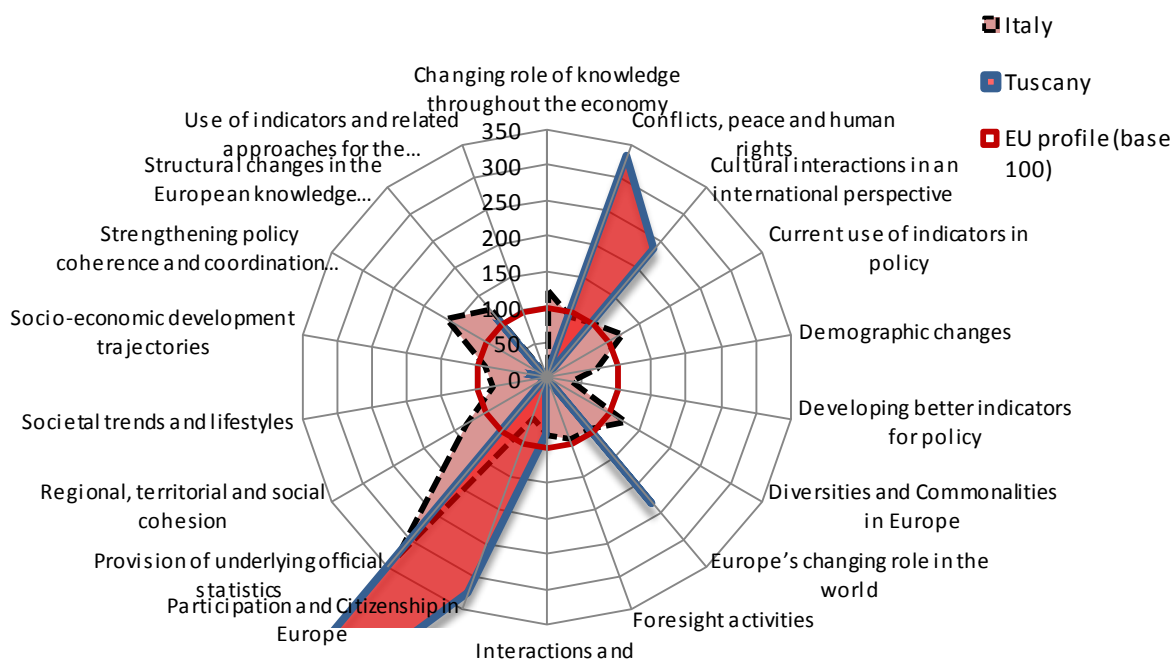
Table 18 Specialisation ranking for Italy and Tuscany

Rk	Italy	Index base 100	Rk	Tuscany	Index base 100
1	Provision of underlying official statistics	332	1	Provision of underlying official statistics	765
2	Strengthening policy coherence and coordination in Europe	166	2	Conflicts, peace and human rights	333
3	Regional, territorial and social cohesion	133	3	Participation and Citizenship in Europe	324
4	Diversities and Commonalities in Europe	126	4	Cultural interactions in an international perspective	237
5	Structural changes in the European knowledge economy and society	126	5	Europe's changing role in the world	232
6	Changing role of knowledge throughout the economy	122	6	Structural changes in the European knowledge economy and society	112
7	Current use of indicators in policy	121	7	Interactions and interdependences between world regions and their implications	81
8	Cultural interactions in an international perspective	99	8	Socio-economic development trajectories	32
9	Europe's changing role in the world	95			
10	Foresight activities	93			
11	Conflicts, peace and human rights	91			
12	Socio-economic development trajectories	90			
13	Interactions and interdependences between world regions and their implications	82			
14	Societal trends and lifestyles	79			

15	Demographic changes	70
16	Participation and Citizenship in Europe	62
17	Developing better indicators for policy	34

Space

Table 19 Budget breakdown in research areas

Rk	Research area	%
1	(Pre-)operational validation of GMES services and products	56.2%
2	Research to support space science and exploration	14.9%
3	Research to support space transportation and key technologies	13.9%
4	Continuity of GMES services in the areas of Marine and Atmosphere	8.0%
5	Research into reducing the vulnerability of space assets	7.0%

Figure 15 Specialisation profiles of Italy and Tuscany
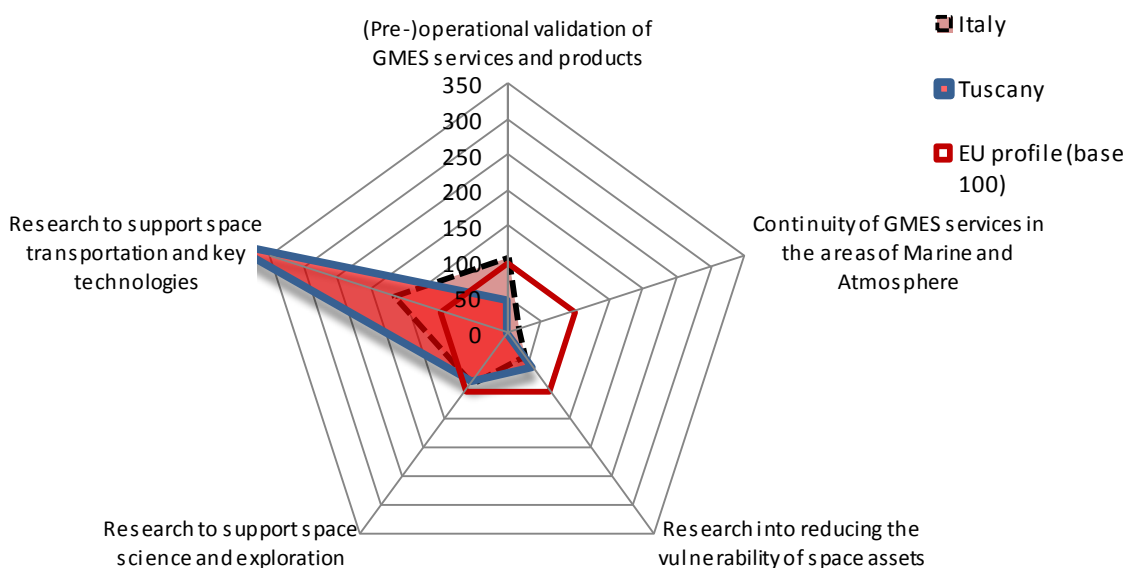
Table 20 Specialisation ranking for Italy and Tuscany

Rk	Italy	Index base 100	Rk	Tuscany	Index base 100
1	Research to support space transportation and key technologies	168	1	Research to support space transportation and key technologies	411
2	(Pre-)operational validation of GMES services and products	106	2	Research to support space science and exploration	84
3	Research to support space science and exploration	86	3	Research into reducing the vulnerability of	60

			space assets	
4	Research into reducing the vulnerability of space assets	38	4	(Pre-)operational validation of GMES services and products	46
5	Continuity of GMES services in the areas of Marine and Atmosphere	15	5	Continuity of GMES services in the areas of Marine and Atmosphere	0

Security

Rk	Research area	%
1	Intelligent surveillance and enhancing border security	23.3%
2	Restoring security and safety in case of crisis	22.2%
3	Increasing the Security of citizens	19.4%
4	Increasing the Security of infrastructures and utilities	17.9%
5	Security and society	8.6%
6	Security Research coordination and structuring	4.3%
7	Security systems integration, interconnectivity and Interoperability	4.2%

Figure 16 Specialisation profiles of Italy and Tuscany
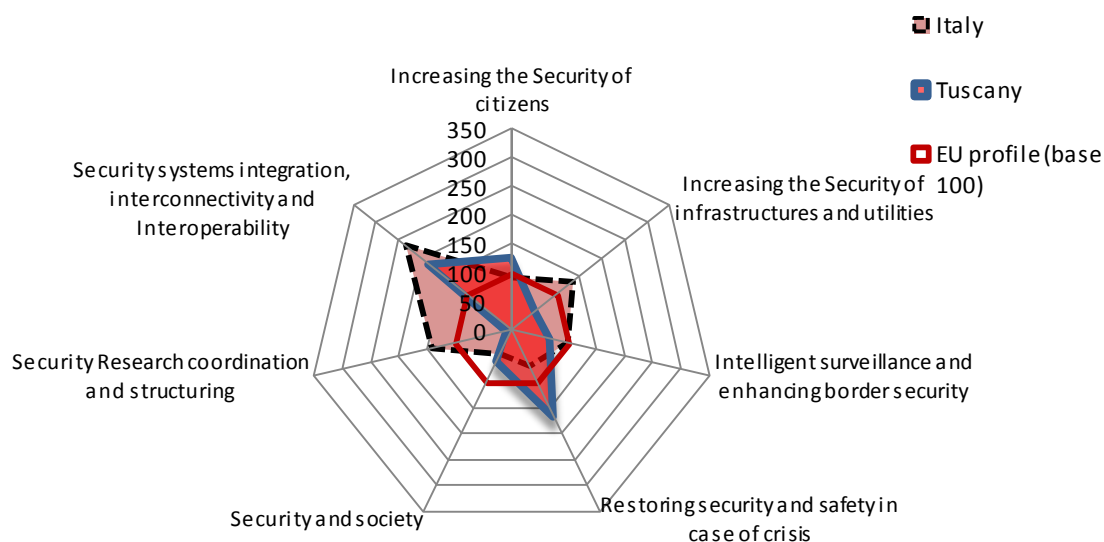
Table 22 Specialisation ranking for Italy and Tuscany

Rk	Italy	Index base 100	Rk	Tuscany	Index base 100
1	Security systems integration, interconnectivity and Interoperability	236	1	Security systems integration, interconnectivity and Interoperability	183
2	Security Research coordination and structuring	143	2	Restoring security and safety in case of crisis	167

3	Increasing the Security of infrastructures and utilities	134	3	Increasing the Security of citizens	126
4	Intelligent surveillance and enhancing border security	98	4	Intelligent surveillance and enhancing border security	68
5	Increasing the Security of citizens	91	5	Security and society	60
6	Restoring security and safety in case of crisis	69	6	Increasing the Security of infrastructures and utilities	52
7	Security and society	47	7	Security Research coordination and structuring	9

Annex 2 – FP7 participation scoreboard

This section covers all the indicators produced for the FP7 after validation of the list of participations and contains the following parts:

i.   Headquarter analysis

ii.   Main regional indicators

iii.   Intraregional indicators

iv.   International cooperation

Headquarter analysis

This section presents the results of the headquarter effect analysis for the focused region. The following table presents number of modified participations of the region, after elimination of the existing headquarter effect. The total number of participations in the region is estimated by adding the total number of participations with no headquarter effect, to the ingoing participations (participations previously attributed to an outside region[9], but now attributed to the focused region).

Table 23 Overall result of the Headquarter analysis

Type of participation	Nbr of participations
(1) Nbr of participation with no headquarter effect	577
(2) Nbr of ingoing participations	71
(3) Nbr of outgoing participations	14
Total nbr of participations (1)+(2)	648

The following table presents a breakdown of the previous table by geographical origin of participations. The second and third columns indicate the NUTS II territory from which the participation is added or subtracted. In the case of incoming participations, the focused region[10] gains a participation, while the impacted region loses one. The opposite is true of outgoing participations.

Table 24 Participation localisation detail (ingoing participations, outgoing participations and static participations)

Participation flow	Regions with participations to substract	Regions with participation to add	Number of participation concerned	Total	%
In	ITC45	ITE12	1		
In	BE100	ITE14	1		
In	ITC45	ITE14	2	71	11,0%

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[9] Impacted region.

[10] The region being analysed in the current scoreboard.

	ITD52	ITE14	1		
In					
In	ITE43	ITE14	23		
In	ITE43	ITE15	4		
In	ITC34	ITE17	1		
In	ITD52	ITE17	1		
In	ITE43	ITE17	34		
In	ITG13	ITE17	1		
In	ITG16	ITE17	1		
In	ITE43	ITE19	1		
out	FI195	FI183	1		
out	ITE14	ITC45	3		
out	ITE14	ITC47	1		
out	ITE14	ITD54	1		
out	ITE14	ITD55	1		
out	ITE19	ITD59	1		
out	ITE14	ITG13	2		
out	ITE14	ITE22	1		
out	ITE14	ITE43	3		
out	ITE17	UKI23	1	14	2,4%
no Headquarter effect			577	577	89,0%
Total (after correction)				**648**	**100,0%**

The following table presents the distribution of participations (ingoing, outgoing, no headquarter effect) by participant typology (HES, OTH, PRC, PUB, REC).

Table 25 Typology of Ingoing, Outgoing and Static participations

Organisation type	Ingoing participations		Outgoing participations		Static participations	
Higher of secondary education est.(HES)	2	2,8%		0,0%	320	55,5%
Other (OTH)		0,0%		0,0%	3	0,5%
Private commercial(PRC)	21	29,6%	7	50,0%	182	31,5%
Public body (excl.research and education) (PUB)		0,0%		0,0%	18	3,1%
Research organisations (REC)	48	67,6%	7	50,0%	54	9,4%
Total	71	100,0%	14	100,0%	577	100,0%

Regional indicators

This section presents a set of indicators allowing to compare and characterise the participation of the region in FP7, in light of national indicators. It also presents the distribution of EC funding at an infra-regional level (N-1 if the focus region is considered as N).

Toscana in the FP7

The following table gives an overview of the weight of the region at national level in terms of number of participations, number of coordinations and volume of funding received. It allows to compare regional figures (and their weight at the national level), to national figures (and their weight at the European level).

Table 26 Share of the region at national level

	Toscana	IT	FP	% in Toscana in IT	% in IT in FP
Nbr of participations in projects	648	6272	69719	10,3%	9,0%
Nbr of coordinations	128	1046	12929	12,2%	8,1%
EC contribution	205 603 675	1 842 235 327	22 188 391 959	11,2%	8,3%

Participant Typology

The following table presents the distribution of participations, coordinations and EC contributions according to the different types of participants. A comparison of the distribution of participants between the regional and national level allows to identify the particularities of the focused region.

Table 27 Participation typology-comparison between regional and national level

	Toscana				ITALY			
	Nbr of participations in projects	Nbr of coordinations	EC contribution (mln)	%	Nbr of participations in projects	Nbr of coordinations	EC contribution (mln)	%
Higher of secondary education est.(HES)	322	89,0	114	55,4%	2077	490	655,6	35,6%
Other (OTH)	3		0	0,1%	118	17	20,9	1,1%
Private commercial(PRC)	203	16,0	51	24,9%	2061	182	540,9	29,4%
Public body (excl.research and education) (PUB)	18	4,0	4	1,9%	240	33	43,6	2,4%
Research organisations (REC)	102	19,0	36	17,7%	1776	324	581,3	31,6%
Total	648	128,0	206	100,0%	6272	1046	1 842,2	100,0%

The following diagram compares the weight of the different types of participants in the region to the national average.

Figure 17 Participation typology-graphical comparison between national and regional profile (acc. EC contrib. distribution)
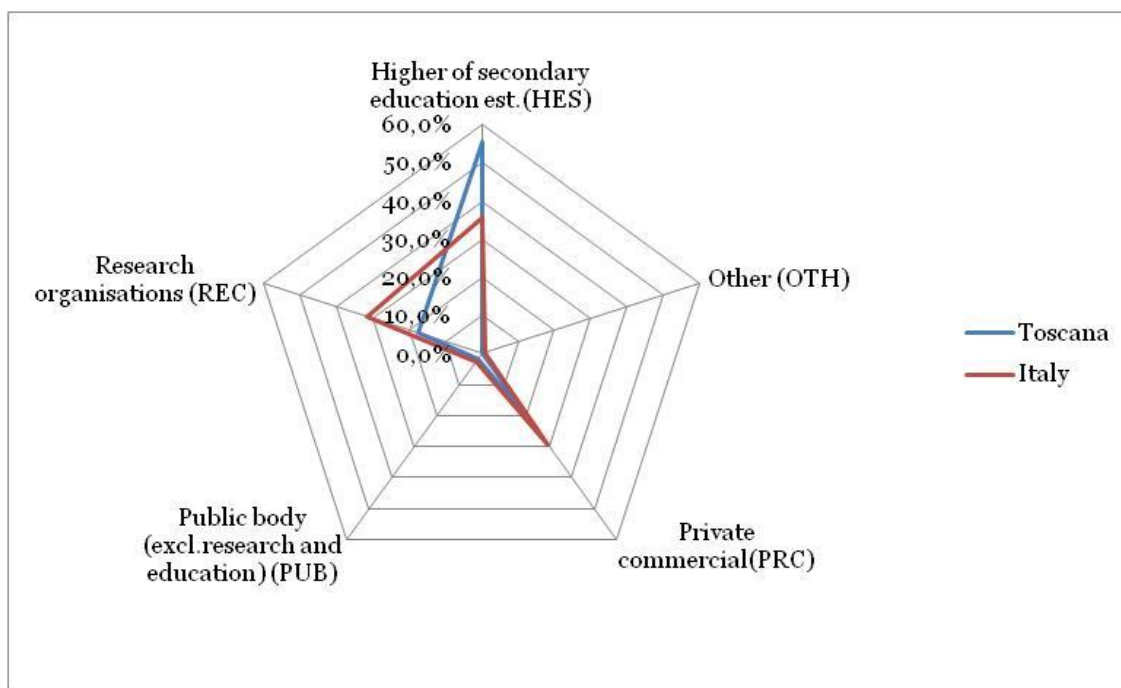
The table below presents the distribution of participants by legal type (private/public).

Table 28 Distribution of participations according the legal type-comparison between regional and national level

		Toscana		Italy	
	Private organisations	nbr	EC contrib (mlnEUR)	nbr	EC contrib (mlnEUR)
Private	PRC	203	51,2	2064	540,9
	PNP	50	19,2	1020	321,9
	total private	253	70	3 084	863
Public	Commercial	3	0,1	49	9,0
	PNP	392	135,1	3149	970,4
	total public	395	135	3 198	979
	TOTAL	648	206	6 282	1 842

SME participation

This section aims to give an overview on the participation of SMEs in the FP7. The following table presents the levels of participation of SMEs at the infra-regional, regional, national and European level.

Table 29 Number of funded SME

	Total Toscana	Total Italy	Total FP	ITE11	ITE12	ITE13	ITE14	ITE15	ITE16	ITE17	ITE18	ITE19	ITE1A
Nbr of participations in projects	129	1 127	11 545	9	1		39	10	13	45	1	9	2
EC contribution (mlnEUR)	30,4	255,8	2 873,6	1,7	0,4	0,0	9,2	2,2	2,7	10,9	0,5	1,9	0,8

The table below presents the distribution of SME participations according to their legal status (private profit and non-profit organisations).

Table 30 Distribution of SME among private profit and private non profit organisations

	West Finland		Finland	
	Nbr	EC Contrib (mlnEUR)	Nbr	EC Contrib (mlnEUR)
PRC	128	30,4	1045	235,2
PNP	1	0,0	82	20,6
TOTAL	**129**	**30,4**	**1127**	**255,8**

Regional participation among themes and activities of the programme

This section aims at providing information regarding the specialisation of the regions according to participations across FP7 themes. The level of specialisation of the region can be measured by comparing the levels of participation for each theme to the national and European averages.

Table 31 Participations among FP7 themes and activities-comparison of the distribution at Programme level, national level and regional level

N°	PROG SPEC	Theme	FP		Italy		Toscana	
			nbr	EC contrib (mlnEUR)	nbr	EC contrib (mlnEUR)	nbr	EC contrib (mlnEUR)
1	COOPERATION	Health	6 580	38 311,7	552	202,8	76	32,0
2	COOPERATION	Food, Agriculture, and Biotechnology	3 611	12 817,9	282	66,4	18	5,0
3	COOPERATION	Information and Communication Technologies	13 492	58 405,4	1 448	471,9	152	50,1
4	COOPERATION	Nanosciences, Nanotechnologies, Materials and new Production Technologies	4 881	23 146,4	506	153,7	53	14,6
5	COOPERATION	Energy	2 378	11 337,3	199	74,7	24	8,5
6	COOPERATION	Environment (including Climate Change)	4 592	17 622,4	335	73,0	31	6,8
7	COOPERATION	Transport (including Aeronautics)	5 445	33 527,7	567	156,6	41	9,8
8	COOPERATION	Socio-economic sciences and Humanities	1 515	3 354,2	125	24,2	17	3,8
9	COOPERATION	Security	1 590	8 610,5	158	48,4	16	3,5
10	COOPERATION	Space	1 449	8 715,6	161	37,2	19	5,1
11	COOPERATION	General Activities (Annex IV)	148	518,7	6	0,6		0,0
12	IDEAS	European Research Council	2 269	3 639,4	164	190,7	28	30,2
13	PEOPLE	Marie-Curie Actions	9 470	10 482,6	689	123,3	86	19,5
1	CAPACITIES	Research Infrastructures	3 921	24 495,1	329	109,1	19	8,7

4									
1 5	CAPACITIES	Research for the benefit of SMEs	4 485	5 835,4	45 3	63,9	4 0	4,1	
1 6	CAPACITIES	Regions of Knowledge	588	807,7	71	6,3	1 0	1,7	
1 7	CAPACITIES	Research Potential	239	263,1	16	8,1	2	0,3	
1 8	CAPACITIES	Science in Society	1 125	1 997,3	86	11,5	8	0,8	
1 9	CAPACITIES	Coherent development of research policies	100	107,9	6	0,8	1	0,4	
2 0	CAPACITIES	Activities of International Cooperation	584	1 038,1	38	4,2	1	0,1	
2 1	Euratom	Fusion Energy	64	129,6	5	0,1		0,0	
2 2	Euratom	Nuclear Fission and Radiation Protection	1 236	4 136,2	86	14,8	6	0,7	
		TOTAL	**69 762**	**22 189**	**6 28 2**	**1 842,2**	**6 4 8**	**205,6**	

Intraregional indicators

This section presents an overview the participation of infra-regional territories in FP7.

The following table presents a general overview of the distribution of participations, coordinations and EC contribution within the region (at Nuts n-1). The higher concentration of participation within specific territories usually reflects the presence of a stronger number of research organisations.

Table 32 distribution of the funded participations and EC contribution within the territory

	ITE 11	%	ITE 12	%	ITE 13	%	ITE 14	%	ITE 15	%	ITE 16	%	ITE 17	%	ITE 18	%	ITE 19	%	ITE 1A	%	Tot al Tos can a	%
Nbr of participati ons in projects	9	1,4 %	6	0,9 %	0	0,0 %	275	42, 4%	23	3,5 %	24	3,7 %	237	36, 6%	1	0,2 %	70	10, 8%	3	0,5 %	648	100 ,0%
Nbr of coordinati ons	1	0,8 %	0	0,0 %	0	0,0 %	64	50, 0%	2	1,6 %	1	0,8 %	47	36, 7%	0	0,0 %	13	10, 2%	0	0,0 %	128	100 ,0%
EC contributi on (€Mln)	1,7 2	0,8 %	1,2 4	0,6 %	0,0 0	0,0 %	76, 57	37, 2%	5,9 5	2,9 %	4,2 0	2,0 %	82, 85	40, 3%	0,4 9	0,2 %	30, 78	15, 0%	1,8 1	0,9 %	205 ,6	100 ,0%

The following table gives presents a break-down of infra-regional participations according to participant types (HES, OTH, PRC, PUB, REC).

Table 33 Intra regional participations and participation profile according the activity type

	ITE11 Massa Carrara			
Participant type	Nbr of participations in projects	Nbr of coordinations	EC contribution (mlnEUR)	%
HES				0,0%
OTH				0,0%
PRC	1	9	1 720 506	100,0%
PUB				0,0%
REC				0,0%
Total	**1**	**9**	**1 720 506**	**100,0%**

	ITE12 Lucca			
Participant type	Nbr of participations in projects	Nbr of coordinations	EC contribution (mlnEUR)	%
HES		1	226 481	18,3%
OTH				0,0%
PRC		4	980 554	79,3%
PUB		1	30 000	2,4%
REC				0,0%
Total	**0**	**6**	**1 237 035**	**100,0%**

	ITE13 Pistoia			
Participant type	Nbr of participations in projects	Nbr of coordinations	EC contribution (mlnEUR)	%
HES				
OTH				
PRC				
PUB				
REC				
Total	**0**	**0**	**0**	**0**

	ITE14 Firenze			
Participant type	Nbr of participations in projects	Nbr of coordinations	EC contribution (mlnEUR)	%
HES	45	142	44 140 641	57,7%
OTH		3	292 970	0,4%
PRC	2	66	14 643 289	19,1%
PUB	3	13	2 129 857	2,8%
REC	14	51	15 359 299	20,1%
Total	**64**	**275**	**76 566 055**	**100,0%**

	ITE15 Prato			
Participant type	Nbr of participations in projects	Nbr of coordinations	EC contribution (mlnEUR)	%
HES	1	3	1 259 844	21,2%
OTH				0,0%
PRC		10	2 214 119	37,2%
PUB		1	232 200	3,9%
REC	1	9	2 240 740	37,7%
Total	**2**	**23**	**5 946 903**	**100,0%**
	ITE16 Livorno			
Participant type	Nbr of participations in projects	Nbr of coordinations	EC contribution (mlnEUR)	%
HES				0,0%
OTH				0,0%
PRC		20	3 254 719	77,5%
PUB	1	1	324 832	7,7%
REC		3	620 793	14,8%
Total	**1**	**24**	**4 200 344**	**100,0%**
	ITE17 Pisa			
Participant type	Nbr of participations in projects	Nbr of coordinations	EC contribution (mlnEUR)	%
HES	38	136	55 910 177	67,5%
OTH				0,0%
PRC	6	64	14 990 979	18,1%
PUB		1	137 517	0,2%
REC	3	36	11 807 681	14,3%
Total	**47**	**237**	**82 846 354**	**100,0%**
	ITE18 Arezzo			
Participant type	Nbr of participations in projects	Nbr of coordinations	EC contribution (mlnEUR)	%
HES				0,0%
OTH				0,0%
PRC		1	492 000	100,0%
PUB				0,0%
REC				0,0%
Total	**0**	**1**	**492 000**	**100,0%**

	ITE19 Siena			
Participant type	Nbr of participations in projects	Nbr of coordinations	EC contribution (mlnEUR)	%
HES	5	40	12 408 467	40,3%
OTH				0,0%
PRC	7	27	12 095 335	39,3%
PUB				0,0%
REC	1	3	6 276 998	20,4%
Total	**13**	**70**	**30 780 800**	**100,0%**
	ITE1A Grosseto			
Participant type	Nbr of participations in projects	Nbr of coordinations	EC contribution (mlnEUR)	%
HES				0,0%
OTH				0,0%
PRC		2	834 247	46,0%
PUB		1	979 430	54,0%
REC				0,0%
Total	**0**	**3**	**1 813 677**	**100,0%**

The following table presents the distribution of infra-regional participations by FP7 themes.

Table 34 Participations among FP7 themes and activities at intra regional level (Nuts n-1)

Num	PROG SPEC	Theme	ITE11 nbr	ITE11 EC contrib	ITE12 nbr	ITE12 EC contrib	ITE13 nbr	ITE13 EC contrib	ITE14 nbr	ITE14 EC contrib	ITE15 nbr	ITE15 EC contrib	ITE16 nbr	ITE16 EC contrib	ITE17 nbr	ITE17 EC contrib	ITE18 nbr	ITE18 EC contrib	ITE19 nbr	ITE19 EC contrib	ITE1A nbr	ITE1A EC contrib
1	COOP	Health		0,0	1	0,0		0,0	27	7,7		0,0	1	0,5	14	3,3		0,0	33	20,4		0,0
2	COOP	Food, Agriculture, and Biotechnology		0,0		0,0		0,0	7	1,5		0,0	1	0,0	9	3,0		0,0	1	0,5		0,0
3	COOP	Information and Communication Technologies		0,0	3	0,9		0,0	37	8,3	10	2,8	4	0,9	83	32,6	1	0,5	12	3,8		0,0
4	COOP	Nanosciences, Nanotechnologies, Materials and new Production Technologies	2	0,2	2	0,3		0,0	22	6,1	5	0,9	6	0,5	17	6,4		0,0	1	0,3		0,0
5	COOP	Energy		0,0		0,0		0,0	9	3,9	1	0,2	2	0,4	10	2,7		0,0	1	0,3	1	1,0
6	COOP	Environment (including Climate Change)		0,0		0,0		0,0	16	3,3	4	1,2	1	0,3	9	2,1		0,0	1	0,0		0,0
7	COOP	Transport (including Aeronautics)		0,0		0,0		0,0	26	4,9		0,0	2	0,4	13	4,5		0,0		0,0		0,0
8	COOP	Socio-economic sciences and Humanities		0,0		0,0		0,0	8	1,6	1	0,2	1	0,1	4	0,9		0,0	3	0,9		0,0
9	COOP	Security		0,0		0,0		0,0	5	1,5		0,0	3	0,2	8	1,8		0,0		0,0		0,0
10	COOP	Space		0,0		0,0		0,0	9	1,8		0,0		0,0	8	2,4		0,0		0,0	2	0,8
11	COOP	General Activities (Annex IV)		0,0		0,0		0,0		0,0		0,0		0,0		0,0		0,0		0,0		0,0
12	CAPACITIES	European Research Council		0,0		0,0		0,0	13	16,3		0,0		0,0	15	13,9		0,0		0,0		0,0
13	CAPACITIES	Marie-Curie Actions	1	0,4		0,0		0,0	50	9,6		0,0		0,0	22	5,4		0,0	13	4,1		0,0
14	CAPACITIES	Research Infrastructures		0,0		0,0		0,0	13	6,7		0,0	1	0,5	5	1,5		0,0		0,0		0,0
15	CAPACITIES	Research for the benefit of SMEs	6	1,1		0,0		0,0	18	1,6		0,0	2	0,4	12	1,0		0,0	2	0,1		0,0
16	CAPACITIES	Regions of Knowledge		0,0		0,0		0,0	7	0,9		0,0		0,0	1	0,5		0,0	2	0,3		0,0
17	CAPACITIES	Research Potential		0,0		0,0		0,0	1	0,2	1	0,1		0,0		0,0		0,0		0,0		0,0
18	CAPACITIES	Science in Society		0,0		0,0		0,0	6	0,3	1	0,5		0,0		0,0		0,0	1	0,0		0,0
19	PEOPLE	Coherent development of research policies		0,0		0,0		0,0	1	0,4		0,0		0,0		0,0		0,0		0,0		0,0
20	IDEA	Activities of International		0,0		0,0		0,0		0,0		0,0		0,0	1	0,1		0,0		0,0		0,0

#																							
		Cooperation																					
21	EURA TOM	Fusion Energy		0,0		0,0		0,0		0,0		0,0		0,0		0,0		0,0		0,0		0,0
22	EURA TOM	Nuclear Fission and Radiation Protection		0,0		0,0		0,0		0,0		0,0		0,0	6	0,7		0,0		0,0		0,0
		TOTAL	9	1,7	6	1,2	0	0,0	275	76,6	23	5,9	24	4,2	237	82,8	1	0,5	70	30,8	3	1,8

International cooperation

This section aims at giving an overview of the main partners and collaboration themes of the focused region at the European level. The following indicators have been calculated on the basis of all projects including at least one participant from the focused region.

The following table presents the partner regions of the focused region.

Table 13 Partner regions

Partner regions	nb participations	% of total
Ile de France	301	5,2%
Baden-Württemberg	181	3,1%
London	180	3,1%
Bayern	164	2,9%
Nordrhein-Westfalen	150	2,6%
Comunidad de Madrid	139	2,4%
Lombardia	135	2,3%
Lazio	133	2,3%
Catalana	119	2,1%
Attiki	117	2,0%
Vlaams Gewest	115	2,0%
South East England	106	1,8%
RÉGION DE BRUXELLES-CAPITALE / BRUSSELS HOOFDSTEDE	88	1,5%
Arr. Halle-Vilvoorde	83	1,4%
East of England	81	1,4%

The table below presents the main partner organisations of the focused region.

Table 35 Partner organisations

Partner organisations	nb participations	% of total
CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE	62	1,1%
FRAUNHOFER-GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V	48	0,8%
MAX PLANCK GESELLSCHAFT ZUR FOERDERUNG DER WISSENSCHAFTEN E.V.	36	0,6%
IMPERIAL COLLEGE OF SCIENCE, TECHNOLOGY AND MEDICINE	33	0,6%
KATHOLIEKE UNIVERSITEIT LEUVEN	30	0,5%
CONSIGLIO NAZIONALE DELLE RICERCHE	30	0,5%
UNIVERSITY COLLEGE LONDON	30	0,5%
JRC -JOINT RESEARCH CENTRE- EUROPEAN COMMISSION	29	0,5%
COMMISSARIAT A L ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES	28	0,5%
Karlsruher Institut fuer Technologie	27	0,5%
Eidgenössische Technische Hochschule Zürich	26	0,5%
DEUTSCHES ZENTRUM FUER LUFT - UND RAUMFAHRT EV	25	0,4%
UNIVERSITAET STUTTGART	25	0,4%
ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE	24	0,4%
THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF CAMBRIDGE	24	0,4%

The following table provides the most frequent European coordinators of participants from the focused region in FP7.

Table 36 The main coordinators of regional participants

FREQUENT COORDINATORS	Nb coordinations
MAX PLANCK GESELLSCHAFT ZUR FOERDERUNG DER WISSENSCHAFTEN E.V.	5
KATHOLIEKE UNIVERSITEIT LEUVEN	5
THE UNIVERSITY OF BIRMINGHAM	5
CONSIGLIO NAZIONALE DELLE RICERCHE	5
FRAUNHOFER-GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V	5
ERASMUS UNIVERSITAIR MEDISCH CENTRUM ROTTERDAM	4
CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE	4
CHALMERS TEKNISKA HOEGSKOLA AB	3
AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS	3
COMMISSARIAT A L ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES	3
KING'S COLLEGE LONDON	3
ROLLS ROYCE PLC	3
UNIVERSITA DEGLI STUDI DI GENOVA	3
SNECMA SA	3
UNIVERSITA DEGLI STUDI DI PERUGIA	3
UNION DES INDUSTRIES FERROVIAIRES EUROPEENNES - UNIFE	3

Table 36 The main coordinators of regional participants

Annex 3 – CIP ICT participation scoreboard

I. ITE1 in CIP ICT PSP	ITE1	IT	CIP ICT PSP	% of ITE1 in IT	% of IT in CIP ICT
Nbr of participations in projects	18	241	2141	7,5%	11,3%
Nbr of coordinations	2	26	128	7,7%	20,3%
EC contribution	2 728 045	38 517 124	304 167 499	7,1%	12,7%

II. Participant Typology/organisation type	ITE1				IT				CIP ICT PSP			
	Nbr of participations in projects	Nbr of coordinations	EC contribution	%	Nbr of participations in projects	Nbr of coordinations	EC contribution	%	Nbr of participations in projects	Nbr of coordinations	EC contribution	%
HES	4	1	918221	33,7%	28	3	4 585 316	11,9%	345	14	48 931 144	16,1%
OTH				0,0%	17	3	2 456 095	6,4%	230	14	33 768 401	11,1%
PRC	8		819755	30,0%	110	11	16 909 193	43,9%	835	78	116 503 789	38,3%
PUB	5	1	931349	34,1%	50	5	8 863 799	23,0%	425	26	67 392 659	22,2%
REC	1		58720	2,2%	36	4	5 702 721	14,8%	306	22	37 571 506	12,4%
Total	18	2	2728045	100%	241	26	38517124	100%	2141	154	30416749	100%

																9	

III. Participant Typology/Public-Private organisations	ITE1			IT			CIP ICT PSP		
	Nbr of participations in projects	EC contribution	%	Nbr of participations in projects	EC contribution	%	Nbr of participations in projects	EC contribution	%
Private commercial (PRC)	8	819 755	30,0%	110	16 909 193	43,9%	842	117 814 939	38,7%
Private non Profit (PNP)	1	58 720	2,2%	35	5 080 884	13,2%	442	56 873 668	18,7%
Total Private organisations	9	878475	32,2%	145	21 990 077	57,1%	1 284	174 688 607	57,4%
Public Commercial (PUC)			0,0%	10	1 585 304	4,1%	120	15 166 682	5,0%
Governmental (GOV)	9	1 849 570	67,8%	86	14 941 743	38,8%	737	114 312 210	37,6%
Total Public organisations	9	1849570	67,8%	96	16 527 047	42,9%	857	129 478 892	42,6%
Total	18	2728045	100,0%	241	38 517 124	100,0%	2 141	304 167 499	100,0%

IV SME/ legal type									
	ITE1			IT			CIP ICT PSP		
Private commercial (PRC)	6	803 755	100,0%	44	5 992 575	94,9%	344	49 185 099	76,9%
Private non Profit (PNP)			0,0%	4	324 312	5,1%	59	14 769 538	23,1%

Total	6	803 755	100,0%	48	6 316 887	100,0%	403	63 954 637	100,0%

- ## Annex 4 – CIP IEE participation scoreboard

I. ITE1 in CIP IEE	ITE1	IT	CIP IEE	% of ITE1 in IT	% of IT in CIP IEE
Nbr of participations in projects	7	245	2443	2,9%	10,0%
Nbr of coordinations	0	34	235	0,0%	14,5%
EC contribution	623 659	23 629 670	241 453 630	2,6%	9,8%

Annex 5 – ERDF participation scoreboard

I general information		ERDF allocated	ERDF comitted
Total in euros :		0,00 €	232 193 199,00 €
Innovation and research axis only (n°1) :		0,00 €	70 449 294,41 €
Total projects co-funded :			?
Innovation and research axis only (n°1) :			?

II Distribution of ErDF fundings within areas related		-		

to research and innovation				
Themes	**FOI codes**	**Measures**	**EC contrib.**	**EC contrib.**
RTDI and linked activities	1	R&TD activities in research centres :		0,00 €
	2	R&TD infrastructure and centres of competence in a specific technology :		8 579 297,20 €
	5	Advanced support services for firms and groups of firms		4 134 987,51 €
	7	Investment in firms directly linked to research and innovation (...) :		23 510 703,09 €
	74	Developing human potential in the field of research and innovation, in particular through post-graduate studies (…) :		0,00 €
Innovation support for SMEs	3	Technology transfer and improvement of cooperation networks (…) :		5 413 760,22 €
	4	Assistance to R&TD, particularly in SMEs (including access to R&TD services in research centres) :		30 064 385,84 €
	6	Assistance to SMEs for the promotion of environmentally-friendly products and production processes (...) :		0,00 €
	9	Other measures to stimulate research and innovation and entrepreneurship in SMEs :		15 543 809,92 €
	14	Services and applications for SMEs (e-commerce, education and training, networking, etc.) :		0,00 €
	15	Other measures for improving access to and efficient use of ICT by SMEs :		0,00 €
ICT and related services	11	Information and communication technologies (...) :		2 385 360,86 €
	12	Information and communication technologies (TEN-ICT) :		0,00 €
	13	Services and applications for citizens (e-health, e-government, e-learning, e-inclusion, etc.) :		0,00 €
Other	8	Other investment in firms :		0,00 €

IV Impact and output (innovation and research only) :				
Unit	Type of indicators		Amount foreseen	Amount realised
Number	Output	1 - Jobs created	3418	544

Number	Output	12 - Number of additional population covered by broadband access	400000	280000
Number	Output	13 - Number of transport projects	3	0
Number	Output	17 - km of new railroads	8.8	0
Number	Output	19 - km of reconstructed railroads	13	0
Number	Output	22 - Additional population served with improved urban transport	1235942	1004032
Number	Output	23 - Number of renewable energy projects	310	43
-	Impact	24 - Additional capacity of renewable energy production	113	0
-	Impact	29 - Area rehabilitated (km2)	0.05	0
Number	Impact	3 - Jobs created for women	1078	251
-	Impact	30 - Reduction greenhouse emissions (CO2 and equivalents, kt)	220.84	50.22
Number	Impact	31 - Number of risk prevention projects	32	63
%	Impact	39 - Number of projects ensuring sustainability and improving the attractiveness of towns and cities	18	11
Number	Impact	4 - Number of RTD projects	90	462
N/A	Impact	5 - Number of cooperation project enterprises-research institutions	100	58
Number	Impact	7 - Number of direct investment aid projects to SME	2900	1310
Number	Impact	9 - Jobs created (gross, full time equivalent)	1138	498

Annex 6 –Cross Thematic Table

FP 7 - COOPERATION Theme	EC contribution	COUNTRY	EU	EMPLOYMENT sector	% reg. Emp	Empl. Var. 2004-2009	spec. EU	spec. country	PATENT DOMAIN	n	lib_fields	n° patents	field weight*	country weight**	spec. ***
HEALTH	32.014.647	23%	2,37	1,52	Pharma	1,3%	739	1,57	1,29	CHEM	16	Pharma	15,83	3,03%	4,73%	0,95

					Subsector	%				Cat.	#	Name				
					Med. devices	0,6%	499	1,06	0,67	Instr.	13	Med. Tech	30,28	5,80%	5,28%	1,06
FOOD	4.969.710	4%	1,12	0,73	Biotech	0,1%	311	0,86	3,17	CHEM	15	Biotech				
					Processed food	4,4%	-339	0,79	0,74	CHEM	18	Food chem.	4,50	0,86%	3,79%	0,76
					FARMING	0,0%	5		1,88							
					Agri PRODUCTS	0,7%	1498	0,47	1,13							
ICT	50.068.297	36%	1,59	1,32	IT	1,6%	2119	0,77	0,66	Elet.Eng	6	Computer tech.	21,17	4,06%	3,96%	0,80
										Elet.Eng	7	IT	1,25	0,24%	2,14%	0,43
					Telecom	1,7%	-2857	0,65	0,73	Elet.Eng	3	Telecomm.	21,83	4,18%	4,14%	0,83
										Elet.Eng	4	Digital com.	19,00	3,64%	4,82%	0,97
										Elet.Eng	5	Basic com.	1,67	0,32%	1,00%	0,20
NANO	14.557.401	10%	1,42	1,18	Metal man.	4,8%	-550	1,02	0,62	CHEM	20	Materials .	6,02	1,15%	4,84%	0,97
					Plastics	1,1%	-763	1,00	0,73							
					Construction M.	1,3%	-246	2,53	0,99							
					Lighting & e.e	0,5%	-387	0,96	0,89	Elet.Eng	1	Elec. machinery	18,41	3,53%	3,44%	0,69
										Elet.Eng	2	Audio-visual	4,00	0,77%	3,75%	0,76
										Elet.Eng	8	Semiconductors	3,25	0,62%	1,64%	0,33
					Chemical PR.	2,3%	132	2,30	1,85	CHEM	17	Macromolecular	9,21	1,76%	6,73%	1,35
										CHEM	14	Organic chem.	5,97	1,14%	4,64%	0,93
										CHEM	19	Basic materials	5,95	1,14%	4,57%	0,92
										CHEM	21	Surface tech.	8,81	1,69%	7,30%	1,47
										CHEM	22	nano-technology	0,64	0,12%	6,78%	1,37
										CHEM	23	Chemical eng.	11,27	2,16%	5,09%	1,02
ENERGY	8.523.328	6%	1,71	1,25	Oil and gas	0,2%	-67	0,50	0,69							

					Power g & t	0,2%	-112	0,52	0,52							
Environment	6.824.751	5%	1,40	0,84						CHEM	24	Envir. Tech.	3,08	0,59%	2,68%	0,54
Transport	9.821.290	7%	0,94	0,85	Transp &logistics	7,7%	4477	1,17	0,95	Mech.Eng	32	Transport	13,78	2,64%	2,00%	0,40
					Automotive	1,3%	-782	0,46	0,47							
					Distribution	4,3%	1545	1,56	1,15							
SOCIO	3.753.121	3%	2,33	1,69	Financial services	6,1%	1428	0,84	1,00							
					EDU	0,4%	-827	0,12	0,71							
					Business services	6,4%	-5646	0,81	0,78							
Security	3.534.305	3%	1,10	0,86												
Space	5.091.532	4%	2,06	1,57	Aerospace	0,0%	35	0,05	0,06							
					FIXTURES	3,7%	67	1,39	1,06							
					Construction	10,7%	7104	1,16	0,80	Other	35	Civil eng.	15,33	2,94%	3,18%	0,64
					Prod. TECH	1,4%	-81	0,66	0,45							
					Entertainment	1,6%	5366	1,13	1,10							
					Heavy Machinery	0,8%	82	0,82	0,58	Mech.Eng	25	Handling	40,43	7,74%	7,25%	1,46
										Mech.Eng	26	Machine	15,10	2,89%	4,97%	1,00
										Mech.Eng	27	Engines, ..	133,12	25,50%	27,55%	5,55
										Mech.Eng	29	Other machines	13,64	2,61%	3,06%	0,62
										Mech.Eng	31	Mech. elements	8,90	1,70%	1,68%	0,34
					Maritime	0,5%	142	0,78	0,92	Mech.Eng	30	Thermal	3,67	0,70%	1,55%	0,31
					Instruments	0,3%	-284	0,64	0,88	Instr.	9	Optics	11,92	2,28%	5,32%	1,07
										Instr.	10	Measurement	26,69	5,11%	6,93%	1,40
										Instr.	11	bio. Analysis	0,75	0,14%	2,63%	0,53

						Instr.	12	Control	8,03	1,54%	3,48%	0,70
Sporting, recreational and children's goods	0,9%	280	3,55	2,32								
Textiles	4,6%	-4138	3,57	1,94		Mech.Eng	28	Textile	18,95	3,63%	8,33%	1,68
Media and publishing	2,4%	1451	0,93	0,82								
Tourism and hospitality	5,6%	3005		1,28								
Paper products	3,4%	507	1,96	1,48								
Furniture	2,1%	184	1,68	1,06		Other	33	Furniture	8,83	1,69%	1,87%	0,38
Apparel	6,0%	-3260	3,22	1,75								
Jewellery and precious metals	2,1%	-1565	10,82	3,91								
Tobacco	0,0%	-110		2,84								
Leather products	3,3%	254	19,00	6,37								
Footwear	3,1%	-3012	6,57	2,61								
Stone quarries	0,3%	-388	2,54	2,27								
						Other	34	Other	10,72	2,05%	1,81%	0,36

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