KOF Konjunkturforschungsstelle der ETH Swiss Institute for Business Cycle Research ETH-Zentrum, 8092 Zürich Telefon 01 / 632 42 39 Telefax 01 / 632 12 18

Knowledge and technology transfer between universities and the business sector in Switzerland

Survey of academic institutes

- All information provided will be handled in strictest confidence
- Unless otherwise specified, answers relate to locations in **Switzerland** only
- If anything is unclear, please consult the explanatory notes
- Please place a cross in the relevant field (
) or enter the appropriate figure
- The address for return is printed on the final page

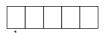
Please return the Survey by

31 March 2005

at the latest. (Please return the Survey even if you are unable to answer all the questions, or can only supply estimates.)

1. Information about your institute

1.1 Average number of **staff** at your institute (incl. director) during the year 2004 (part-time employees to be expressed as full-time equivalents):



1.2 At the end of 2004 the estimated breakdown into **categories** of employees, expressed as a proportion of total employment at your institute was as follows (part-time employees to be expressed as full-time equivalents):

Total staff	1 0 0
- Staff carrying out other supporting and administrative functions	%
- Technical staff with university degree	%
- Academic staff without doctorate	%
 Academic staff with doctorate and 'habilitation' 	%
- Professors	%

1.3 **Total budget** (including third-party funds) for your institute in the year 2004:



1.4 a) Share of third-party funds in your institute's total budget for 2004:



- b) What was the breakdown of third-party funds in 2004?
 - Proportion of third-party funds from business sector

1	0	0	%
36			
			%
33			
			%

 Proportion of funds from foundations for the promotion of research and similar (e.g. KTI/CTI, SNF)

Total third-party funds

1.5 What are the **focal areas of research** for your institute? (brief indications)

2. Teaching and research

2.1 Number of theses (at Swiss 'Diplom' level) completed in the three years 2002-2004:



Percentage of these theses conducted in collaboration with the business sector:



2.2 Number of postgraduate degrees (after Swiss 'Diplom') completed in the three years 2002-2004:

15	

2.3 Number of **doctoral dissertations** completed in the three years 2002-2004:

	1	
18		

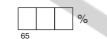
Percentage of these doctoral dissertations conducted in collaboration with the business sector:

		%
51		

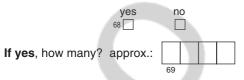
- 2.4 Number of research publications in the three years 2002-2004:
 - in academic journals
 - in magazines, newspapers etc.
- 2.5 Has your institute (or individual staff members) achieved research results that led to a patent application in the three years 2002-2004?



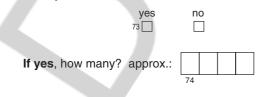
- If yes, how many? approx.
- Percentage of these patent applications achieved in collaboration with the business sector:



2.6 Did your institute give out licences in the three years 2002-2004?



2.7 Did your research results lead to spin-offs/start-ups in three years 2002-2004?



2.8 What percentage of the **working time** of academic staff in your institute is devoted to the following activities, on average (estimations if necessary):

Total working hours	100%
- other tasks	%
- more applied research	%
- basic research	%
- teaching	%

- 3. Forms of knowledge and technology transfer between institutes and the business sector, and channels used
- 3.1 Did your institute conduct activities designed to promote knowledge and technology transfer to Swiss companies

a) before 2002	yes 90 🗌	no
b) in the three years 2002-2004	yes 91 🗌	no

c) Were there any activities in 2002-2004 designed to promote knowledge and technology transfer to foreign companies outside Switzerland?

	yes no
If yes:	
93 🗌 EU	USA
95 🗌 Japan	Other countries:

Explanatory note:

business sector research

laboratories

Knowledge and technology transfer between academic institutes and the business sector should be understood as any activities aimed at transferring knowledge and technology that may help either the company or the academic institute - depending on the directing of transfer - to further its activities.

Knowledge and technology transfer covers a wide range of different activities. These are listed in question 3.2.

→ If the answer to a) and b) is no, please proceed to question 6 (obstacles).

3.2 What forms does knowledge and technology transfer between your institute and the business sector take, and how important are these forms for your institute (more than one answers possible)?

Informal contacts, personal network of contacts

 informal contacts (e.g. by phone, email) with employees from business sector for information exchange 	important	2	3	5 97
 attending business sector conferences, exhibitions, workshops etc. 				
 reading or quoting the academic publications of 				

importa	.rit		i	extremely mportant			
1	2	3	4	5			
				100			
Training, further education, staff mobility							
				102			
				104			
				108			
n 🗆							
				114			

3.3 How important are the following institutions in **mediating** formal contacts with the business sector?

	not importar	extremel			
 your university's technology transfer office 		2	3	4	5 []116
- the Swiss Innovation Promotion Agency (KTI/CTI)					
- the Swiss National Science Foundation (SNF)					9
- European Union (EU) Framework Programmes					
- other EU research programmes					
- other institutions, i.e					
How important are the following media for knowledge and technology transfer with the business sector?					

	not important				
- academic publications		2	3	4	5 121
- patents					
- licenses					
- spin-offs/start-ups					

4. Motivation and objectives for knowledge and technology transfer with the business sector

4.1 What is your **motivation** and what are your **objectives** in going into knowledge and technology transfer arrangements with private companies, and how important are they for the activities of your institute? (more than one answer possible)

Financial motives	not importai	nt			xtremely nportant
 cost savings in research projects 	1	2	3	4	5 125
 time savings in research projects 					
 resources for expanding basic research 					
 resources for extending research facilities 					
- commercial success					
 resources from business can be used more flexibly than public funding 					
 collaboration with business as a reference when applying for more public funding 					
 certain applied research projects can only be carried out in collaboration with 					

companies

3.4

Access to human capital, person-related knowledge ('tacit knowledge')

	not importar	nt			xtremely nportant	
 access to specific capabilities to supplement expertise within the institute 		2	3	4	5 []133	5.1
- new research impetus						
 exchange of ideas and expe- riences with industrial researche 	rs					
 practical experience for institute staff and/or students 						5.2
 gaining additional research insight in the institute's own area of research 						
Access to business sector rea ('codified knowledge')	search f	indin	igs			5.3
- patents, licenses						
 gaining knowledge about practical problems for curriculum 					139	
Access to business sector R&	kD facili	ties				
 access to business sector technological equipment or specialised technology 						5.4
 opportunity to test own research findings in practice 						
Institutional or organisational	motive	6				
Institutional or organisational	motive	S				6.
Institutional or organisational - securing good job prospects for students and/or institute staff in the business sector	motive	s			142	6. 1
 securing good job prospects for students and/or institute staff in the business sector securing the presence of business represen- tatives in the university's academic consultant 	motive	s			142	
 securing good job prospects for students and/or institute staff in the business sector securing the presence of business represen- tatives in the university's academic consultant bodies 		s				
 securing good job prospects for students and/or institute staff in the business sector securing the presence of business represen- tatives in the university's academic consultant 		s				
 securing good job prospects for students and/or institute staff in the business sector securing the presence of business represen- tatives in the university's academic consultant bodies extending the university's mission promoting the diffusion of a 						
 securing good job prospects for students and/or institute staff in the business sector securing the presence of business represen- tatives in the university's academic consultant bodies extending the university's mission promoting the diffusion of a particular technology diffusing key R&D findings 						
 securing good job prospects for students and/or institute staff in the business sector securing the presence of business represen- tatives in the university's academic consultant bodies extending the university's mission promoting the diffusion of a particular technology diffusing key R&D findings amongst the public promoting regional 						
 securing good job prospects for students and/or institute staff in the business sector securing the presence of business represen- tatives in the university's academic consultant bodies extending the university's mission promoting the diffusion of a particular technology diffusing key R&D findings amongst the public promoting regional development improving the image 						
 securing good job prospects for students and/or institute staff in the business sector securing the presence of business represen- tatives in the university's academic consultant bodies extending the university's mission promoting the diffusion of a particular technology diffusing key R&D findings amongst the public promoting regional development improving the image of science 						
 securing good job prospects for students and/or institute staff in the business sector securing the presence of business represen- tatives in the university's academic consultant bodies extending the university's mission promoting the diffusion of a particular technology diffusing key R&D findings amongst the public promoting regional development improving the image of science 						

5.	Impact of knowledge transfer with the busin								
5.1	Has the financial position of yo result of the knowledge and tec								
	- no change		149						
	- additional resources for resea	arch							
	- additional resources for teach	U U							
	 additional resources for techn facilities 	nical							
5.2	Has the research orientation of a result of the knowledge and t								
	- no change		153						
	- more geared to applied resea	arch							
	- more geared to basic researc	ch							
5.3	Has the knowledge and technolo further education or further training		•						
	- no impact		156						
	 education provided is more geared towards practice 								
	 less time available for teachin support 	ng and stude	nt 🗆						
5.4	Has the scientific reputation of result of the knowledge and tec								
	- no change		159						
	- better reputation								
	- worse reputation								
6.	Obstacles to knowledge transfer with the busin	-							
6.1	What obstacles prevent knowledge and technology transfer with business companies and/or what obstacles prevent your institute from intensifying the process of knowledge and technology transfer? (more than one answer possible)								
	Lack of information	not important	extremely important						
		1 2	3 4 5						

- difficult to get informed about research activities in the business sector (confidentiality)
- difficult to find an appropriate partner in the business sector
- interface to the business sector poorly equipped (e.g. technology transfer offices lack capacity)

165

- teaching requires too much time
- scientific independence impaired
- hindrance to academic publication activities
- neglecting basic research

Necessary conditions for transfe					ng	Organisational, institutional obst	acles				
amongst potential partners in th	not extremely				extremely		not important			extremely importan	
	importa	nt 2	3	i 4	mportant 5	- resource-intensive administrative	1	2	3	4	5 [] 18
 lack of qualified staff on the part of companies 					169	and approval procedures, legal restrictions					
 lack of technical facilities on the part of companies 						 lack of project administration support on the part of the 					
 lack of interest in scientific projects on the part of companies 						academic institution (e.g. through technology transfer offices)	_				
 insufficient interesting research questions in the business sector for our institute 						 lack of support for the commercialisation of research findings on the part of the academic institution 					
Necessary conditions for transfe in our institute	er of k	now-l	how l	ackii	ng	- Property Rights problems					
 lack of academic specialists for knowledge and technology transfer (capacity) 					173	- project management problems on the part of the academic institution (e.g.					
 approach of institute staff not entrepreneurial enough 						coordination or com- munications problems)					
 our research focus is not interesting enough for the industry sector 						 different views on urgency with regard to the scheduling of projects 					
 no possibility of commercialising our research findings 						- lack of confidence					
Costs, risks, uncertainty						 risk of putting a reputation at stake 					1
- uncertainty about R&D results					177	- other obstacles, i.e					
 industry has different ideas on costs and/or productivity 											
 R&D budgets of potential business partners are too low 											
	**	* Th	ank	you	for you	r valuable assistance ***					
						Phone no:					
Position:						E-mail:					
-	→ P	lease	prov	ide yo	our E-Mail	in order to send you the report					
Comments on the questionnaire	•										
Contacts at KOF, ETH Zurich		C	lirect	phon	e	E-mail					
Dr. S. Arvanitis		(01/632	2 51 6	68	arvanitis@kof.gess.ethz.ch					
Ms U. Kubli Dr. M. Wörter Office		()1/632)1/632)1/632	2 51 5	51	kubli@kof.gess.ethz.ch woerter@kof.gess.ethz.ch					
						5					

Konjunkturforschungsstelle der ETH Zürich Umfrage "Wissenstransfer" ETH Zentrum WEH 8092 Zürich

Return address (for window envelope):