Technology Transfer Activities of Universities and Research Institutes - Open Innovation Model - Case of Navarre

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INDEX

Page

I. OBJECTIVES OF THE SURVEY. 3

II. METHODOLOGY. 5
- II.1. TECHNICAL SHEET. 6
- II.2. QUESTIONNAIRE. 7

III. RESULTS. 16
- III.1. PROFILE OF INTERVIEWED COMPANIES 17
- III.2. COMPANY'S COMMITMENT TO R&D. 21
- III.3. USE OF EXTERNAL RESOURCES TO SUPPORT INNOVATION. 26
- III.4. HAVE YOU EVER PAID FOR EXTERNAL R&D RESOURCES OR CAPABILITIES? 33
- III.5. INTENSITY OF R&D COLLABORATION WITH OTHER BODIES. 41
- III.6. OBTAINING INFORMATION FOR THE COMPANY. 44
- III.7. R&D COLLABORATION AND COOPERATION NETWORKS WITH TECHNOLOGY TRANSFER OFFICES (TTOs). 64

IV. CONCLUSIONS. 78

I. OBJECTIVES OF THE SURVEY.

I. OBJECTIVES OF THE SURVEY.

The company survey falls within the scope of the EURIS-ORP subproject, co-financed by the European Union's Regional Development Fund (ERDF) through the INTERREG IV c programme.

The objective of the survey is to ascertain to what extent the technology transfer activities of universities and research institutes conform to the open innovation model.

Additionally, the survey seeks to appraise what role higher education and research institutions play in the regional innovation system.

To this end, 73 telephone interviews have been conducted with heads of R&D departments of companies with previous collaboration ties with *Universidad Pública de Navarra* (UPNA) or having received aid for R&D projects from public administrations.

II. METHODOLOGY.

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II.1. TECHNICAL SHEET.

UNIVERSE:	Companies based in Navarre having collaborated with UPNA or having received aid for R&D programmes
SAMPLE:	73 telephone interviews with R&D managers in Navarre-based companies
CONFIDENCE LEVEL:	95%.
MAXIMUM ERROR ALLOWANCE:	10.6%.
INTERVIEW TECHNIQUE:	Computer-assisted telephone interview (CATI System).
SAMPLE SELECTION:	Random selection from the directory of companies having received R&D aid with a minimum sample of companies having had ties with UPNA.
FIELDWORK DATES:	1 through 9 February 2012.
BODY CONDUCTING SURVEY:	CIES, S.L.

II.2. QUESTIONNAIRE.

Survey for subproject Open Research Platform Components 4 and 5 For COMPANIES

The questionnaire is carried out within the framework of the EURIS-ORP subproject. The project is supported by the European Union INTERREG IVC Program.
The objective of the research is to explore:

- *To what extent knowledge transfer activities at higher education institutions and research organizations serve the open innovation model?*
- *What is the role of higher education institutions in the technology transfer system of the region?*

We keep your information confidential; the survey data will be used only in aggregate form.
Please contribute to our research to fill in questionnaire.

1. What is your position in your company?

1/A.	**Owner/Proprietor**	☐
1/B.	**Managing Director/Board Member**	☐
1/C.	**Head of strategy development/organization**	☐
1/D.	**Head of R&D**	☐
1/E.	**Other senior member of R&D**	☐
1/F.	**Other: .....**	☐

2. Location of your company (settlement):

3. Number of full time employees in your company

3/A.	**Under 5 person**	☐
3/B.	**5-10 person**	☐
3/C.	**11-50 person**	☐
3/D.	**51-250 person**	☐
3/E.	**Over 250 person**	☐

4. Sector classification of your company (main activity)

4/A.	**Agriculture**	☐
4/B.	**Aerospace engineering**	☐
4/C.	**Automotive engineering**	☐
4/D.	**Construction/Civil engineering**	☐
4/E.	**Electrical engineering/IT**	☐
4/F.	**(Bio)Chemical**	☐
4/G.	**Trade**	☐
4/H.	**Mechanical engineering/Mechatronics**	☐
4/I.	**Transportation/Logistics**	☐
4/J.	**Tourism**	☐
4/K.	**Finance, insurance, real estate**	☐
4/L.	**Professional, scientific and technical activities**	☐
4/M.	**Administrative and support service activities**	☐
4/N.	**Other: .....**	☐

5. Is your company part of an international enterprise group or a parent enterprise outside your country?

5/A.	**Yes**	☐
5/B.	**No**	☐

6. Does your company operate subsidiaries or production plants in different locations in the region?

6/A.	**Yes**	☐
6/B.	**No**	☐

7. Share of R&D expenditures, percentage of income, annual average rate 2008-2010:

7/A.	**None**	☐
7/B.	**Under 5%**	☐
7/C.	**5-10%**	☐
7/D.	**Over 10%**	☐

8. Share of R&D employees, annual average rate 2008-2010:

8/A.	**None**	☐
8/B.	**Under 5%**	☐
8/C.	**5-10%**	☐
8/D.	**Over 10%**	☐

9. Factors supporting the R&D activities of the company. Please, select the three most important sources!

9/A.	**Well-trained employees**	☐
9/B.	**University students**	☐
9/C.	**Other companies / competitors or business partners**	☐
9/D.	**R&D institutions**	☐
9/E.	**Conferences, expert forums**	☐
9/F.	**Scientific publications**	☐
9/G.	**Internet databases and innovation portals**	☐
9/H.	**Other factors, such as.....**	☐

10. Which external resources does your company use to support innovation and technology transfer processes?

			Please give us an example
10/A.	**Online database**	☐	
10/B.	**Business support organizations in the region**	☐	
10/C.	**Organizations of enterprise promotion in the region**	☐	
10/D.	**Industrial portals for technology transfer – e.g. clusters**	☐	
10/E.	**Other, such as.....**	☐	
10/F.	**We don't use external IT tools***	☐	

***If no, please go to question 12**

11. What is the scope of information sought by the company?

11/A.	**Title/name of intellectual property /patent/ trademark/**	☐
11/B.	**Short description of the protected property**	☐
11/C.	**Full description of the protected property**	☐
11/D.	**Contact data**	☐
11/E.	**Information on intermediate cost related to sell of intellectual property (e.g. additional documentation, expertise, other support services during implementation)**	☐
11/F.	**Other, such as.....**	☐

Please go to question 13

12. What are the reasons for not using external resources? (Multiple answers can be marked)

12/A.	**We don't know such solutions**	☐
12/B.	**There is no internal need**	☐
12/C.	**They provide incomplete and low quality information**	☐
12/D.	**High cost (subscription, one-time fee)**	☐
12/E.	**Complicated registration procedures**	☐
12/F.	**Difficulties in using existing portals/databases**	☐
12/G.	**Language difficulties (information must be sought in a foreign language)**	☐
12/H.	**Other, such as .....**	☐

13. Have you ever paid for any external intellectual resource for internal R&D activity?

13/A.	**Yes**	☐
13/B.	**No***	☐

***If no, please go to question 16**

14. If yes, which were these?

14/A.	**New business ideas, research results for R&D activities**	☐
14/B.	**Involvement of customers/suppliers in service and product development (e.g. living labs)**	☐
14/C.	**External experts and researchers (e.g. university professors)**	☐
14/D.	**Staff training**	☐
14/E.	**Collaboration with other companies (e.g. clusters)**	☐
14/F.	**Purchase R&D equipment, labs**	☐
14/G.	**Other, such as.....**	☐

15. What are the advantages of these resources for your company? (Maximum five answers can be marked)

15/A.	**Development wider vision beyond the core business**	☐
15/B.	**Long-term cooperation with stakeholders**	☐
15/C.	**Potential customers, new markets could be won**	☐
15/D.	**Opportunity to involve not existing resources**	☐
15/E.	**New technologies, products, services were lunched**	☐
15/F.	**New ideas for business process optimization**	☐
15/G.	**Decreased time and cost of R&D**	☐
15/H.	**Increased market acceptance of our products**	☐
15/I.	**Better identify the consumers' needs**	☐
15/J.	**Development of new collaborations with other companies**	☐
15/K.	**Other, such as.....**	☐

16. If no, what are the reasons for not using external intellectual resources?

16/A.	**Lack of information**	☐
16/B.	**Lack of trust in external actors**	☐
16/C.	**Legal problems (e.g. unclarified intellectual property rights, lack of contract)**	☐
16/D.	**Lack of control**	☐
16/E.	**Lack of time**	☐
16/F.	**Lack of money**	☐
16/G.	**Other, such as .....**	☐

17. Please, evaluate the intensity of collaboration with co-operative partners of your company in the field of R&D?

	Collaboration partners	1 (very weak)	2 (weak)	3 (strong)	4 (very strong)	We haven't got contact
17/A.	Suppliers, subcontractors	☐	☐	☐	☐	☐
17/B.	Clients or customers	☐	☐	☐	☐	☐
17/C.	Competitors	☐	☐	☐	☐	☐
17/D.	Universities and other higher education institutions	☐	☐	☐	☐	☐
17/E.	Public R&D institutes	☐	☐	☐	☐	☐
17/F.	Business support organizations, organizations of enterprise promotion	☐	☐	☐	☐	☐
17/G.	Local governments, municipalities	☐	☐	☐	☐	☐
17/H.	Central government departments, agencies	☐	☐	☐	☐	☐

18. From where does your company get information on the following topics?

		Technology trends	New products, services	Universities, and their R&D activities in the region
18/A.	Print media, trade journals	☐	☐	☐
18/B.	Internet	☐	☐	☐
18/C.	Technology platform	☐	☐	☐
18/D.	University knowledge map	☐	☐	☐
18/E.	Newsletter, brochure	☐	☐	☐
18/F.	Research reports	☐	☐	☐
18/G.	Annual reports	☐	☐	☐
18/H.	Presence on events and trade fairs	☐	☐	☐
18/I.	Consulting organizations	☐	☐	☐
18/J.	Innovation exhibition, competition	☐	☐	☐
18/K.	Business partners	☐	☐	☐
18/L.	Concurrence	☐	☐	☐

19. How often does your company get information on the activities of universities and other higher education institutions in the region?

19/A.	No information available	☐
19/B.	Weekly	☐
19/C.	Monthly	☐
19/D.	Every six months	☐
19/E.	Annually	☐

20. Please, evaluate the usefulness of information that your company gets from the region's universities and other higher education institutions?

		Level of satisfaction				We haven't got information
		1 Not satisfied	2	3	4 Completely satisfied	
20/A.	About university research	☐	☐	☐	☐	☐
20/B.	About professional competence of university researchers	☐	☐	☐	☐	☐
20/C.	About R&D equipments and labs	☐	☐	☐	☐	☐
20/D.	About R&D services provided by universities	☐	☐	☐	☐	☐
20/E.	About R&D results achieved in universities	☐	☐	☐	☐	☐
20/F.	About planned R&D activities	☐	☐	☐	☐	☐
20/G.	About contact person in charge	☐	☐	☐	☐	☐
20/H.	About activities of universities' technology transfer offices (TTOs)	☐	☐	☐	☐	☐

21. What are the results of information provided by the universities and other higher education institutions in your region?

21/A.	New partners	☐
21/B.	Consulting services of academic professors	☐
21/C.	Using of academic R&D equipment and labs	☐
21/D.	Participation in training courses organized by the university	☐
21/E.	Donating R&D equipment for the university	☐
21/F.	Participation in university education activities (as a lecturer, providing equipment, prentice possibilities)	☐
21/G.	New collaboration through technology transfer offices (TTOs)	☐
21/H.	Other, such as.....	☐
21/I.	No result	☐

22. In what form would you like to have R&D activities/services? Please, select the three most important sources!

22/A.	**Homepage**	☐
22/B.	**University knowledge map**	☐
22/C.	**Newsletters via e-mail**	☐
22/D.	**Brochures**	☐
22/E.	**Research reports**	☐
22/F.	**Annual reports of the universities**	☐
22/G.	**Events and exhibitions**	☐
22/H.	**Innovation exhibitions, competitions**	☐
22/I.	**Technology transfer offices (TTOs)**	☐

23. Which R&D collaboration network has your company joined?

23/A.	**Cluster**	☐
23/B.	**Technology Platform**	☐
23/C.	**Advanced Technologies Centre**	☐
23/D.	**Strategic cooperation in the field of R&D commercialization**	☐
23/E.	**Establishment of joint research groups, task forces**	☐
23/F.	**Sectoral consortium**	☐
23/G.	**Other, such as .....**	☐
23/H.	**We are not member**	☐

24. Does your company cooperate with any Technology Transfer Offices (TTOs) in the region?

24/A.	**Yes**	☐
24/B.	**No**	☐

If yes, please name them:

24/A.1.	
24/A.2.	
24/A.3.	

25. Please, evaluate your company's collaboration with technology transfer offices!

		Quality of collaboration				
	Fields of collaboration	**1 (Very weak)**	**2 (Weak)**	**3 (Strong)**	**4 (Very strong)**	**No collabo-ration**
25/A.	**R&D collaboration**	☐	☐	☐	☐	☐
25/B.	**Patenting**	☐	☐	☐	☐	☐
25/C.	**Licensing**	☐	☐	☐	☐	☐
25/D.	**R&D information services**	☐	☐	☐	☐	☐
25/E.	**Capital investments**	☐	☐	☐	☐	☐
25/F.	**Sponsoring**	☐	☐	☐	☐	☐
25/G.	**Participation in events organized by technology transfer offices (TTOs)**	☐	☐	☐	☐	☐
25/H.	**Solving of business prob-lems**	☐	☐	☐	☐	☐
25/I.	**Searching for tenders, joint tendering**	☐	☐	☐	☐	☐
25/J.	**Tender management**	☐	☐	☐	☐	☐

Name of company: _____

Telephone: _____

E-mail: _____

Contact person: _____

Thank you for your collaboration!

III. RESULTS.

III. RESULTS.

III.1. PROFILE OF INTERVIEWED COMPANIES

Table 1. Profile of interviewed companies.

	Frequencies	Percentage
TOTAL	**73**	**100**
POSITION IN THE COMPANY		
R&D DEPARTMENT	26	36
OWNER	12	16
MANAGING DIRECTOR	16	22
STRATEGIC DEVELOPMENT	4	5
PRODUCTION MANAGER	5	7
QUALITY DEPARTMENT	3	4
OTHER	7	10
NO. OF EMPLOYEES		
< 10	22	30
11-50	18	25
51-250	24	33
> 250	9	12
SECTORS		
METAL & MACHINERY	13	18
AGRIFOODSTUFFS	11	15
ELECTRIC & ELECTRONICS	9	12
AUTOMOTIVE	6	8
CHEMISTRY	5	7
OTHER INDUSTRIES	12	17
PROFESSIONAL ACTIVITIES	17	23
COMPANY WITHIN INTERNATIONAL GROUP		
YES	13	18
NO	60	82
SEVERAL PLANTS IN REGION		
YES	20	27
NO	53	73

Table 2. Profile of interviewed companies. By number of employees.

Chi-squared vertical %		NO. OF EMPLOYEES			
	TOTAL	< 10	11-50	51-250	> 250
TOTAL	**73**	**22**	**18**	**24**	**9**
	%	%	%	%	%
SECTORS					
METAL & MACHINERY	18	18	22	17	11
AGRIFOODSTUFFS	15	14	28	13	0
ELECTRIC & ELECTRONICS	12	5	17	13	22
AUTOMOTIVE	8	9	6	4	22
CHEMISTRY	7	0	0	17	11
OTHER INDUSTRIES	16	9	17	21	22
PROFESSIONAL ACTIVITIES	23	**>45**	11	17	11
COMPANY WITHIN INTERNATIONAL GROUP					
YES	18	5	11	21	**>56**
NO	82	95	89	79	44
SEVERAL PLANTS IN REGION					
YES	27	**<0**	22	**>46**	**>56**
NO	73	100	78	54	44

Table 3. Profile of interviewed companies. By sector of activity.

Chi-squared vertical %		SECTORS						
	TOTAL	Metal & Machinery	Agrifood foodstuffs	Electric & Electronics	Automotive	Chemical	Other industries	Professional services
TOTAL	**73**	**13**	**11**	**9**	**6**	**5**	**12**	**17**
	%	%	%	%	%	%	%	%
NO. OF EMPLOYEES								
< 10	30	31	27	11	33	0	17	**>59**
11-50	25	31	45	33	17	0	25	12
51-250	33	31	27	33	17	80	42	24
> 250	12	8	0	22	33	20	17	6
COMPANY WITHIN INTERNATIONAL GROUP								
YES	18	15	0	11	**>67**	20	25	12
NO	82	85	100	89	33	80	75	88
SEVERAL PLANTS IN REGION								
YES	27	8	45	22	33	20	50	18
NO	73	92	55	78	67	80	50	82

CONCLUSIONS TO CHAPTER III.1.

- The survey conducted in Spain under the EURIS-ORP Subproject consisted of 73 telephone interviews to officials from companies with previous collaboration ties with UPNA or having received aid for R&D programmes from public administrations.

- Surveys were conducted with heads of R&D departments (36%), managing directors or owners of the company (38%) or other senior members (26%), whether in charge of strategic development, production, quality or administration.

- The profile of interviewed companies accounts to a large extent for most part of the business fabric of Navarre: 33% of interviewed companies have between 51 and 250 employees, 25% has between 11 and 50 and 30% has less than 10. Companies with over 250 employees represent 12% of the sample.

- By sectors, industrial activities account for 77% of interviewed companies, mainly metal & machinery, agrifoodstuffs, electric & electronics, automotive and chemistry, whereas the remaining 23% belongs to the services sector (consultancy and engineering).

- Companies with less than 10 employees belong to a larger extent to the services sector.

- Of all interviewed companies, 18% belong to an international group of companies and 27% has several plants in the region.

- Obviously, it is larger companies who belong to international groups and those with over 50 employees have several plants.

- By sectors, companies in the automotive sector belong to a larger extent to an international group.

III.2. COMPANY'S COMMITMENT TO R&D.

Chart 1. Company's commitment to R&D. (Figures in %).

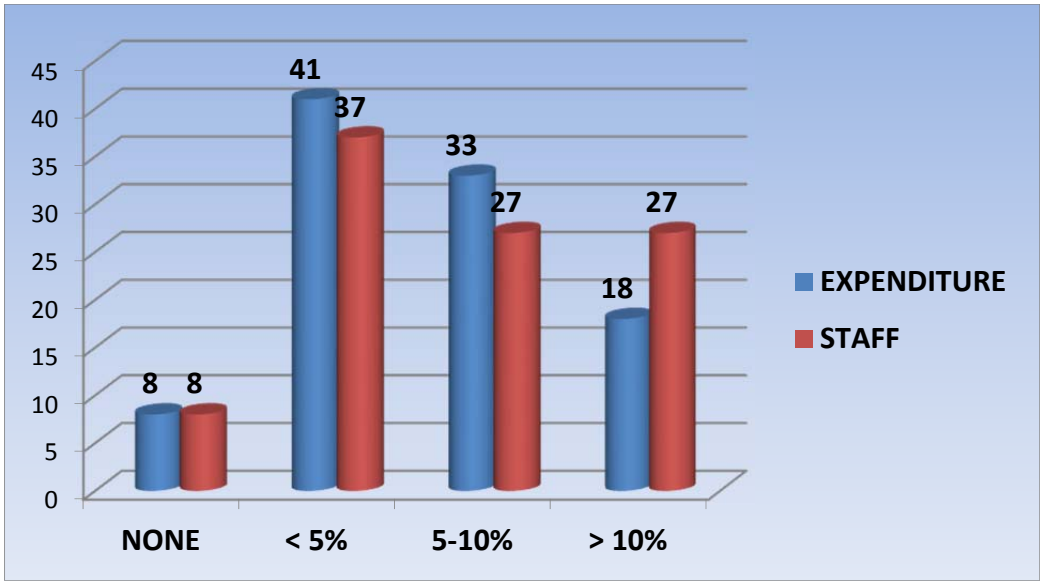


Table 4. Company's commitment to R&D. By company size.

Chi-squared vertical %		NO. OF EMPLOYEES			
	TOTAL	< 10	11-50	51-250	> 250
TOTAL	**73**	**22**	**18**	**24**	**9**
	%	%	%	%	%
R&D EXPENDITURE AS % OF INCOME					
NONE	8	18	6	4	0
BELOW 5%	41	32	39	29	>100
5-10%	33	27	33	50	0
ABOVE 10%	18	>23	22	17	0
R&D STAFF					
NONE	8	18	6	4	0
BELOW 5%	37	36	44	25	56
5-10%	27	14	22	>38	>44
ABOVE 10%	27	>32	28	33	<0

Table 5. Company's commitment to R&D. By sector of activity.

Chi-squared vertical %		SECTORS						
	TO-TAL	Metal & Machin-ery	Agrifood-stuffs	Electric & Elec-tronics	Automo-tive	Chemi-cal	Other indus-tries	Profes-sional services
TOTAL	**73**	**13**	**11**	**9**	**6**	**5**	**12**	**17**
	%	%	%	%	%	%	%	%
R&D BUDGET								
NONE	8	0	9	11	0	0	8	18
BELOW 5%	41	38	55	44	67	20	42	29
5-10%	33	31	18	33	17	60	33	41
ABOVE 10%	18	31	18	11	17	20	17	12
R&D STAFF								
NONE	8	0	9	11	0	0	8	18
BELOW 5%	37	23	64	11	50	20	50	35
5-10%	27	31	18	22	33	60	25	24
ABOVE 10%	27	46	9	56	17	20	17	24

Chart 2. **Factors supporting the R&D activities of the company. (Figures in %). (Possible multiple answers). (Rated from most to least frequent answer).**

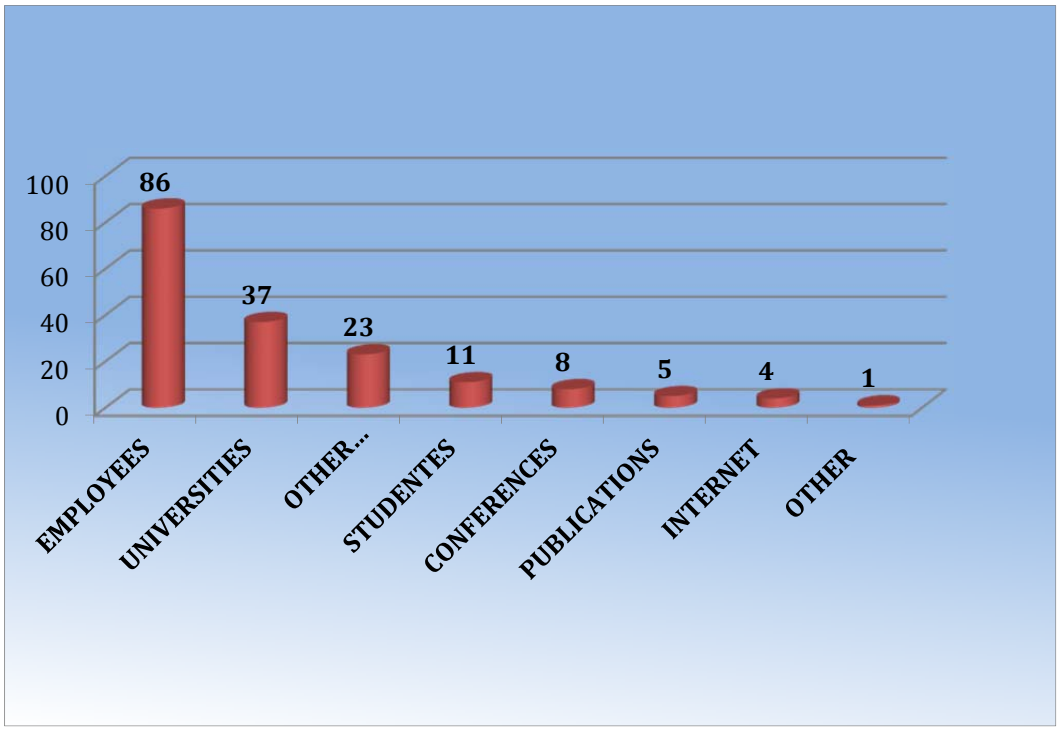


Table 6. **Factors supporting the R&D activities of the company. By number of employees. (Figures in %). (Possible multiple answers). (Rated from most to least frequent answer).**

Chi-squared vertical %		NO. OF EMPLOYEES			
	TOTAL	< 10	11-50	51-250	> 250
TOTAL	**73**	**22**	**18**	**24**	**9**
	%	%	%	%	%
FACTORS SUPPORTING R&D ACTIVITIES					
WELL-TRAINED EMPLOYEES	86	91	83	83	89
UNIVERSITIES OR R&D INSTITUTIONS	37	27	33	38	**>67**
OTHER COMPANIES	23	18	**>28**	25	22
UNIVERSITY STUDENTS	11	14	0	13	22
CONFERENCES & EXPERT FORUMS	8	0	0	17	22
SCIENTIFIC PUBLICATIONS	5	5	6	4	11
INTERNET DATABASES	4	5	6	0	11
OTHER	1	0	0	4	0

Table 7. Factors supporting the R&D activities of the company. By sector of activity.
(Figures in %). (Possible multiple answers). (Rated from most to least frequent answer).

Chi-squared vertical %		SECTORS						
	TOTAL	Metal & Machinery	Agrifood-stuffs	Electric & Electronics	Automotive	Chemical	Other industries	Professional services
TOTAL	**73**	**13**	**11**	**9**	**6**	**5**	**12**	**17**
	%	%	%	%	%	%	%	%
FACTORS SUPPORTING R&D ACTIVITIES								
WELL-TRAINED EMPLOYEES	86	92	82	89	83	80	83	88
UNIVERSITIES OR R&D INSTITUTIONS	37	46	18	33	33	60	42	35
OTHER COMPANIES	23	31	36	33	33	0	0	24
UNIVERSITY STUDENTS	11	0	0	11	33	20	17	12
CONFERENCES & EXPERT FORUMS	8	15	0	0	17	20	17	0
SCIENTIFIC PUBLICATIONS	5	0	0	11	0	20	8	6
INTERNET DATABASES	4	8	9	0	0	0	8	0
OTHER	1	0	0	0	0	20	0	0

CONCLUSIONS TO CHAPTER III.2.

- Interviewed companies allocate around 6% of the total budget of the company to R&D activities. 92% actually have an R&D budget allocation.

- 18% of companies with less than 10 employees make no investments in R&D, but the percentage of companies whose R&D budget is above 10% of the total budget is higher than that of large companies.

- In companies with 11-250 employees the R&D budget accounts for a larger share of the total budget than in those with more than 250 employees.

- As regards R&D staff, 27% of companies allocate more than 10% of staff resources, 27% allocates 5-10% and 37% of them allocate less than 5% of staff to R&D. The strain in R&D staff in companies with 51-250 employees is higher – 71% of them allocate more than 5% of human resources to R&D, the average value being 8% of employees.

- By sectors, those allocating more staff to R&D are metal & machinery and electric electronics, where approximately half of them allocate more than 10% of employees to R&D, while half of automotive companies allocate less than 5%.

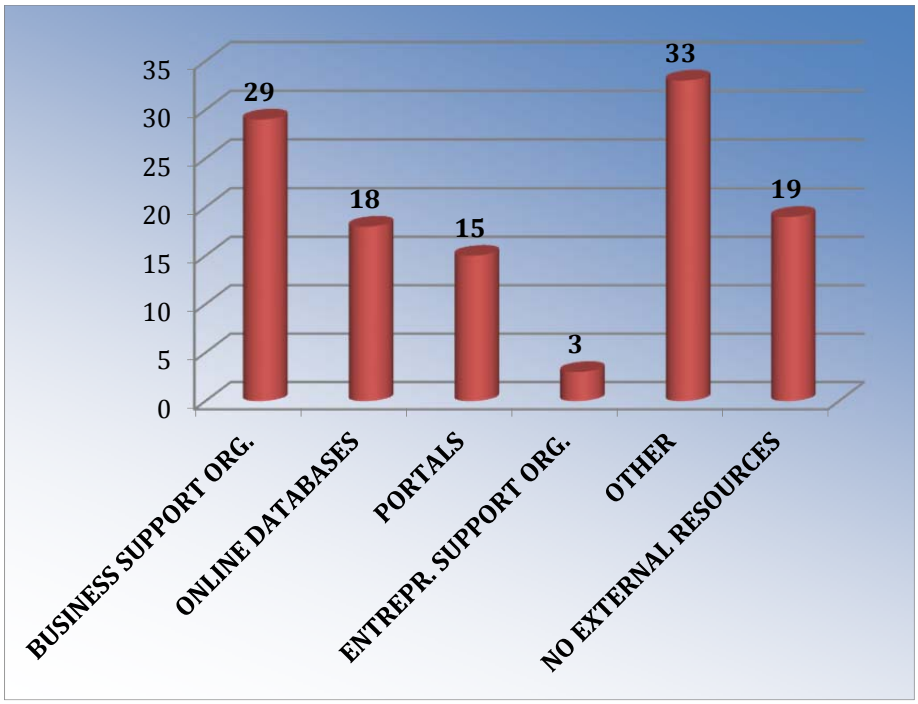
- R&D activities rely on well-trained employees (86%). Universities and R&D institutes rank second in terms of support to R&D (37%), while other companies rank third, with an average 23%. Further support activities involve university students (11%), conferences and expert forums (8%), publications (5%) and databases (4%).

- Although well-trained employees are the main support to R&D activities in all types of companies, companies with more than 250 employees use R&D institutes and universities to a larger extent than the rest (67%) and than other companies with 11-50 employees (28%).

- By sectors, metal & machinery, chemical and other industries make a wider use of R&D institutes and universities than the rest.

III.3. USE OF EXTERNAL RESOURCES TO SUPPORT INNOVATION.

Chart 3. External resources used by your company to support innovation processes. (Figures in %). (Possible multiple answers). Rated from most to least frequent answer).



(Supporting organizations: UPNA, 8; Business cluster, 4; CDTI, 2; CEIN, 2; CNTA, 2; AIN, ANET, CEMITEC, Ministry, 1). (Other: mostly advanced technological centres, engineering, international consultants or subcontracting other companies)[1]

[1] CDTI: National Institute for the Development of Industrial Technologies; CEIN: European Business Innovation Centre of Navarre; CNTA: National Centre for Technology and Food Safety; AIN: Industry Association of Navarre; ANET: Association of Road Transport & Logistics Companies of Navarre; CEMITEC: Multidisciplinary Innovation & Technology Institute of Navarre.

Table 8. External resources used by your company to support innovation processes. By number of employees. (Figures in %). (Possible multiple answers). (Rated from most to least frequent answer).

Chi-squared vertical %		NO. OF EMPLOYEES			
	TOTAL	< 10	11-50	51-250	> 250
TOTAL	**73**	**22**	**18**	**24**	**9**
	%	%	%	%	%
EXTERNAL RESOURCES USED BY COMPANY					
BUSINESS SUPPORT ORGANIZATIONS	29	27	28	29	33
ONLINE DATABASES	18	32	22	8	0
INDUSTRIAL PORTALS FOR TECHNOLOGY TRANSFER	15	18	6	13	33
ENTREPRENEURSHIP SUPPORT ORGANIZATIONS	3	5	0	4	0
OTHER	33	18	28	46	44
NO USE OF EXTERNAL RESOURCES	19	27	22	8	22

Table 9. External resources used by your company to support innovation processes. By sector of activity. (Figures in %). (Possible multiple answers). (Rated from most to least frequent answer).

Chi-squared vertical %		SECTORS						
	TOTAL	Metal & Machinery	Agrifood-stuffs	Electric & Electronics	Automotive	Chemical	Other industries	Professional services
TOTAL	**73**	**13**	**11**	**9**	**6**	**5**	**12**	**17**
	%	%	%	%	%	%	%	%
EXTERNAL RESOURCES								
BUSINESS SUPPORT ORGANIZATIONS	29	31	36	33	17	0	33	29
ONLINE DATABASES	18	31	0	11	17	0	17	29
INDUSTRIAL PORTALS FOR TECHNOLOGY TRANSFER	15	23	9	11	0	>60	8	12
ENTREPRENEURSHIP SUPPORT ORGANIZATIONS	3	0	0	0	0	0	8	6
OTHER	33	38	18	>67	33	>60	25	18
NO USE OF EXTERNAL RESOURCES	19	8	36	0	33	0	17	29

Chart 4. **Type of information sought by your company using external resources. (% of respondents using external resources: 59 companies). (Rated from most to least frequent answer). (Possible multiple answers).**

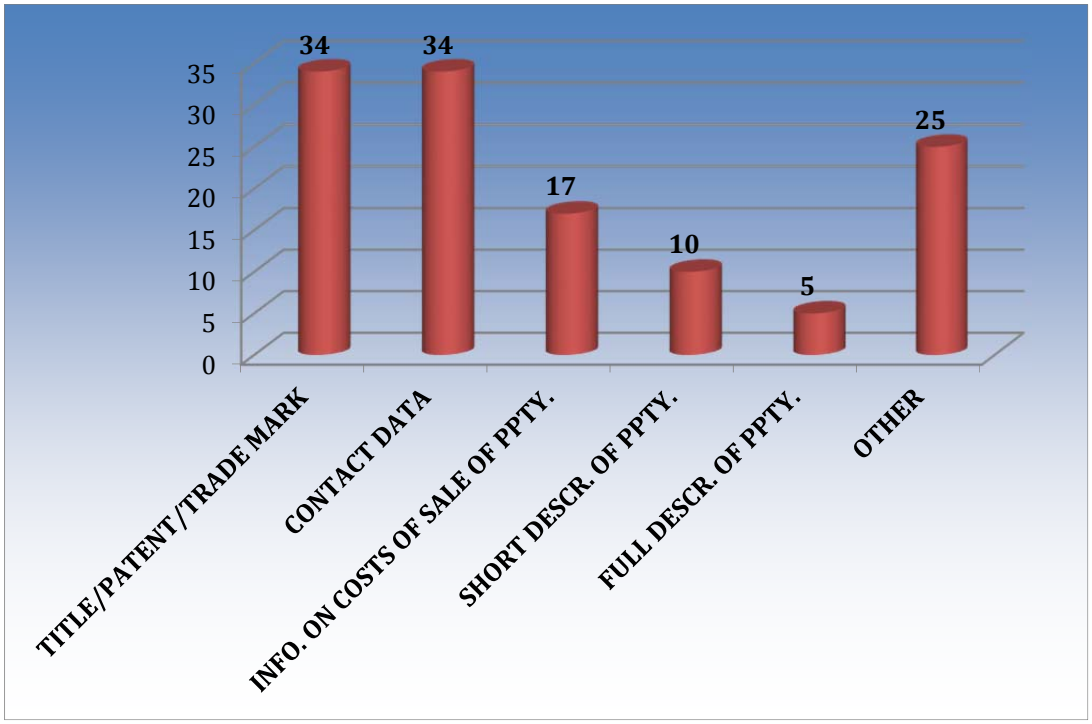


Table 10. **Type of information sought by your company using external resources. By number of employees. (% of respondents using external resources: 59 companies). (Rated from most to least frequent answer). (Possible multiple answers).**

Chi-squared vertical %		NO. OF EMPLOYEES			
	TOTAL	< 10	11-50	51-250	> 250
TOTAL	**59**	**16**	**14**	**22**	**7**
	%	%	%	%	%
TYPE OF INFORMATION SOUGHT USING EXTERNAL RESOURCES					
TITLE, PATENT OR TRADEMARK	34	19	36	41	43
CONTACT DATA	34	50	36	23	29
INFORMATION ON COSTS ASSOC'D TO SELLING INDUSTRIAL PPTY.	17	6	29	14	29
SHORT DESCRIPTION OF PROTECTED PROPERTY	10	13	7	14	0
FULL DESCRIPTION OF PROTECTED PROPERTY	5	6	0	0	>29
OTHER	25	31	14	32	14

Table 11. Type of information sought by your company using external resources. By sector of activity. (% of respondents using external resources: 59 companies). (Rated from most to least frequent answer). (Possible multiple answers).

Chi-squared vertical %		SECTORS						
	TOTAL	Metal & Machinery	Agrifood-stuffs	Electric & Electronics	Automotive	Chemical	Other industries	Professional services
TOTAL	**59**	**12**	**7**	**9**	**4**	**5**	**10**	**12**
	%	%	%	%	%	%	%	%
TYPE OF INFORMATION								
TITLE, PATENT OR TRADEMARK	34	50	29	44	50	20	40	8
CONTACT DATA	34	33	29	33	25	40	40	33
INFORMATION ON COSTS ASSOC'D TO SELLING IND. PPTY.	17	25	14	>44	25	0	10	0
SHORT DESCRIPTION OF PROTECTED PROPERTY	10	17	14	0	0	0	10	17
FULL DESCRIPTION OF PROTECTED PROPERTY	5	8	0	0	25	0	10	0
OTHER	25	17	29	11	25	40	20	42

Chart 5. **Why does your company not use external resources such as ICTs? (Applicable only to respondents not using such resources: 14 companies). (Rated from most to least frequent answer). (Possible multiple answers).**

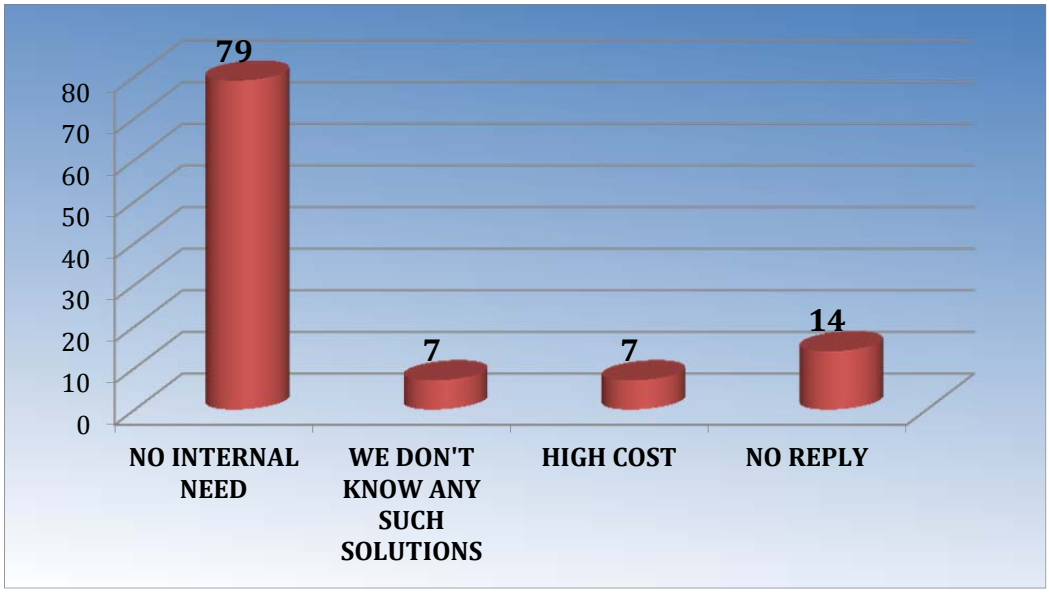


Table 12. **Why does your company not use external resources such as ICTs? By number of employees. (Applicable only to respondents not using such resources: 14 companies). (Rated from most to least frequent answer). (Possible multiple answers).**

Chi-squared vertical %		NO. OF EMPLOYEES			
	TOTAL	< 10	11-50	51-250	> 250
TOTAL	**14**	**6**	**4**	**2**	**2**
	%	%	%	%	%
REASONS FOR NOT USING ICT-TYPE RESOURCES					
THERE IS NO INTERNAL NEED	79	100	75	50	50
WE DON'T KNOW SUCH SOLUTIONS	7	0	0	0	>50
HIGH COST	7	0	25	0	0
NO REPLY	14	0	25	50	0

Table 13. Why does your company not use external resources such as ICTs? By sector of activity. (Applicable only to respondents not using such resources: 14 companies). (Rated from most to least frequent answer). (Possible multiple answers).

Chi-squared vertical %		SECTORS						
	TOTAL	Metal & Machinery	Agrifood-stuffs	Electric & Electronics	Automotive	Chemical	Other industries	Professional services
TOTAL	**14**	**1**	**4**	**0**	**2**	**0**	**2**	**5**
	%	%	%	%	%	%	%	%
REASONS FOR NOT USING ICT-TYPE RESOURCES								
THERE IS NO NEED	79	100	75	0	100	0	50	80
WE DON'T KNOW SUCH SOLUTIONS	7	0	0	0	0	0	0	20
HIGH COST	7	0	0	0	0	0	0	20
DOES NOT KNOW	14	0	25	0	0	0	50	0

CONCLUSIONS TO CHAPTER III.3.

- 19% of companies do not use external resources to support innovation processes, 29% rely on *supporting organizations* (mostly UPNA), 18% on *databases* and 15% *industrial portals*. In addition, 33% rely on other resources, mainly *advanced technological centres*.

- By company size, there are no differences as regards regional *support organizations*, while *databases* are more widely used in companies with lower number of employees. Finally, *advanced technological centres* are more widely used by large companies by large companies.

- By sectors, *industrial portals* are more widely used by chemical companies and *advanced technological centres* are more widely used by electric & electronics and chemical companies.

- The type of information sought through external resources is *title or name of industrial or intellectual property, patent or trademark*, at a rate equal to that of *contact data*. *Full descriptions of protected property* is the type of information more sought by companies with more than 250 employees, while *information on costs associated to sale of property* is more sought by companies in the electric & electronics sector.

- Companies who do not use external resources amount to 14 (19% of the total), being mostly small companies in the agrifoodstuffs or professional services sectors. The main reason for not using such external resources is that they do not need them.

III.4. HAVE YOU EVER PAID FOR EXTERNAL R&D RESOURCES OR CAPABILITIES?

Chart 6. Has your company ever paid for external R&D resources or capabilities? (Figures in %).

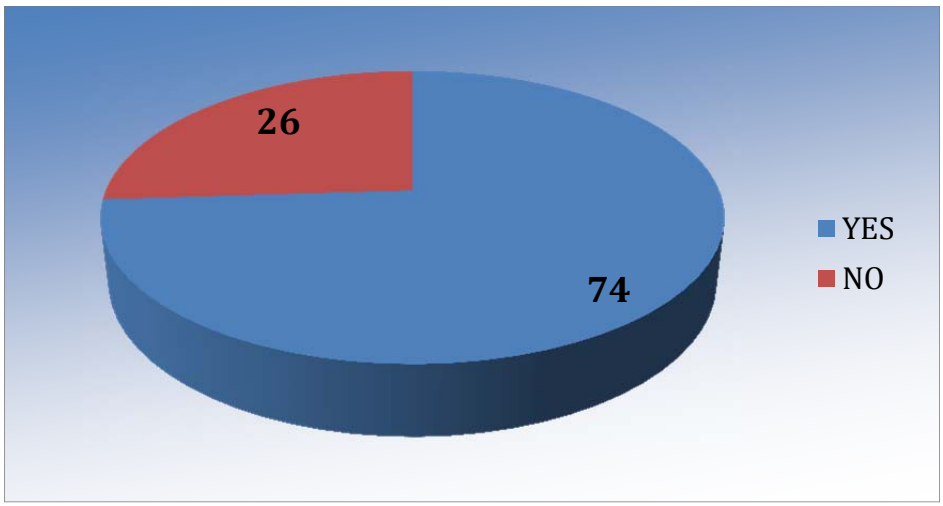


Chart 7. Which were such resources or capabilities? (Only respondents having paid for this type of resources: 54 companies). (Rated from most to least frequent answer). (Possible multiple answers). (Figures in %).

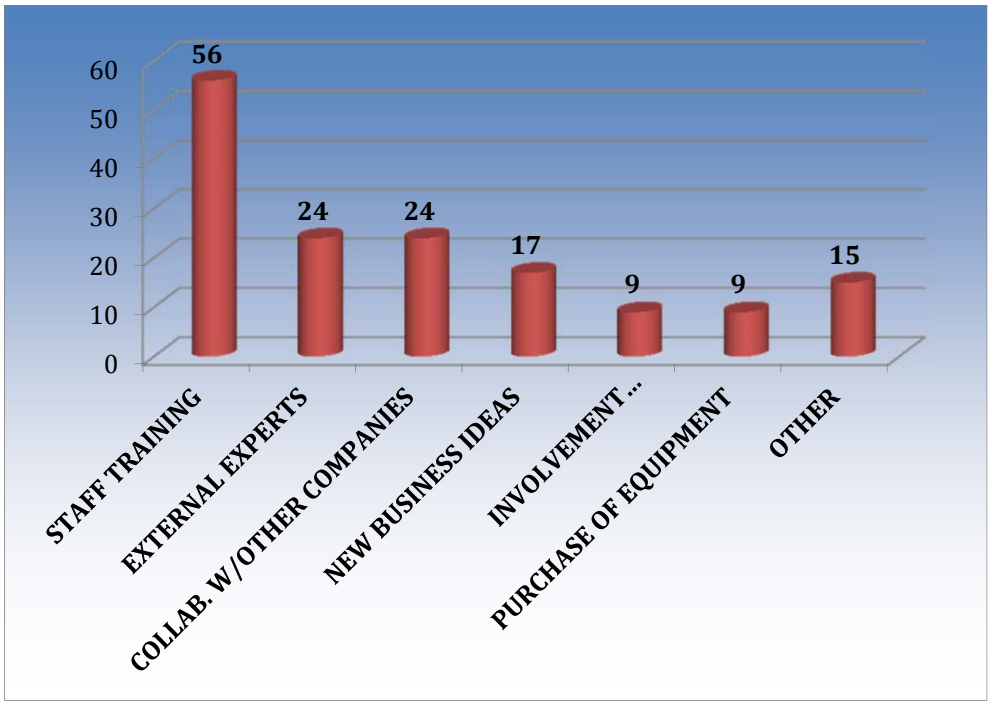


Table 14. Has your company ever paid for external R&D resources or capabilities? Which were such resources or capabilities? By number of employees. (Only respondents having paid for this type of resources: 54 companies). (Rated from most to least frequent answer). (Possible multiple answers). (Figures in %).

Chi-squared vertical %		NO. OF EMPLOYEES			
	TOTAL	< 10	11-50	51-250	>250
TOTAL	**73**	**22**	**18**	**24**	**9**
	%	%	%	%	%
PAID FOR EXTERNAL R&D RESOURCES					
YES	74	68	56	**>92**	78
NO	26	32	44	8	22
WHICH RESOURCES? (Only those respondents who paid)					
STAFF TRAINING	56	53	50	50	86
EXTERNAL EXPERTS	24	13	40	32	0
COLLABORATION WITH OTHER COMPANIES	24	40	10	23	14
NEW BUSINESS IDEAS	17	20	20	18	0
INVOLVEMENT OF CUSTOMERS/SUPPLIERS	9	13	0	14	0
PURCHASE OF EQUIPMENT	9	20	0	9	0
OTHER	15	13	20	9	29

Table 15. Has your company ever paid for external R&D resources or capabilities? Which were such resources or capabilities? By sector of activity. (Only respondents having paid for this type of resources: 54 companies). (Rated from most to least frequent answer). (Possible multiple answers). (Figures in %).

Chi-squared vertical %		SECTORS						
	TOTAL	Metal & Machinery	Agrifood-stuffs	Electric & Electronics	Automotive	Chemical	Other industries	Professional services
TOTAL	**73**	**13**	**11**	**9**	**6**	**5**	**12**	**17**
	%	%	%	%	%	%	%	%
PAID FOR EXTERNAL R&D RESOURCES								
YES	74	85	**<55**	67	67	100	75	76
NO	26	15	45	33	33	0	25	24
WHICH RESOURCES?								
STAFF TRAINING	56	64	67	83	50	80	33	38
EXTERNAL EXPERTS	24	**>45**	0	17	25	20	33	15
COLLABORATION WITH OTHER COMPANIES	24	36	17	17	0	60	0	31
NEW BUSINESS IDEAS	17	18	17	17	25	0	33	8
INVOLVEMENT OF CUSTOMERS/SUPPLIERS	9	**>27**	0	0	0	0	0	15
PURCHASE OF EQUIPMENT	9	9	0	17	25	20	0	8
OTHER	15	9	17	0	0	20	22	23

Chart 8. **What are the advantages of these resources for your company? (Only respondents having paid for this type of resources: 54 companies). (Rated from most to least frequent answer). (Possible multiple answers). (Figures in %).**

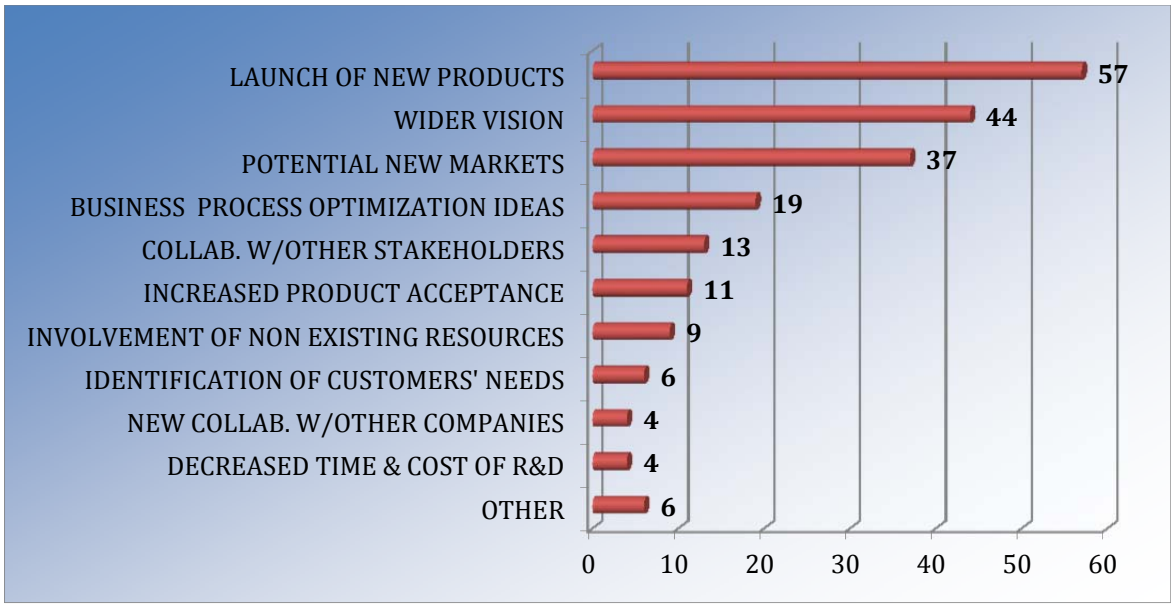


Table 16. **What are the advantages of these resources for your company? By number of employees. (Only respondents having paid for this type of resources: 54 companies). (Rated from most to least frequent answer). (Possible multiple answers). (Figures in %).**

Chi-squared vertical %		NO. OF EMPLOYEES			
	TOTAL	< 10	11-50	51-250	>250
TOTAL	**54**	**15**	**10**	**22**	**7**
	%	%	%	%	%
ADVANTAGES OF SUCH RESOURCES FOR YOUR COMPANY					
Launch of new technologies, products or services	57	47	60	68	43
Wider vision	44	53	40	41	43
Potential new markets	37	40	20	41	43
Business process optimization idea	19	7	0	23	>57
Collaboration with new stakeholders	13	13	20	9	14
Increased product acceptance in market	11	20	0	9	14
Involvement of non existing resources	9	7	10	14	0
Identification of customers' needs	6	7	0	5	14
Decreased time & cost of R&D processes	4	7	10	0	0
New collaborations with other companies	4	0	10	5	0
Other	6	7	10	0	14

Table 17. What are the advantages of these resources for your company? By sector of activity. (Only respondents having paid for this type of resources: 54 companies). (Rated from most to least frequent answer). (Possible multiple answers). (Figures in %).

Chi-squared vertical %		SECTORS						
	TOTAL	Metal & Machinery	Agrifood-stuffs	Electric & Electronics	Automotive	Chemical	Other industries	Professional services
TOTAL	**54**	**11**	**6**	**6**	**4**	**5**	**9**	**13**
	%	%	%	%	%	%	%	%
ADVANTAGES OF RESOURCES								
NEW PRODUCTS	57	45	33	67	50	100	67	54
WIDER VISION	44	36	33	50	0	80	56	46
POTENTIAL NEW MARKETS	37	27	33	50	25	60	33	38
BUSINESS PROCESS OPTIMIZATION	19	18	17	17	25	40	22	8
COLLABORATION WITH OTHER STAKEHOLDERS	13	**>36**	0	0	0	20	0	15
INCREASED PRODUCT ACCEPTANCE	11	9	0	0	0	0	11	**>31**
INVOLVING NON EXISTING RESOURCES	9	**>27**	0	0	0	0	0	15
IDENTIFY CONSUMERS' NEEDS	6	0	17	0	0	0	11	8
DECREASED TIME & COST OF R&D PROCESSES	4	0	0	0	**>25**	0	0	8
COLLABORATION WITH COMPANIES	4	0	0	0	0	0	0	**>15**
OTHER	6	9	17	0	0	0	11	0

Chart 9. Reasons for not using external R&D resources or capabilities. (Only respondents having paid for this type of resources: 19 companies). (Rated from most to least frequent answer). (Figures in %).

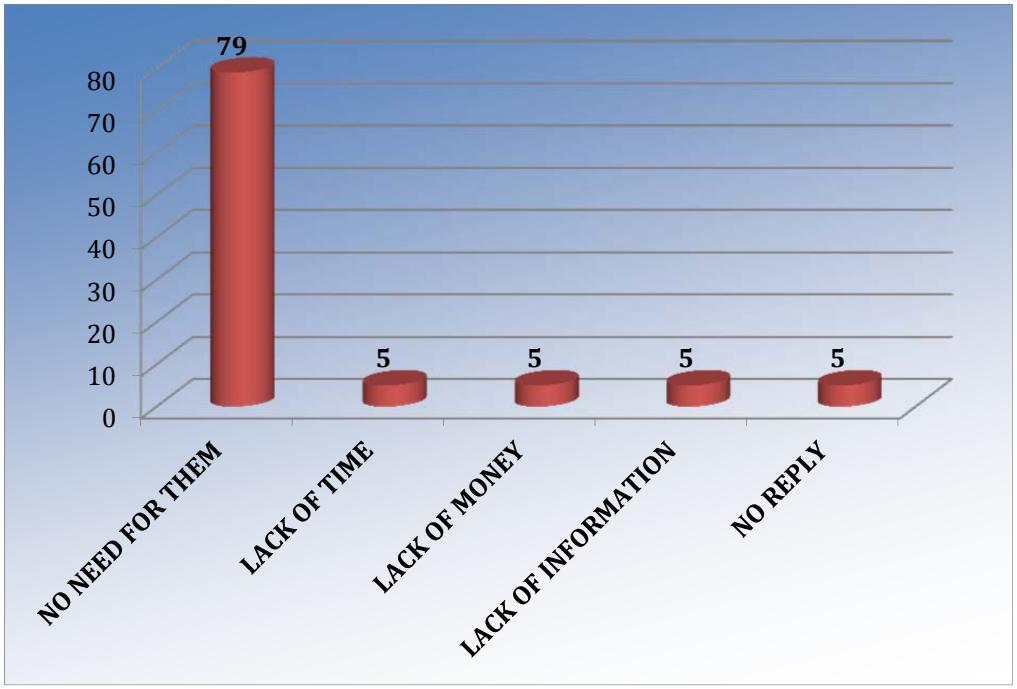


Table 18. Reasons for not using external R&D resources or capabilities. By number of employees. (Only respondents having paid for this type of resources: 19 companies). (Rated from most to least frequent answer). (Figures in %).

Chi-squared vertical %		NO. OF EMPLOYEES			
	TOTAL	< 10	11-50	51-250	> 250
TOTAL	**19**	**7**	**8**	**2**	**2**
	%	%	%	%	%
REASONS FOR NOT USING EXTERNAL R&D RESOURCES					
NO NEED FOR THEM	79	86	88	100	50
LACK OF TIME	5	0	0	0	>50
LACK OF MONEY	5	14	0	0	0
LACK OF INFORMATION	5	0	0	0	>50
NO REPLY	5	0	13	0	0

Table 19. Reasons for not using external R&D resources or capabilities. By sector of activity. (Only respondents having paid for this type of resources: 19 companies). (Rated from most to least frequent answer). (Figures in %).

Chi-squared vertical %		SECTORS						
	TOTAL	Metal & Machinery	Agrifood-stuffs	Electric & Electronics	Automotive	Chemical	Other industries	Professional services
TOTAL	**19**	**2**	**5**	**3**	**2**	**0**	**3**	**4**
	%	%	%	%	%	%	%	%
REASONS FOR NOT USING EXTERNAL R&D RESOURCES								
NO NEED FOR THEM	79	50	100	67	100	0	67	75
LACK OF TIME	5	0	0	0	0	0	0	25
LACK OF MONEY	5	>50	0	0	0	0	0	0
LACK OF INFORMATION	5	0	0	0	0	0	0	25
NO REPLY	5	0	0	0	0	0	>33	0

CONCLUSIONS TO CHAPTER III.4.

- 74% of interviewed companies have paid for external R&D resources or capabilities. The most frequent resource has been *staff training* (56% of companies paying for such resources), *collaboration with other companies* (24%) and *new business ideas* (17%). Finally, *involvement of customers* and *purchase of R&D equipments* concerns only 9% of them.

- By size, companies with less than 50 employees have paid for these resources to a larger extent than companies with 51-250 employees, who have paid for them to a larger extent (92%)x.

- 86% of companies with more than 250 employees have paid for *staff training*, while companies with less than 10 employees have paid more frequently for *collaboration with other companies*, and those with 11-50 employees have paid for *external experts*.

- By sectors, agrifoodstuffs companies have paid to a lower extent for external resources (55% of them). The type of resource is similar for all sectors, notably *training*, while *external experts* are used more frequently by metal & machinery companies, and *involvement of customers/suppliers* and *collaboration with other companies* by chemical companies.

- As for the advantages of using such resources for the company, 57% of companies having paid for them mentioned *launch of new products*, 44% of them mentioned *wider vision* and 37% mentioned *potential new markets*, although companies with more than 250 employees mentioned *new business process optimization ideas* (57%). In addition, machinery companies propose as advantage *collaboration with other stakeholders*, professional service companies highlight the *increased acceptance of products or services in the market* and the automotive sector the *decreased time & cost of R&D processes*.

- Those companies who have not paid for external resources or capabilities have for their most part less than 50 employees and belong to the agrifoodstuffs and professional services sector, and most of them have not paid for such resources and capabilities on the grounds that they do not need them (79%). Companies with more than 250 employees (2) argue that they did not due to *lack of time* or *lack of information*, not because they felt no need to pay for them.

III.5. INTENSITY OF R&D COLLABORATION WITH OTHER BODIES.

Chart 10. Please, evaluate the intensity of collaboration with co-operative partners in the field of R&D. Rating scale: 0=no contact; 4=very strong.

(No R&D contact with suppliers (11%), with customers (7%), with competitors (45%), with public R&D institutes (22%), with business support organizations (27%) and with regional & local governments (22%).

Table 20. Please, evaluate the intensity of collaboration with co-operative partners in the field of R&D. By number of employees. Rating scale: 0=no contact; 4=very strong.

Average of 0 to 4		NO. OF EMPLOYEES			
	TOTAL	< 10	11-50	51-250	> 250
TOTAL	**73**	**22**	**18**	**24**	**9**
SUPPLIERS	2.2	1.9	2.1	2.4	2.2
CLIENTS OR CONSUMERS	2.4	2.4	2.7	2.4	2.1
COMPETITORS	1.1	1.4	0.8	1.1	1.0
UNIVERSITIES	2.1	2.0	1.6	2.4	2.6
PUBLIC R&D INSTITUTES	2.0	1.3	1.6	**2.6**	**2.8**
BUSINESS SUPPORT ORGANIZATIONS	1.7	1.3	2.1	1.8	**1.3**
REGIONAL & LOCAL GOVERNMENTS	2.1	2.0	1.4	2.7	2.1
CENTRAL GOV. DEPTS. & AGENCIES	1.6	1.0	1.2	**2.3**	2.0

Table 21. Please, evaluate the intensity of collaboration with co-operative partners in the field of R&D. By sector of activity. Rating scale: 0=no contact; 4=very strong.

Average de 0 a 4		SECTORS						
	TO-TAL	Metal & Ma-chinery	Agrifood-stuffs	Electric & Elec-tronics	Automo-tive	Chem-ical	Other indus-tries	Profes-sional services
TOTAL	**73**	**13**	**11**	**9**	**6**	**5**	**12**	**17**
SUPPLIERS	2.2	2.5	1.8	2.3	2.0	2.8	1.9	2.1
CLIENTS	2.4	2.8	2.5	2.2	2.5	2.6	2.0	2.4
COMPETI-TORS	1.1	1.5	1.3	1.6	0.0	0.6	0.5	1.4
UNIVERSI-TIES	2.1	2.7	2.2	1.8	1.7	2.8	1.4	2.3
PUBLIC R&D INSTITUTES	2.0	2.2	1.6	2.3	1.2	3.2	1.9	1.8
BUSINESS SUPPORT ORGANIZA-TIONS	1.7	2.5	1.6	2.0	1.2	2.0	1.3	1.2
REGIONAL & LOCAL GOV-ERNMENTS	2.1	2.4	1.5	1.9	1.7	3.0	2.1	2.2
CENTRAL GOV. DEPTS. & AGENCIES	1.6	2.0	1.2	2.3	0.7	3.0	1.1	1.4

CONCLUSIONS TO CHAPTER III.5.

- Enhanced cooperation activities are carried out first with *clients/customers* and then, in descending order, with *suppliers, universities* and *regional governments*. Hence, 47% of companies have very strong cooperation ties with *clients/customers*, 44% of them with *suppliers*, 49% of them with *universities*, 41% of them with *public R&D institutes* and 48% of them with *regional governments*. These are followed by *central government departments & agencies* (30%), *business support organizations* (29%) and *competitors* (17%), with which they maintain strong bonds.

- Thus, average ratings (from 0=no contact to 4=very strong) are 2.4 for *clients/customers*, 2.2 with *suppliers*, 2.1 with *universities* and *regional governments* and 2.0 with *public R&D institutes*.

- The intensity of cooperation with *universities* decreases in small companies, as well as with *public R&D institutes*, while in companies with more than 250 employees contact becomes stronger with *universities* and fades with *business support organizations*.

- By sectors, the relationship between chemical companies and *providers* and *public R&D institutes* between and between professional service companies and *competitors* is quite intense, while that of professional service companies with *public R&D institutes* and that of automotive companies with *competitors* is weak.

- Companies obtain information on technology trends mostly from the Internet (73%), followed by *print media* (38%) and *events and trade fairs* (37%).

- Larger companies on the other hand consult with organizations or bodies.

III.6. OBTAINING INFORMATION FOR THE COMPANY.

Chart 11. Where does company get information from on the following topics: Technology trends, new products and R&D activities of universities in the region. (Possible multiple answers).

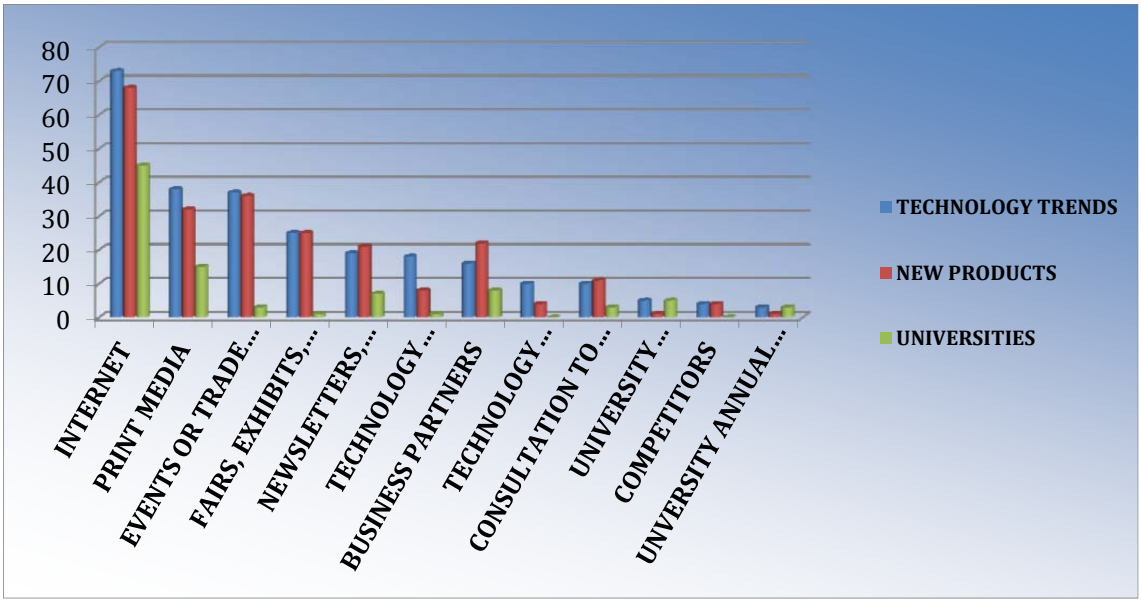


Table 22. Where does company get information from on the following topics: Technology trends. By number of employees. (Possible multiple answers).

Chi-squared vertical %		NO. OF EMPLOYEES			
	TOTAL	< 10	11-50	51-250	> 250
TOTAL	**73**	**22**	**18**	**24**	**9**
	%	%	%	%	%
WHERE DOES COMPANY OBTAIN INFORMATION FROM ON TRENDS					
INTERNET	73	82	56	79	67
PRINT MEDIA	38	27	50	38	44
EVENTS OR TRADE FAIRS	37	41	22	42	44
FAIRS, EXHIBITS, COMPETITION	25	14	11	42	33
NEWSLETTERS, BROCHURES	19	23	17	13	33
TECHNOLOGY PLATFORMS	18	18	11	17	33
BUSINESS PARTNERS	16	14	11	21	22
TECHNOLOGY REPORTS	10	9	6	13	11
CONSULTATION TO ORGANIZATIONS	10	0	6	8	>44
UNIVERSITY KNOWLEDGE MAP	5	5	6	4	11
COMPETITORS	4	5	6	0	11
UNIVERSITY ANNUAL REPORTS	3	5	0	0	11
NO REPLY	3	5	6	0	0

Table 23. Where does company get information from on the following topics: Technology trends. By sector of activity. (Possible multiple answers).

Chi-squared vertical %		SECTORS						
	TOTAL	Metal & Machinery	Agrifood-stuffs	Electric & Electronics	Automotive	Chemical	Other industries	Professional services
TOTAL	**73**	**13**	**11**	**9**	**6**	**5**	**12**	**17**
	%	%	%	%	%	%	%	%
TRENDS								
INTERNET	73	69	100	78	50	80	58	71
PRINT MEDIA	38	46	27	44	67	40	42	24
EVENTS	37	54	36	11	33	60	50	24
FAIRS, EXHIBITS	25	23	18	11	50	>80	25	12
NEWSLETTERS	19	23	18	22	33	20	0	24
TECHNOLOGY PLATFORMS	18	23	9	11	17	20	17	24
BUSINESS PARTNERS	16	15	9	22	33	40	8	12
TECHNOLOGY REPORTS	10	15	0	0	0	20	8	18
CONSULTATION TO ORGANIZATIONS	10	8	0	0	0	>40	17	12
UNIVERSITY KNOWLEDGE MAP	5	>23	0	0	0	20	0	0
COMPETITORS	4	0	0	0	0	20	8	6
ANNUAL REPORTS	3	8	0	0	0	>20	0	0
NO REPLY	3	0	0	0	0	0	8	6

Table 24. Where does company get information from on the following topics: New products or services. By number of employees. (Possible multiple answers).

Chi-squared vertical %		NO. OF EMPLOYEES			
	TOTAL	< 10	11-50	51-250	> 250
TOTAL	**73**	**22**	**18**	**24**	**9**
	%	%	%	%	%
WHERE DOES COMPANY OBTAIN INFORMATION FROM ON NEW PRODUCTS					
INTERNET	68	82	50	71	67
PRINT MEDIA	32	32	28	29	44
EVENTS OR TRADE FAIRS	36	36	28	38	44
FAIRS, EXHIBITS, COMPETITION	25	14	17	33	44
NEWSLETTERS, BROCHURES	21	18	22	13	44
TECHNOLOGY PLATFORMS	8	14	6	4	11
BUSINESS PARTNERS	22	27	22	17	22
TECHNOLOGY REPORTS	4	9	0	0	11
CONSULTATION TO ORGANIZATIONS	11	0	6	13	**>44**
UNIVERSITY KNOWLEDGE MAP	1	5	0	0	0
COMPETITORS	4	5	6	0	11
UNIVERSITY ANNUAL REPORTS	1	5	0	0	0
NO REPLY	4	0	6	8	0

Table 25. Where does company get information from on the following topics: New products or services. By sector of activity. (Possible multiple answers).

Chi-squared vertical %		SECTORS						
	TOTAL	Metal & Machinery	Agrifood-stuffs	Electric & Electronics	Automotive	Chemical	Other industries	Professional services
TOTAL	**73**	**13**	**11**	**9**	**6**	**5**	**12**	**17**
	%	%	%	%	%	%	%	%
NEW PRODUCTS								
INTERNET	68	62	91	67	50	80	58	71
PRINT MEDIA	32	<15	27	<11	50	40	50	35
EVENTS	36	46	45	22	33	60	50	12
FAIRS, EXHIBITS,	25	31	0	22	33	>80	25	18
NEWSLETTERS	21	23	9	22	33	20	17	24
TECHNOLOGY PLATFORMS	8	8	0	0	17	20	8	12
BUSINESS PARTNERS	22	23	9	33	33	40	8	24
TECHNOLOGY REPORTS	4	8	9	0	0	20	0	0
CONSULTATION TO ORGANIZATIONS	11	8	9	0	0	20	17	18
UNIVERSITY KNOWLEDGE MAP	1	8	0	0	0	0	0	0
COMPETITORS	4	0	9	0	0	20	0	6
ANNUAL REPORTS	1	8	0	0	0	0	0	0
NO REPLY	4	8	0	11	0	0	8	0

Table 26. Where does company get information from on the following topics: Universities and their R&D activities in the region. By number of employees. (Possible multiple answers).

Chi-squared vertical %		NO. OF EMPLOYEES			
	TOTAL	< 10	11-50	51-250	> 250
TOTAL	**73**	**22**	**18**	**24**	**9**
	%	%	%	%	%
WHERE DOES COMPANY OBTAIN INFORMATION FROM ON UNIVERSITY R&D ACTIVITIES					
INTERNET	45	55	39	50	22
PRINT MEDIA	15	23	11	13	11
EVENTS OR TRADE FAIRS	3	5	0	4	0
FAIRS, EXHIBITS, COMPETITION	1	5	0	0	0
NEWSLETTERS, BROCHURES	7	0	11	8	11
TECHNOLOGY PLATFORMS	1	5	0	0	0
BUSINESS PARTNERS	8	5	0	17	11
TECHNOLOGY REPORTS	0	0	0	0	0
CONSULTATION TO ORGANIZATIONS	3	0	0	4	11
UNIVERSITY KNOWLEDGE MAP	5	9	6	0	11
COMPETITORS	0	0	0	0	0
ANNUAL REPORTS	3	5	6	0	0
NO REPLY	41	32	50	42	44

Table 27. Where does company get information from on the following topics: Universities and their R&D activities in the region. By sector of activity. (Possible multiple answers).

Chi-squared vertical %		SECTORS						
	TOTAL	Metal & Machinery	Agrifoodstuffs	Electric & Electronics	Automotive	Chemical	Other industries	Professional services
TOTAL	**73**	**13**	**11**	**9**	**6**	**5**	**12**	**17**
	%	%	%	%	%	%	%	%
UNIVERSITIES' R&D								
INTERNET	45	54	55	56	17	40	17	59
PRINT MEDIA	15	23	9	11	0	20	0	29
EVENTS	3	**>15**	0	0	0	0	0	0
FAIRS, EXHIBITS,	1	0	0	0	0	0	0	6
NEWSLETTERS	7	8	9	0	**>33**	0	0	6
TECHNOLOGY PLATFORMS	1	0	0	0	0	0	0	6
BUSINESS PARTNERS	8	8	0	11	**>33**	20	8	0
TECHNOLOGY REPORTS	0	0	0	0	0	0	0	0
CONSULTATION TO ORGANIZATIONS	3	0	0	0	0	0	0	**>12**
UNIVERSITY KNOWLEDGE MAP	5	15	9	0	0	20	0	0
COMPETITORS	0	0	0	0	0	0	0	0
ANNUAL REPORTS	3	8	0	0	0	0	0	6
NO REPLY	41	31	27	44	33	60	75	29

Chart 12. How often does your company get information on the activities of universities in the region? (Figures in %).

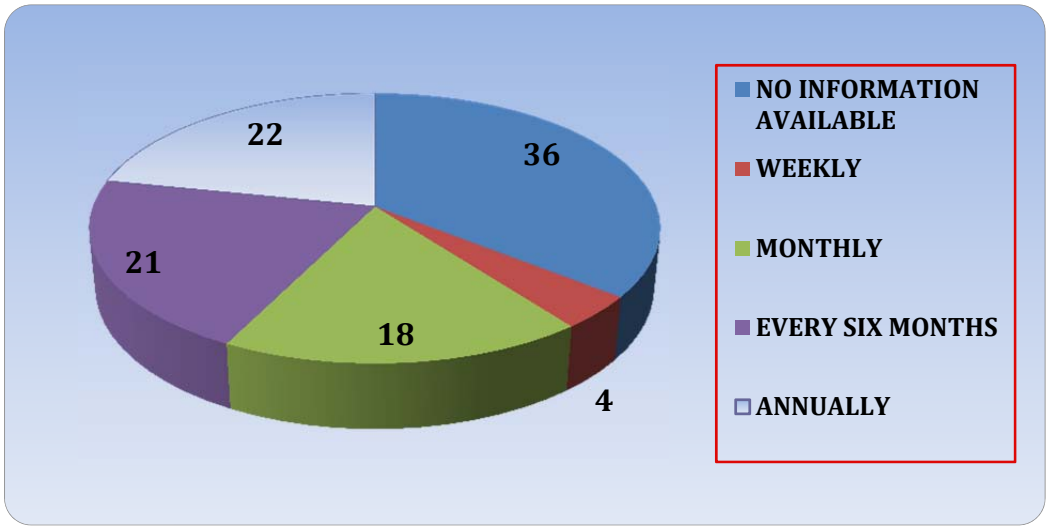


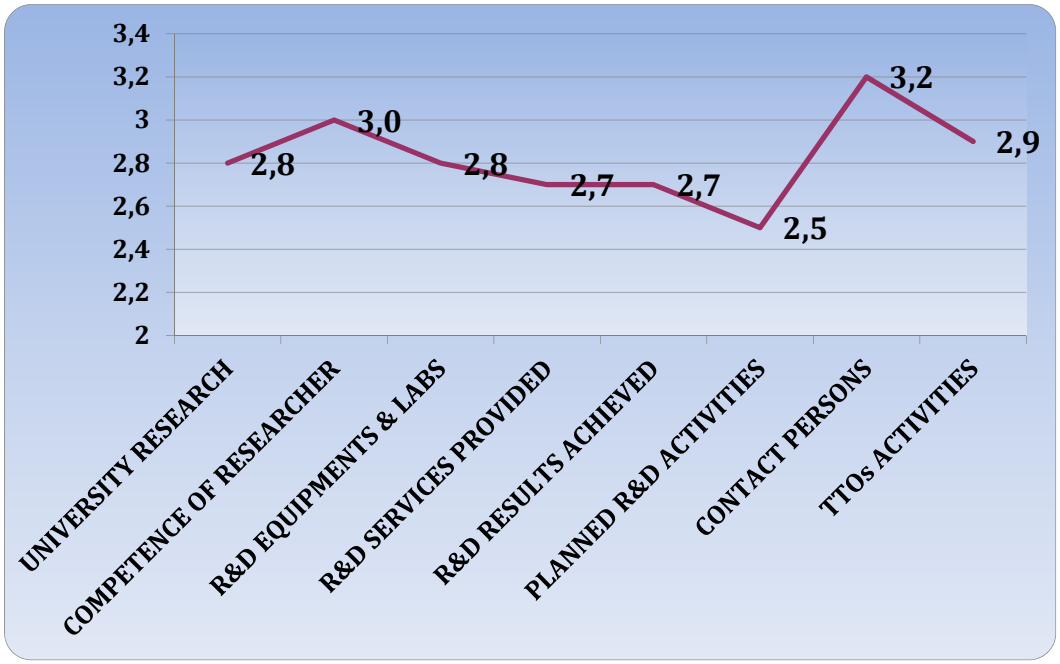
Table 28. How often does your company get information on the activities of universities in the region? By number of employees. (Figures in %).

Chi-squared vertical %		NO. OF EMPLOYEES			
	TOTAL	< 10	11-50	51-250	> 250
TOTAL	**73**	**22**	**18**	**24**	**9**
	%	%	%	%	%
FREQUENCY OF INFORMATION ON UNIVERSITY ACTIVITIES					
NO INFORMATION AVAILABLE	36	27	56	33	22
WEEKLY	4	5	6	0	11
MONTHLY	18	14	11	29	11
EVERY SIX MONTHS	21	23	11	25	22
ANNUALLY	22	32	17	13	33

Table 29. How often does your company get information on the activities of universities in the region? By sector of activity. (Figures in %).

Chi-squared vertical %		SECTORS						
	TOTAL	Metal & Machinery	Agrifood-stuffs	Electric & Electronics	Automotive	Chemical	Other industries	Professional services
TOTAL	**73**	**13**	**11**	**9**	**6**	**5**	**12**	**17**
	%	%	%	%	%	%	%	%
FREQUENCY OF INFORMATION ON UNIVERSITY ACTIVITIES								
NO INFORMATION AVAILABLE	36	23	36	44	33	20	67	24
WEEKLY	4	8	0	11	0	0	8	0
MONTHLY	18	15	18	11	17	20	17	24
EVERY SIX MONTHS	21	31	27	11	33	20	0	24
ANNUALLY	22	23	18	22	17	40	8	29

Chart 13. Please, evaluate the usefulness of the information your company gets on the activities of universities in the region. (Only respondents obtaining information: 47 companies). Rating scale: from 1=very dissatisfied to 4=very satisfied.



University research was rated by 43 companies; *professional competence of researcher* by 37, *R&D labs* by 35, *R&D results* by 35, *planned R&D activities* by 35, *suitability of contact persons* by 42 and *TTO activities* by 27.

Table 30. Please, evaluate the usefulness of the information your company gets on the activities of universities in the region. (Only respondents obtaining information: 47 companies). Rating scale: from 1=very dissatisfied to 4=very satisfied.

	Frequencies	Percentages	% / Respondents
TOTAL	**73**	**100**	**100**
UNIVERSITY RESEARCH			
VERY DISSATISFIED	1	1	2
RATHER DISSATISFIED	14	19	33
RATHER SATISFIED	22	30	51
VERY SATISFIED	6	8	14
NO REPLY	30	41	
Average	2.8		
Deviation	0.7		
PROFESSIONAL COMPETENCE OF UNIVERSITY RESEARCHERS			
VERY DISSATISFIED	0	0	0
RATHER DISSATISFIED	7	10	19
RATHER SATISFIED	23	32	62
VERY SATISFIED	7	10	19
NO REPLY	36	49	
Average	3.0		
Deviation	0.6		
R&D EQUIPMENTS AND LABS			
VERY DISSATISFIED	1	1	2
RATHER DISSATISFIED	12	16	29
RATHER SATISFIED	23	32	56
VERY SATISFIED	5	7	12
NO REPLY	32	44	
Average	2.8		
Deviation	0.7		
R&D SERVICES PROVIDED BY UNIVERSITIES			
VERY DISSATISFIED	2	3	5
RATHER DISSATISFIED	9	12	24
RATHER SATISFIED	20	27	53
VERY SATISFIED	4	5	11
NO REPLY	35	48	
Average	2.7		
Deviation	0.7		

	Frequencies	Percentages	% / Respondents
TOTAL	**73**	**100**	**100**
R&D RESULTS ACHIEVED IN UNIVERSI-TIES			
VERY DISSATISFIED	2	3	5
RATHER DISSATISFIED	10	14	27
RATHER SATISFIED	21	29	57
VERY SATISFIED	2	3	5
NO REPLY	36	49	
Average	2.7		
Deviation	0.7		
PLANNED R&D ACTIVITIES			
VERY DISSATISFIED	4	5	11
RATHER DISSATISFIED	12	16	33
RATHER SATISFIED	17	23	47
VERY SATISFIED	2	3	6
NO REPLY	37	51	
Average	2.5		
Deviation	0.8		
SUITABILITY OF CONTACT PERSONS			
VERY DISSATISFIED	1	1	2
RATHER DISSATISFIED	1	1	2
RATHER SATISFIED	28	38	65
VERY SATISFIED	12	16	28
NO REPLY	30	41	2
Average	3.2		
Deviation	0.6		
ACTIVITIES OF TTOs			
VERY DISSATISFIED	2	3	7
RATHER DISSATISFIED	4	5	15
RATHER SATISFIED	17	23	63
VERY SATISFIED	4	5	15
NO REPLY	46	63	
Average	2.9		
Deviation	0.8		

Table 31. Please, evaluate the usefulness of the information your company gets on the activities of universities in the region. By number of employees. (Only respondents obtaining information: 47 companies). (Rating scale: from 1=very dissatisfied to 4=very satisfied).

Frequencies		NO. OF EMPLOYEES			
	TOTAL	< 10	11-50	51-250	>250
TOTAL	**73**	**22**	**18**	**24**	**9**
UNIVERSITY RESEARCH	2.8	2.9	2.7	2.7	2.7
PROFESSIONAL COMPETENCE OF UNIVERSITY RESEARCHERS	3.0	3.1	3.2	2.8	3.0
R&D EQUIPMENTS AND LABS	2.8	2.9	2.7	2.7	2.8
R&D SERVICES PROVIDED BY UNIVERSITIES	2.7	2.9	3.0	2.5	2.5
R&D RESULTS ACHIEVED IN UNIVERSITIES	2.7	3.0	2.6	2.5	2.3
PLANNED R&D ACTIVITIES	2.5	2.9	2.4	2.4	1.8
SUITABILITY OF CONTACT PERSONS	3.2	3.3	3.1	3.3	3.0
ACTIVITIES OF TTOs	2.9	3.1	3.0	2.9	2.2

Table 32. Please, evaluate the usefulness of the information your company gets on the activities of universities in the region. By sector of activity. (Only respondents obtaining information: 47 companies). (Rating scale: from 1=very dissatisfied to 4=very satisfied).

Frequencies		SECTORS						
	TOTAL	Metal & Machinery	Agrifood-stuffs	Electric & Electronics	Automotive	Chemical	Other industries	Professional services
TOTAL	**73**	**13**	**11**	**9**	**6**	**5**	**12**	**17**
UNIVERSITY RESEARCH	2.8	**3.3**	2.7	2.6	2.5	2.0	2.8	2.8
PROFESSIONAL COMPETENCE	3.0	3.0	3.2	2.6	3.3	3.0	3.0	3.0
R&D EQUIPMENTS AND LABS	2.8	2.6	2.9	2.6	**3.7**	2.5	3.0	2.7
R&D SERVICES PROVIDED	2.7	2.6	**3.3**	2.8	3.0	2.5	2.3	2.6
R&D RESULTS ACHIEVED	2.7	2.7	3.0	2.8	2.3	2.0	2.3	2.6
PLANNED R&D ACTIVITIES	2.5	2.4	2.8	**1.5**	2.0	2.3	2.7	2.8
CONTACT PERSONS	3.2	2.9	3.1	3.0	**3.8**	**3.5**	3.3	3.3
ACTIVITIES OF TTOs	2.9	2.7	2.9	3.0	3.0	2.0	2.0	**3.3**

Chart 14. **What are the results of information provided by the universities in your region? (Only respondents obtaining information from universities: 47 companies).**

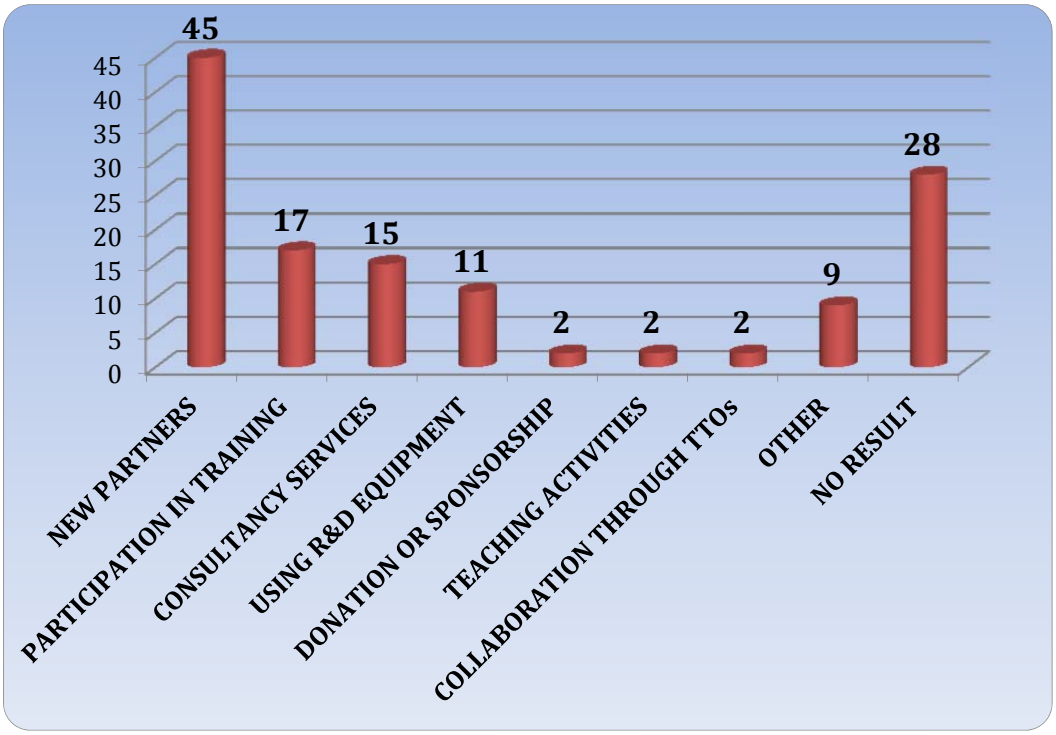


Table 33. **What are the results of information provided by the universities in your region? (Possible multiple answers).**

	Frequencies	% of Information Recipients	% of TOTAL
TOTAL	**73**	**100**	**100**
ACTIVITIES RESULTING FROM INFORMATION RECEIVED FROM UNIVERSITIES			
NEW PARTNERS	21	45	29
PARTICIPATION IN TRAINING	8	17	11
CONSULTANCY SERVICES	7	15	10
USING R&D EQUIPMENT	5	11	7
DONATION OR SPONSORSHIP	1	2	1
TEACHING ACTIVITIES	1	2	1
COLLABORATION THROUGH TTOs	1	2	1
OTHER	4	9	5
NO RESULT	13	28	18
NO INFORMATION REC'D FROM UNIVERSITIES	26	-	36

Table 34. What are the results of information provided by the universities in your region? By number of employees. (Only respondents obtaining information from universities: 47 companies). (Possible multiple answers).

Chi-squared vertical %		NO. OF EMPLOYEES			
	TOTAL	< 10	11-50	51-250	> 250
TOTAL	**47**	**16**	**8**	**16**	**7**
	%	%	%	%	%
ACTIVITIES RESULTING FROM INFORMATION RECEIVED FROM UNIVERSITIES					
NEW PARTNERS	45	50	63	31	43
PARTICIPATION IN TRAINING	17	6	38	13	29
CONSULTANCY SERVICES	15	25	0	13	14
USING R&D EQUIPMENT	11	0	13	13	29
DONATION OR SPONSORSHIP	2	0	0	0	**>14**
TEACHING ACTIVITIES	2	0	0	0	**>14**
COLLABORATION THROUGH TTOs	2	0	0	0	**>14**
OTHER	9	19	0	0	14
NO RESULT	28	19	13	38	43

Table 35. What are the results of information provided by the universities in your region? By sector of activity. (Only respondents obtaining information from universities: 47 companies). (Possible multiple answers).

Chi-squared vertical %		SECTORS						
	TOTAL	Metal & Machinery	Agrifood-stuffs	Electric & Electronics	Automotive	Chemical	Other industries	Professional services
TOTAL	**47**	**10**	**7**	**5**	**4**	**4**	**4**	**13**
	%	%	%	%	%	%	%	%
RESULTING ACTIVITIES								
NEW PARTNERS	45	40	57	60	50	50	25	38
PARTICIPATION IN TRAINING	17	20	14	0	50	25	50	0
CONSULTANCY SERVICES	15	10	0	0	50	0	25	23
USING R&D EQUIPMENT	11	10	29	0	25	25	0	0
DONATION OR SPONSORSHIP	2	0	0	0	25	0	0	0
TEACHING ACTIVITIES	2	0	0	0	25	0	0	0
COLLABORATION THROUGH TTOs	2	0	0	0	25	0	0	0
OTHER	9	10	0	0	25	0	0	15
NO RESULT	28	40	14	40	0	50	25	23

Chart 15. In what form would you like to receive information on R&D activities or services? (Possible multiple answers).

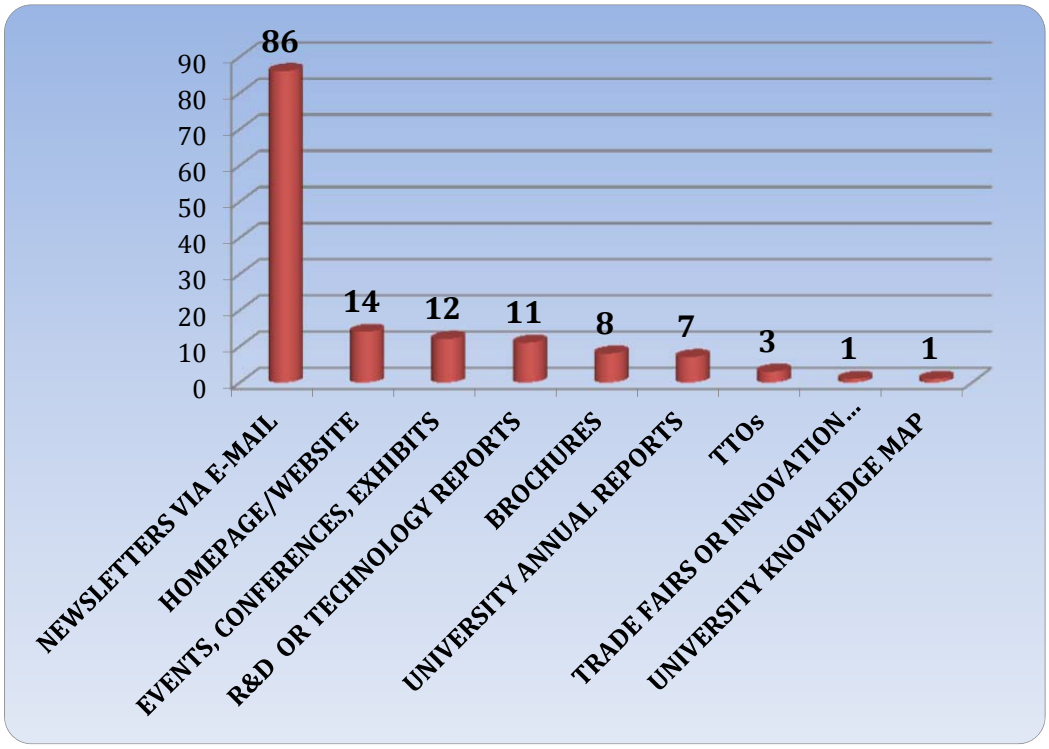


Table 36. In what form would you like to receive information on R&D activities or services? By number of employees. (Possible multiple answers).

Chi-squared vertical %		NO. OF EMPLOYEES			
	TOTAL	< 10	11-50	51-250	> 250
TOTAL	**73**	**22**	**18**	**24**	**9**
	%	%	%	%	%
PREFERRED MEANS OF INFORMATION					
NEWSLETTERS VIA E-MAIL	86	86	89	92	67
HOMEPAGE/WEBSITE	14	23	17	8	0
EVENTS, CONFERENCES, EXHIBITS	12	9	11	17	11
R&D OR TECHNOLOGY REPORTS	11	9	6	13	22
BROCHURES	8	14	0	8	11
UNIVERSITY ANNUAL REPORTS	7	0	6	4	**>33**
TTOs	3	0	0	4	11
EXHIBITS OR INNOVATION CONTESTS	1	0	0	0	**>11**
UNIVERSITY KNOWLEDGE MAP	1	0	0	4	0

Table 37. In what form would you like to receive information on R&D activities or services? By sector of activity. (Possible multiple answers).

Chi-squared vertical %		SECTORS						
	TOTAL	Metal & Machinery	Agrifood-stuffs	Electric & Electronics	Automotive	Chemical	Other industries	Professional services
TOTAL	**73**	**13**	**11**	**9**	**6**	**5**	**12**	**17**
	%	%	%	%	%	%	%	%
PREFERRED MEANS OF INFORMATION								
NEWSLETTERS VIA E-MAIL	86	100	100	78	50	100	92	76
HOMEPAGE/WEBSITE	14	15	9	22	17	0	0	24
EVENTS, CONFERENCES	12	0	0	22	17	0	**>33**	12
R&D OR TECHNOLOGY REPORTS	11	15	27	0	0	0	0	18
BROCHURES	8	0	9	0	**>33**	20	17	0
UNIVERSITY ANNUAL REPORTS	7	8	9	0	17	0	8	6
TTOs	3	0	0	0	0	0	0	**>12**
EXHIBITS OR INNOVATION CONTESTS	1	0	0	0	**>17**	0	0	0
UNIVERSITY KNOWLEDGE MAP	1	0	0	**>11**	0	0	0	0

CONCLUSIONS TO CHAPTER III.6.

- Companies obtain information on technology trends, new products and universities mainly from the *Internet*, followed by *print media* and *participation in events and trade fairs*.

- Hence, the *Internet* is the first means from which information is obtained on *technology trends* (73%), followed by *print media* (38%) and *participation in events and trade fairs* (37%). Large companies tend to rely mostly on *exhibits or innovation contests*, as well as on *consultancy services*.

- By sectors, the automotive sector prefers *print media*, while chemical companies opt for *consultancy services* and the metal & machinery sector choses first *university knowledge maps*.

- Information on *new products and services* is obtained first from the *Internet* (68%), followed by *participation in events and trade fairs* (36%) and *print media* (32%). Companies with more than 250 employees obtain substantial information from *consultancy services* and, by sectors, chemical companies rely most on *fairs and exhibits* and *print media* are ultimately the least used resource in the metal & machinery and electric & electronic sectors.

- Only 59% of respondents seek information on *university R&D activities*, which they do over the *Internet* (45% of total), followed quite far behind by *print media* (15%). The automotive sector also looks for information through *newsletters* and *business partners*.

- When questioned about how often they obtain information on *university activities*, 36% of respondents replied that they had no information on that respect. As for frequency, companies tend most frequently to obtain updated information on a biannual or annual basis.

- Companies obtaining information on *university activities* (43 of 73) feel satisfied about university research activities (65%), although 35% of them feel dissatisfied about it. Satisfaction rates increase when assessing *professional competence of researchers* (81%).

- Satisfaction levels among respondents regarding the information they obtain are the following: *R&D equipments and labs* (68%), *R&D services* (64%), *R&D results achieved* (62%), *planned R&D activities* (53%), *suitability of contact persons* (93%) and *TTO activities* (78%). As regards this last item (*TTO activities*), it is assessed only by 37% of companies, which reveals they are less aware about it.

- There are no major differences as regards company size, but values are slightly higher in companies with less than 50 employees, both on *university research*, *R&D services provided* and *R&D results achieved*.

- Ratings by sector are especially satisfactory, as follows: *university research* for metal & machinery companies, *R&D equipments and labs* for automotive companies, *R&D services* for agrifoodstuffs companies, *suitability of contact persons* for automotive and chemical companies and *TTO activities* for the professional services sector.

- The supply of information from universities in the region has led to *new partnership* opportunities for almost half of recipient companies (47%). This item is followed quite behind by *participation in training* (17%), *consultancy services* (15%) and use of *R&D equipments* (11%). Of the total of interviewed companies, 10% have used *consultancy services* and 7% have used *R&D equipments*. No substantial differences have been found as regards other variables.

- Finally, companies would like to receive information on R&D activities through *newsletters via e-mail* (86%), whereas other means lag quite behind: *homepage/website* (14%), *events & conferences* (12%) and *R&D reports* (11%).

- Companies with more than 250 employees would like to receive information through *newsletters via e-mail*, as well as through *university reports*. By sectors, the other industries sector would prefer to receive information on the occasion of *events & conferences*, while the automotive sector, in addition to *newsletters via e-mail*, would choose *brochures*.

III.7. R&D COLLABORATION AND COOPERATION NETWORKS WITH TECHNOLOGY TRANSFER OFFICES (TTOs).

Chart 16. Which R&D collaboration network has your company joined? (Possible multiple answers). (Figures in % of total of companies/of companies within networks). (In decreasing order of importance).

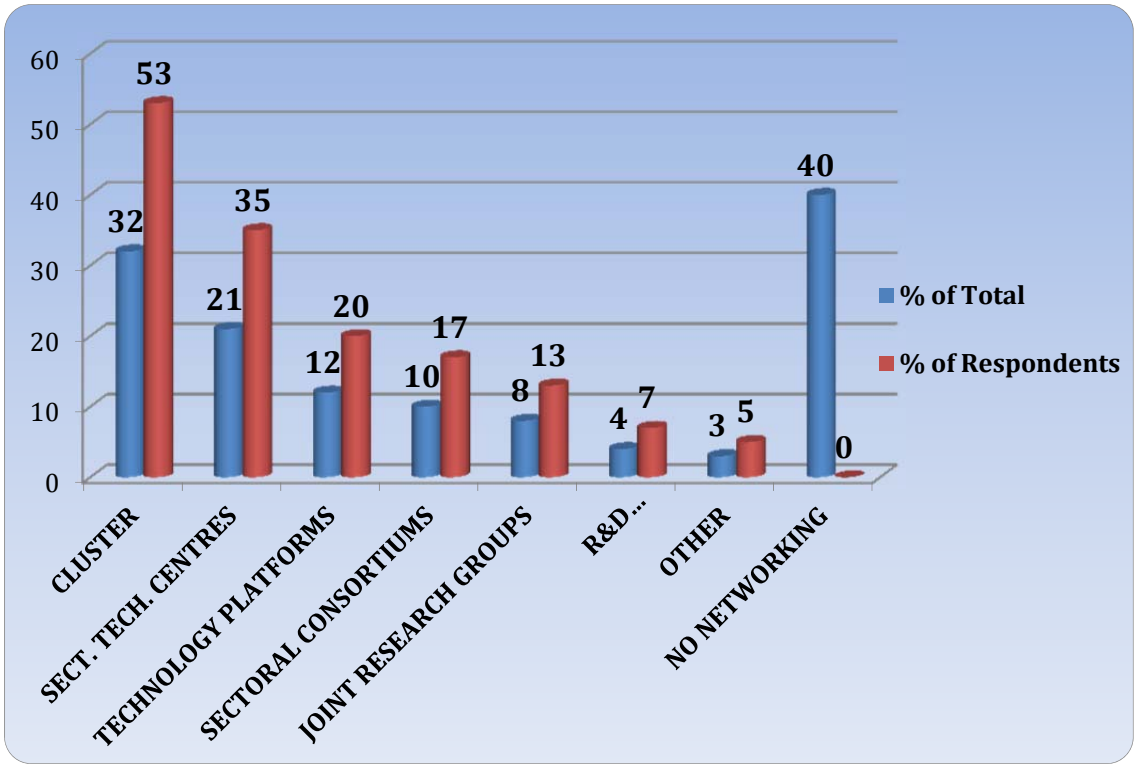


Table 38. Which R&D collaboration network has your company joined? By number of employees. (Possible multiple answers). (Figures in % of total companies).

Chi-squared vertical %		NO. OF EMPLOYEES			
	TOTAL	< 10	11-50	51-250	> 250
TOTAL	**73**	**22**	**18**	**24**	**9**
	%	%	%	%	%
COMPANY IS MEMBER OF R&D NETWORKS					
NO NETWORKING	40	**68**	33	25	22
CLUSTER	32	23	17	38	67
SECTORAL TECHNOLOGY CENTRES	21	9	33	17	33
TECHNOLOGY PLATFORMS	12	5	6	21	22
SECTORAL CONSORTIUMS	10	5	0	17	22
JOINT RESEARCH GROUPS	8	9	17	0	11
COOPERATION IN R&D COMMERCIALIZATION	4	0	11	4	0
OTHER	3	0	0	8	0

Table 39. Which R&D collaboration network has your company joined? By sector of activity. (Possible multiple answers). (Figures in % of total companies).

Chi-squared vertical %		SECTORS						
	TOTAL	Metal & Machinery	Agrifood-stuffs	Electric & Electronics	Auto-motive	Chem-ical	Other industries	Professional services
TOTAL	**73**	**13**	**11**	**9**	**6**	**5**	**12**	**17**
	%	%	%	%	%	%	%	%
COMPANY IS MEMBER OF R&D NETWORKS								
NO NETWORKING	40	**46**	**45**	11	33	0	50	53
CLUSTER	32	31	**9**	33	**50**	**60**	25	35
SECTORAL TECHNOLOGY CENTRES	21	31	27	11	33	40	17	6
TECHNOLOGY PLATFORMS	12	8	9	11	0	40	0	24
SECTORAL CONSORTIUMS	10	15	0	11	0	20	8	12
JOINT RESEARCH GROUPS	8	15	0	22	17	0	0	6
COOPERATION IN R&D COMMERCIALIZATION	4	0	9	11	0	0	0	6
OTHER	3	0	0	11	0	0	8	0

Chart 17. Does your company cooperate with any Technology Transfer Offices (TTOs)? (Figures in %).

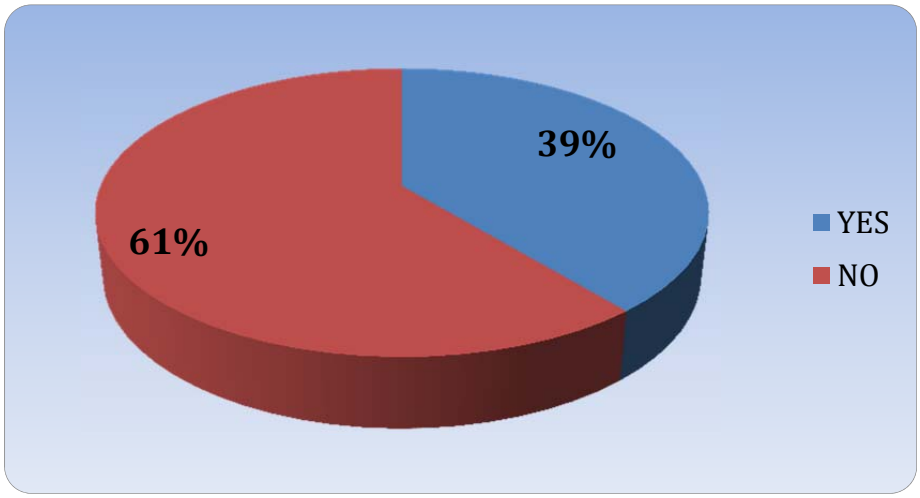


Chart 18. If yes, please name TTO. (For respondents cooperating with TTOs: 28 companies). (Possible multiple answers).

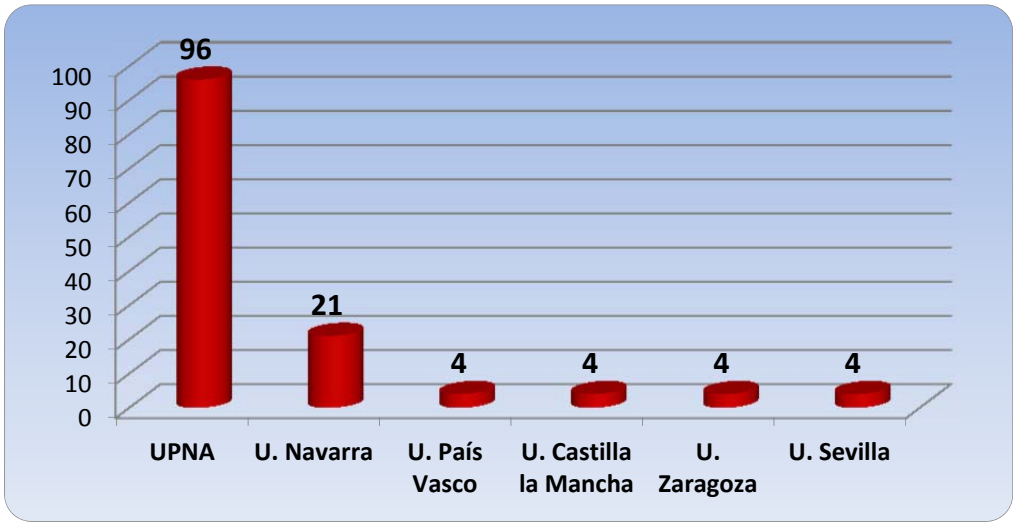


Table 40. Does your company cooperate with any Technology Transfer Offices (TTOs)? By number of employees. (Figures in %).

Chi-squared vertical %		NO. OF EMPLOYEES			
	TOTAL	< 10	11-50	51-250	> 250
TOTAL	**73**	**22**	**18**	**24**	**9**
	%	%	%	%	%
DOES COOPERATE					
YES	39	45	24	33	67
NO	61	55	76	67	33

Table 41. Does your company cooperate with any Technology Transfer Offices (TTOs)? By sector of activity. (Figures in %).

Chi-squared vertical %		SECTORS						
	TOTAL	Metal & Machinery	Agrifood-stuffs	Electric & Electronics	Automotive	Chemical	Other industries	Professional services
TOTAL	**73**	**13**	**11**	**9**	**6**	**5**	**12**	**17**
	%	%	%	%	%	%	%	%
DOES COOPERATE								
YES	39	38	50	33	17	20	25	59
NO	61	62	50	67	83	80	75	41

Chart 19. Please, evaluate your company's collaboration with TTOs. (Only respondents cooperating with TTOs: 28 companies). (Rating scale: from 0=No collaboration to 4=Very strong).

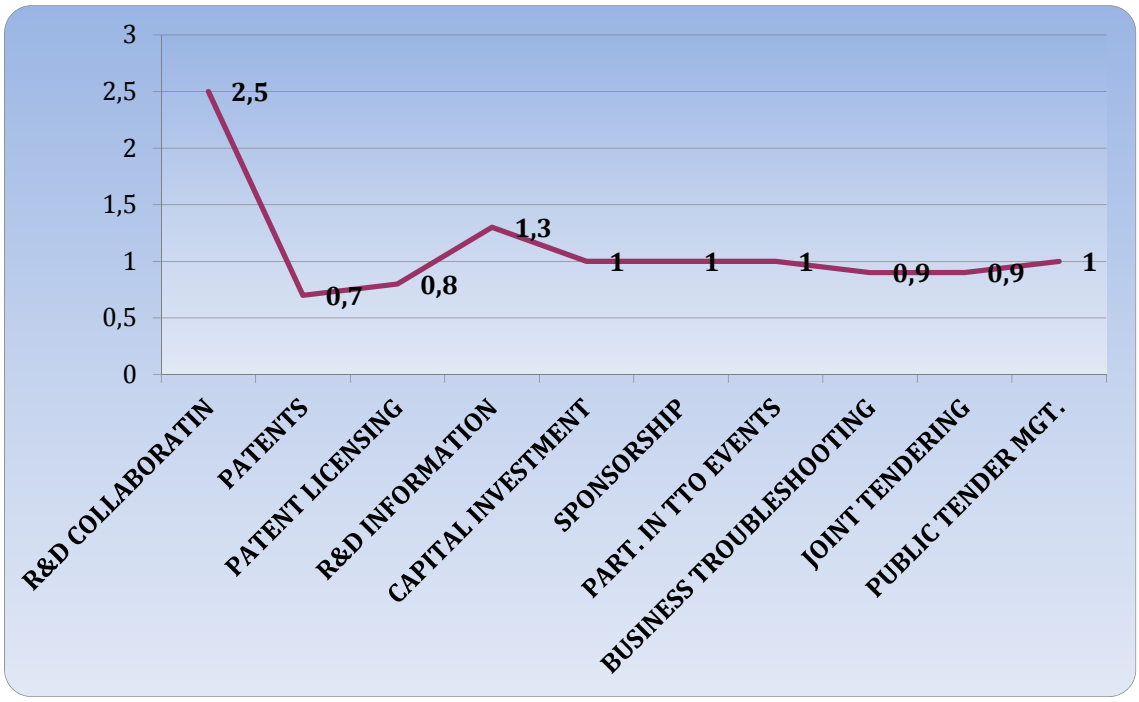


Table 42. Please, evaluate your company's collaboration with TTOs. (Only respondents cooperating with TTOs: 28 companies). (Rating scale: from 0=No collaboration to 4=Very strong).

	Frequen-cies	Percent-ages
TOTAL	**28**	**100**
R&D COLLABORATION		
VERY WEAK	3	11
WEAK	7	25
STRONG	12	43
VERY STRONG	4	14
NO COLLABORATION	2	7
Average	2,5	
Deviation	1,1	
PATENT-RELATED COLLABORATION		
VERY WEAK	3	11
WEAK	5	18
STRONG	1	4
VERY STRONG	1	4
NO COLLABORATION	18	64
Average	0,7	
Deviation	1,1	
PATENT/TECHNOLOGY LICENSING		
VERY WEAK	2	7
WEAK	6	21
STRONG	1	4
VERY STRONG	1	4
NO COLLABORATION	18	64
Average	0,8	
Deviation	1,2	
R&D INFORMATION SERVICES		
VERY WEAK	2	7
WEAK	8	29
STRONG	6	21
VERY STRONG	0	0
NO COLLABORATION	12	43
Average	1,3	
Deviation	1,2	

	Frequen-cies	Percent-ages
TOTAL	**28**	**100**
CAPITAL INVESTMENT		
VERY WEAK	1	4
WEAK	7	26
STRONG	2	7
VERY STRONG	1	4
NO COLLABORATION	16	57
Average	1,0	
Deviation	1,3	
SPONSORSHIP		
VERY WEAK	2	7
WEAK	5	18
STRONG	3	11
VERY STRONG	1	4
NO COLLABORATION	17	61
Average	1,0	
Deviation	1,3	
PARTICIPATION IN TTO EVENTS		
VERY WEAK	1	4
WEAK	7	25
STRONG	4	14
VERY STRONG	0	0
NO COLLABORATION	16	57
Average	1,0	
Deviation	1,2	
BUSINESS TROUBLESHOOTING		
VERY WEAK	6	22
WEAK	4	15
STRONG	3	11
VERY STRONG	0	0
NO COLLABORATION	14	52
Average	0,9	
Deviation	1,1	

	Frequen-cies	Percent-ages
TOTAL	**28**	**100**
TENDERS & JOINT TENDERING		
VERY WEAK	1	4
WEAK	6	21
STRONG	1	4
VERY STRONG	2	7
NO COLLABORATION	18	64
Average	0,9	
Deviation	1,3	
PUBLIC TENDER MANAGEMENT		
VERY WEAK	2	7
WEAK	5	18
STRONG	1	4
VERY STRONG	3	11
NO COLLABORATION	17	61
Average	1,0	
Deviation	1,4	

Table 43. Please, evaluate your company's collaboration with TTOs. By number of employees.

Chi-squared vertical %		NO. OF EMPLOYEES			
	TOTAL	< 10	11-50	51-250	> 250
TOTAL	**73**	**22**	**18**	**24**	**9**
	%	%	%	%	%
R&D COLLABORATION					
VERY WEAK	9	10	20	0	17
WEAK	22	0	0	27	**>67**
STRONG	38	**>60**	**>60**	27	0
VERY STRONG	13	10	0	18	17
NO COLLABORATION	19	20	20	27	0
PATENT-RELATED COLLABORATION					
VERY WEAK	9	0	0	18	17
WEAK	16	10	**>60**	9	0
STRONG	3	10	0	0	0
VERY STRONG	3	0	0	0	17
NO COLLABORATION	69	80	40	73	67
PATENT/TECHNOLOGY LICENSING					
VERY WEAK	6	0	0	18	0
WEAK	19	10	**>60**	9	17
STRONG	3	10	0	0	0
VERY STRONG	3	0	0	0	17
NO COLLABORATION	69	80	40	73	67
R&D INFORMATION SERVICES					
VERY WEAK	6	10	0	9	0
WEAK	25	10	40	27	33
STRONG	19	30	20	18	0
VERY STRONG	0	0	0	0	0
NO COLLABORATION	50	50	40	45	67
CAPITAL INVESTMENT					
VERY WEAK	3	0	0	9	0
WEAK	23	33	20	18	17
STRONG	6	22	0	0	0
VERY STRONG	3	0	0	0	17
NO COLLABORATION	65	44	80	73	67

Chi-squared vertical %		NO. OF EMPLOYEES			
	TOTAL	< 10	11-50	51-250	> 250
TOTAL	**73**	**22**	**18**	**24**	**9**
	%	%	%	%	%
SPONSORSHIP					
VERY WEAK	6	0	0	9	17
WEAK	16	10	20	18	17
STRONG	9	20	20	0	0
VERY STRONG	3	0	0	0	17
NO COLLABORATION	65	70	60	64	50
PARTICIPATION IN TTO EVENTS					
VERY WEAK	3	0	0	9	0
WEAK	22	10	40	27	17
STRONG	13	10	0	9	33
VERY STRONG	0	0	0	0	0
NO COLLABORATION	63	80	60	55	50
BUSINESS TROUBLESHOOTING					
VERY WEAK	19	10	20	20	33
WEAK	13	0	20	30	0
STRONG	10	**>30**	0	0	0
VERY STRONG	0	0	0	0	0
NO COLLABORATION	58	60	60	50	67
TENDERS & JOINT TENDERING					
VERY WEAK	3	0	0	9	0
WEAK	19	10	20	27	17
STRONG	3	10	0	0	0
VERY STRONG	6	0	20	0	17
NO COLLABORATION	69	80	60	64	67
PUBLIC TENDER MANAGEMENT					
VERY WEAK	6	0	0	18	0
WEAK	16	10	20	18	17
STRONG	3	10	0	0	0
VERY STRONG	9	0	**>40**	0	17
NO COLLABORATION	66	80	40	64	67

Table 44. Please, evaluate your company's collaboration with TTOs. By sector of activity.

Chi-squared vertical %	SECTORS						
	TOTAL	Agrifood food-stuffs	Electric & Elec-tronics	Au-tomo-tive	Chem-ical	Other indus-tries	Profes-fes-sional ser-vices
TOTAL	**73**	**11**	**9**	**6**	**5**	**12**	**17**
	%	%	%	%	%	%	%
R&D COLLABORATION							
VERY WEAK	9	20	25	0	0	0	10
WEAK	22	0	25	**>100**	**>100**	25	10
STRONG	38	**40**	0	0	0	25	**60**
VERY STRONG	13	**40**	25	0	0	25	0
NO COLLABORATION	19	0	25	0	0	25	20
PATENT-RELATED COL-LABORATION							
VERY WEAK	9	0	25	0	0	0	10
WEAK	16	20	0	0	0	0	20
STRONG	3	0	0	0	0	0	0
VERY STRONG	3	0	**>25**	0	0	0	0
NO COLLABORATION	69	80	50	100	100	100	70
PATENT/TECHNOLOGY LICENSING							
VERY WEAK	6	0	25	0	0	0	10
WEAK	19	20	0	0	0	0	20
STRONG	3	0	0	0	0	0	0
VERY STRONG	3	0	**>25**	0	0	0	0
NO COLLABORATION	69	80	50	100	100	100	70
R&D INFORMATION SERVICES							
VERY WEAK	6	0	0	0	0	0	20
WEAK	25	20	25	100	0	0	20
STRONG	19	20	0	0	0	25	20
VERY STRONG	0	0	0	0	0	0	0
NO COLLABORATION	50	60	75	0	100	75	40
CAPITAL INVESTMENT							
VERY WEAK	3	0	0	0	0	0	11
WEAK	23	40	25	0	0	0	22
STRONG	6	0	0	0	0	25	0
VERY STRONG	3	0	**>25**	0	0	0	0
NO COLLABORATION	65	60	50	100	100	75	67

Chi-squared vertical %		SECTORS					
	TOTAL	Agrifood food-stuffs	Electric & Elec-tronics	Au-tomo-tive	Chem-ical	Other indus-tries	Profes-fes-sional ser-vices
TOTAL	**73**	**11**	**9**	**6**	**5**	**12**	**17**
	%	%	%	%	%	%	%
SPONSORSHIP							
VERY WEAK	6	0	0	0	0	0	10
WEAK	16	20	25	**>100**	0	0	10
STRONG	9	0	0	0	0	0	20
VERY STRONG	3	0	**>25**	0	0	0	0
NO COLLABORATION	65	80	50	0	100	100	60
PARTICIPATION IN TTO EVENTS							
VERY WEAK	3	0	0	0	0	0	10
WEAK	22	40	25	0	0	0	20
STRONG	13	0	25	0	0	**>50**	10
VERY STRONG	0	0	0	0	0	0	0
NO COLLABORATION	63	60	50	100	100	50	60
BUSINESS TROUBLE-SHOOTING							
VERY WEAK	19	40	25	0	0	0	20
WEAK	13	20	25	0	0	0	0
STRONG	10	0	0	0	0	0	**>30**
VERY STRONG	0	0	0	0	0	0	0
NO COLLABORATION	58	40	50	100	100	100	50
TENDERS & JOINT TEN-DERING							
VERY WEAK	3	**>20**	0	0	0	0	0
WEAK	19	20	25	0	0	0	20
STRONG	3	0	0	0	0	0	10
VERY STRONG	6	0	25	0	0	0	0
NO COLLABORATION	69	60	50	100	100	100	70
PUBLIC TENDER MAN-AGEMENT							
VERY WEAK	6	20	0	0	0	0	10
WEAK	16	20	25	0	0	0	10
STRONG	3	0	0	0	0	0	10
VERY STRONG	9	0	25	0	0	0	10
NO COLLABORATION	66	60	50	100	100	100	60

CONCLUSIONS TO CHAPTER III.7.

- 40% of companies do not participate in R&D collaboration networks. The main collaboration network are business clusters (32%), followed by *sectoral technology centres* (21%), *technology platforms* (12%), *sectoral consortiums* (10%), *joint research groups* (8%) and *strategic cooperation in the field of R&D commercialization* (4%).

- Networking activities are less frequent in companies with less than 10 employees and in those in the metal & machinery and agrifoodstuffs sectors. On the other side of the scale, participation in clusters is more frequent in companies with more than 250 employees and in the automotive and chemical sector.

- As for collaboration with TTOs, 39% of companies cooperates with at least one of such offices, mostly with UPNA, who collaborates with 96% of companies participating in this type of collaboration (38% of the total number of companies participating in the survey). The next TTO in order of importance is the University of Navarre ("Universidad de Navarra"), collaborating with 21% of companies participating in this type of collaboration (8% of the total number of companies participating in the survey).

- Very small or very large companies tend to collaborate more with another TTO. By sectors, the agrifoodstuffs and professional services collaborate with such TTO to a larger extent.

- Companies collaborating with a TTO – mostly UPNA, believe that such collaboration is strong in *R&D* and weak or inexistent as regards other issues *patents, patent licensing, R&D information services, capital investment, sponsorship of TTO events* and *business troubleshooting*, *joint tendering* and *tender management*. Over half of companies cooperating with TTOs have no contact at all with them other than for *R&D* purposes.

- By company size, those with less than 50 employees have strong ties with TTOs for *R&D* collaboration purposes, while those with more than 250 employees have but weak ties.

- By sectors, companies in the agrifoodstuffs sector and in the professional services sector have strong relations with TTOs, while those in the automotive and chemical sectors are weak.

IV. CONCLUSIONS.

IV. CONCLUSIONS.

CONCLUSIONS TO CHAPTER III.1.

- The survey conducted in Spain under the EURIS-ORP Subproject consisted of 73 telephone interviews to officials from companies with previous collaboration ties with UPNA or having received aid for R&D programmes from public administrations.

- Surveys were conducted with heads of R&D departments (36%), managing directors or owners of the company (38%) or other senior members (26%), whether in charge of strategic development, production, quality or administration.

- The profile of interviewed companies accounts to a large extent for most part of the business fabric of Navarre: 33% of interviewed companies have between 51 and 250 employees, 25% has between 11 and 50 and 30% has less than 10. Companies with over 250 employees represent 12% of the sample.

- By sectors, industrial activities account for 77% of interviewed companies, mainly metal & machinery, agrifoodstuffs, electric & electronics, automotive and chemistry, whereas the remaining 23% belongs to the services sector (consultancy and engineering).

- Companies with less than 10 employees belong to a larger extent to the services sector.

- Of all interviewed companies, 18% belong to an international group of companies and 27% has several plants in the region.

- Obviously, it is larger companies who belong to international groups and those with over 50 employees have several plants.

- By sectors, companies in the automotive sector belong to a larger extent to an international group.

CONCLUSIONS TO CHAPTER III.2.

- Interviewed companies allocate around 6% of the total budget of the company to R&D activities. 92% actually have an R&D budget allocation.

- 18% of companies with less than 10 employees make no investments in R&D, but the percentage of companies whose R&D budget is above 10% of the total budget is higher than that of large companies.

- In companies with 11-250 employees the R&D budget accounts for a larger share of the total budget than in those with more than 250 employees.

- As regards R&D staff, 27% of companies allocate more than 10% of staff resources, 27% allocates 5-10% and 37% of them allocate less than 5% of staff to R&D. The strain in R&D staff in companies with 51-250 employees is higher – 71% of them allocate more than 5% of human resources to R&D, the average value being 8% of employees.

- By sectors, those allocating more staff to R&D are metal & machinery and electric electronics, where approximately half of them allocate more than 10% of employees to R&D, while half of automotive companies allocate less than 5%.

- R&D activities rely on well-trained employees (86%). Universities and R&D institutes rank second in terms of support to R&D (37%), while other companies rank third, with an average 23%. Further support activities involve university students (11%), conferences and expert forums (8%), publications (5%) and databases (4%).

- Although well-trained employees are the main support to R&D activities in all types of companies, companies with more than 250 employees use R&D institutes and universities to a larger extent than the rest (67%) and than other companies with 11-50 employees (28%).

- By sectors, metal & machinery, chemical and other industries make a wider use of R&D institutes and universities than the rest.

CONCLUSIONS TO CHAPTER III.3.

- 19% of companies do not use external resources to support innovation processes, 29% rely on *supporting organizations* (mostly UPNA), 18% on *databases* and 15% *industrial portals*. In addition, 33% rely on other resources, mainly *advanced technological centres*.

- By company size, there are no differences as regards regional *support organizations*, while *databases* are more widely used in companies with lower number of employees. Finally, *advanced technological centres* are more widely used by large companies by large companies.

- By sectors, *industrial portals* are more widely used by chemical companies and *advanced technological centres* are more widely used by electric & electronics and chemical companies.

- The type of information sought through external resources is *title or name of industrial or intellectual property, patent or trademark*, at a rate equal to that of *contact data*. *Full descriptions of protected property* is the type of information more sought by companies with more than 250 employees, while *information on costs associated to sale of property* is more sought by companies in the electric & electronics sector.

- Companies who do not use external resources amount to 14 (19% of the total), being mostly small companies in the agrifoodstuffs or professional services sectors. The main reason for not using such external resources is that they do not need them.

CONCLUSIONS TO CHAPTER III.4.

- 74% of interviewed companies have paid for external R&D resources or capabilities. The most frequent resource has been *staff training* (56% of companies paying for such resources), *collaboration with other companies* (24%) and *new business ideas* (17%). Finally, *involvement of customers* and *purchase of R&D equipments* concerns only 9% of them.

- By size, companies with less than 50 employees have paid for these resources to a larger extent than companies with 51-250 employees, who have paid for them to a larger extent (92%)x.

- 86% of companies with more than 250 employees have paid for *staff training*, while companies with less than 10 employees have paid more frequently for *collaboration with other companies*, and those with 11-50 employees have paid for *external experts*.

- By sectors, agrifoodstuffs companies have paid to a lower extent for external resources (55% of them). The type of resource is similar for all sectors, notably *training*, while *external experts* are used more frequently by metal & machinery companies, and *involvement of customers/suppliers* and *collaboration with other companies* by chemical companies.

- As for the advantages of using such resources for the company, 57% of companies having paid for them mentioned *launch of new products*, 44% of them mentioned *wider vision* and 37% mentioned *potential new markets*, although companies with more than 250 employees mentioned *new business process optimization ideas* (57%). In addition, machinery com-

panies propose as advantage *collaboration with other stakeholders*, professional service companies highlight the *increased acceptance of products or services in the market* and the automotive sector the *decreased time & cost of R&D processes*.

- Those companies who have not paid for external resources or capabilities have for their most part less than 50 employees and belong to the agrifoodstuffs and professional services sector, and most of them have not paid for such resources and capabilities on the grounds that they do not need them (79%). Companies with more than 250 employees (2) argue that they did not due to *lack of time* or *lack of information*, not because they felt no need to pay for them.

CONCLUSIONS TO CHAPTER III.5.

- Enhanced cooperation activities are carried out first with *clients/customers* and then, in descending order, with *suppliers, universities* and *regional governments*. Hence, 47% of companies have very strong cooperation ties with *clients/customers*, 44% of them with *suppliers*, 49% of them with *universities*, 41% of them with *public R&D institutes* and 48% of them with *regional governments*. These are followed by *central government departments & agencies* (30%), *business support organizations* (29%) and *competitors* (17%), with which they maintain strong bonds.

- Thus, average ratings (from 0=no contact to 4=very strong) are 2.4 for *clients/customers*, 2.2 with *suppliers*, 2.1 with *universities* and *regional governments* and 2.0 with *public R&D institutes*.

- The intensity of cooperation with *universities* decreases in small companies, as well as with *public R&D institutes*, while in companies with more than 250 employees contact becomes stronger with *universities* and fades with *business support organizations*.

- By sectors, the relationship between chemical companies and *providers* and *public R&D institutes* between and between professional service companies and *competitors* is quite intense, while that of professional service companies with *public R&D institutes* and that of automotive companies with *competitors* is weak.

- Companies obtain information on technology trends mostly from the Internet (73%), followed by *print media* (38%) and *events and trade fairs* (37%).

- Larger companies on the other hand consult with organizations or bodies.

CONCLUSIONS TO CHAPTER III.6.

- Companies obtain information on technology trends, new products and universities mainly from the *Internet*, followed by *print media* and *participation in events and trade fairs*.

- Hence, the *Internet* is the first means from which information is obtained on *technology trends* (73%), followed by *print media* (38%) and *participation in events and trade fairs* (37%). Large companies tend to rely mostly on *exhibits or innovation contests*, as well as on *consultancy services*.

- By sectors, the automotive sector prefers *print media*, while chemical companies opt for *consultancy services* and the metal & machinery sector choses first *university knowledge maps*.

- Information on *new products and services* is obtained first from the *Internet* (68%), followed by *participation in events and trade fairs* (36%) and *print media* (32%). Companies with more than 250 employees obtain substantial information from *consultancy services* and, by sectors, chemical companies rely most on *fairs and exhibits* and *print media* are ultimately the least used resource in the metal & machinery and electric & electronic sectors.

- Only 59% of respondents seek information on *university R&D activities*, which they do over the *Internet* (45% of total), followed quite far behind by *print media* (15%). The automotive sector also looks for information through *newsletters* and *business partners*.

- When questioned about how often they obtain information on *university activities*, 36% of respondents replied that they had no information on that respect. As for frequency, companies tend most frequently to obtain updated information on a biannual or annual basis.

- Companies obtaining information on *university activities* (43 of 73) feel satisfied about university research activities (65%), although 35% of them feel dissatisfied about it. Satisfaction rates increase when assessing *professional competence of researchers* (81%).

- Satisfaction levels among respondents regarding the information they obtain are the following: *R&D equipments and labs* (68%), *R&D services* (64%), *R&D results achieved* (62%), *planned R&D activities* (53%), *suitability of contact persons* (93%) and *TTO activities* (78%). As regards this last item (*TTO activities*), it is assessed only by 37% of companies, which reveals they are less aware about it.
- There are no major differences as regards company size, but values are slightly higher in companies with less than 50 employees, both on *university research*, *R&D services provided* and *R&D results achieved*.

- Ratings by sector are especially satisfactory, as follows: *university research* for metal & machinery companies, *R&D equipments and labs* for automotive companies, *R&D services* for agrifoodstuffs companies, *suitability of contact persons* for automotive and chemical companies and *TTO activities* for the professional services sector.

- The supply of information from universities in the region has led to *new partnership* opportunities for almost half of recipient companies (47%). This item is followed quite behind by *participation in training* (17%), *consultancy services* (15%) and use of *R&D equipments* (11%). Of the total of interviewed companies, 10% have used *consultancy services* and 7% have used *R&D equipments*. No substantial differences have been found as regards other variables.

- Finally, companies would like to receive information on R&D activities through *newsletters via e-mail* (86%), whereas other means lag quite behind: *homepage/website* (14%), *events & conferences* (12%) and *R&D reports* (11%).

- Companies with more than 250 employees would like to receive information through *newsletters via e-mail*, as well as through *university reports*. By sectors, the other industries sector would prefer to receive information on the occasion of *events & conferences*, while the automotive sector, in addition to *newsletters via e-mail*, would choose *brochures*.

CONCLUSIONS TO CHAPTER III.7.

- 40% of companies do not participate in R&D collaboration networks. The main collaboration network are business clusters (32%), followed by *sectoral technology centres* (21%), *technology platforms* (12%), *sectoral consortiums* (10%), *joint research groups* (8%) and *strategic cooperation in the field of R&D commercialization* (4%).

- Networking activities are less frequent in companies with less than 10 employees and in those in the metal & machinery and agrifoodstuffs sectors. On the other side of the scale, participation in clusters is more frequent in companies with more than 250 employees and in the automotive and chemical sector.

- As for collaboration with TTOs, 39% of companies cooperate with at least one of such offices, mostly with UPNA, who collaborates with 96% of companies participating in this type of collaboration (38% of the total number of companies participating in the survey). The next TTO in order of importance is the University of Navarre ("Universidad de Navarra"), collaborating with 21% of companies participating in this type of collaboration (8% of the total number of companies participating in the survey).

- Very small or very large companies tend to collaborate more with another TTO. By sectors, the agrifoodstuffs and professional services collaborate with such TTO to a larger extent.

- Companies collaborating with a TTO – mostly UPNA, believe that such collaboration is strong in *R&D* and weak or inexistent as regards other issues *patents, patent licensing, R&D information services, capital investment, sponsorship of TTO events* and *business troubleshooting*, *joint tendering* and *tender management*. Over half of companies cooperating with TTOs have no contact at all with them other than for *R&D* purposes.

- By company size, those with less than 50 employees have strong ties with TTOs for *R&D* collaboration purposes, while those with more than 250 employees have but weak ties.

- By sectors, companies in the agrifoodstuffs sector and in the professional services sector have strong relations with TTOs, while those in the automotive and chemical sectors are weak.