

Technology Transfer Society (T2S) Meeting

University of Augsburg, Germany (Bavaria)

Thursday, September 22, 2011



Knowledge and Technology Transfer Practices in Europe: First Results from a Study on 39 Countries

Franz Barjak, University of Applied
Sciences Northwestern Switzerland,
Solothurn

Anthony Arundel, Nordine Es-Sadki,
UNU-MERIT, Maastricht

Tobias Hüsing, empirica GmbH, Bonn

A study on behalf of the

European Commission
Research & Innovation



Knowledge Transfer Study overview

- **Objective**

- support monitoring and reporting of EC's Recommendation on the Management of Intellectual Property in KT and Code of Practice

- **Duration**

- 9/2010 – 3/2013

- **Team**

- empirica (Bonn), UASNWCH (Olten), UNU-MERIT (Maastricht)

- **Work packages**

- WP 1, policy survey
- WP 2, PRO performance survey
- WP 3, CoP implementation surveys
- WP 4, workshops

Code of Practice for universities and other PROs concerning the management of IP in knowledge transfers



(http://ec.europa.eu/invest-in-research/pdf/download_en/ip_recommendation.pdf)



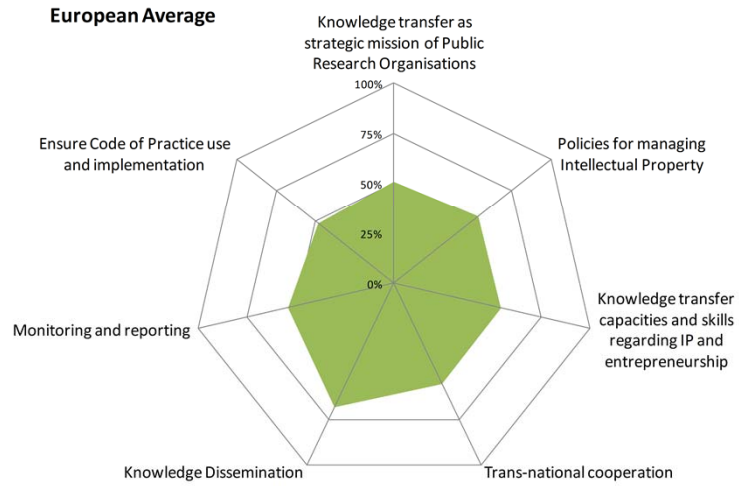
1. 7 Principles for an internal intellectual property policy
 - Provide incentives not only of a financial nature but also by considering IP and KT aspects in appraisal procedures (#4)
2. 7 Principles for a knowledge transfer policy
 - Generating additional revenues should not be considered the prime objective of IP/KT policy (#9)
 - Establish clear principles regarding the sharing of financial returns from knowledge transfer revenues (#13)
3. 4 Principles for collaborative and contract research
 - Ownership, access rights and sharing of returns for foreground and background IP resulting from research should be clarified at management level and as early as possible (#16)



WP 1: Policy survey 2010/11

- **Objective**
 - Monitor KT policies and implementation of the Recommendation in 39 European countries
- **Data collection**
 - Data from 28 countries in 2010 survey by DG RTD / ERAC WG-KT
 - Additional data from 5 countries
- **Analysis**
 - Categorization and classification of the data into 7 groups
 - KT as strategic mission
 - Policies for managing IP
 - Capacities and skills regarding IP/entrepreneurship
 - Trans-national cooperation
 - Knowledge dissemination
 - Monitoring and reporting
 - Ensure use and implementation of COP
 - Comparison of policies at country level

WP 1: Policy survey – Recommendation implementation





WP 1: Policy survey findings

- **Key findings:**
 - National policies vary significantly
 - Comprehensive policies found in some of the largest EU countries (UK, DE, FR, ES), Nordic countries, but also SI, MT, LU, TK, LT
 - Non-comprehensive policies in non-MS with very good KT performance, e.g. CH, IS, IL (many Recommendation items do not apply)
 - ▶ assessments influenced by quality of response
 - Major KT legislation changes and support activities in many countries in past 10 years
- **2012 survey:**
 - Preparations starting soon
 - Possibly additional quantitative indicators (e.g. TTO funding), specific new items

WP 2: PRO performance survey 2011



- **Objectives:**

- PRO KTO surveys amongst 39 countries to
 - Obtain internationally comparable indicators of KT activities by the leading European public research organisations
 - The number of selected organisations in each country is weighted by the national share of the total government R&D expenditures in the 39 countries, although there is a minimum of one institute or university per country.

- **Data basis 2010:**

- KTO survey: Sample size 705, 369 replies from 35 countries (response rate 52.34%)
- 55 reported no KT activities
- Added 60 UK institutions (from HEFCE survey)
- Eligible sample of 374 for analysis

No response received from Malta, Macedonia, Albania and Montenegro

Response rates by country



Country	Response rate	Country	Response rate
Albania	0.00%	Liechtenstein	100.00%
Austria	55.56%	Lithuania	100.00%
Belgium	55.00%	Luxembourg	50.00%
Bosnia-Herzegovina	66.67%	Macedonia	0.00%
Bulgaria	75.00%	Malta	0.00%
Croatia	100.00%	Montenegro	0.00%
Cyprus	100.00%	Netherlands	82.61%
Czech Republic	75.00%	Norway	23.53%
Denmark	87.50%	Poland	28.57%
Estonia	100.00%	Portugal	46.67%
Finland	50.00%	Romania	40.00%
France	40.43%	Serbia	100.00%
Germany	63.20%	Slovak Republic	100.00%
Greece	66.67%	Slovenia	100.00%
Hungary	62.50%	Spain	56.86%
Iceland	50.00%	Sweden	57.14%
Ireland	64.29%	Switzerland	54.84%
Israel	46.67%	Turkey	28.00%
Italy	48.28%	United Kingdom	36.84%
Latvia	66.67%	Total	52.34%

Performance per 1,000 research staff in 2010 *(preliminary results)*



	Universities (314)	Other research organisations (60)	Total (374)
Invention disclosures	17.72	12.77	16.66
Patent applications	8.56	11.24	9.13
Patent grants	3.89	10.81	5.37
USTPO patent grants*	0.43	1.96	0.76
Start-ups established	1.67	0.58	1.44
License agreements	8.75	5.68	8.09
License income (million €)	0.38	1.01	0.51
Research agreements	69.26	25.37	59.87

Limited to institutions that gave both outcome results (e.g. invention disclosures and number of researchers)

* Data obtained from the HE-BCI (HEFCE) survey does not include this variable.

Performance by research expenditures in 2010 *(preliminary results)*



- A comparison with US performance
- Number per one million USD research expenditures

	Universities (EU)	Other research organisations (EU)	Total (EU)	AUTM FY 2009 (US)
Invention disclosures	0.375	0.135	0.290	0.380
Patent applications	0.181	0.118	0.159	0.181
Patent grants	0.082	0.114	0.093	0.064
USTPO patent grants*	0.009	0.021	0.013	NA
Start-ups established	0.035	0.006	0.025	0.011
License agreements	0.185	0.060	0.141	0.100
License income	0.014	0.018	0.015	0.043
Research agreements	1.465	0.267	1.042	NA
Number of institutions surveyed	314	60	374	181

Limited to institutions that gave both outcome results (e.g. invention disclosures and researcher expenditures) .
 Data for the EU stems from the EU 27 and the 12 Associate Countries. Data for the US stems from the AUTM
 2009 (Fiscal Year) survey. * The data obtained from the HE-BCI (HEFCE) survey does not include this variable.

Data interpretation: e.g. 0.290 invention disclosures implies that one million USD on research expenditures produces 0.29 invention disclosures in Europe and the 12 Associated Countries.

WP 3: Implementation and impact of the Code of Practice 2011



- **Objectives:**

- PRO KTO surveys (samples nested with WP 2) to
 - Analyse the degree of use of the principles of the COP
 - Analyse the impact of the COP and other codes on the status-quo and evolution of practices in PROs
- Interviews to:
 - Assess drivers and barriers to KT in PROs and companies

- **Data basis 2011:**

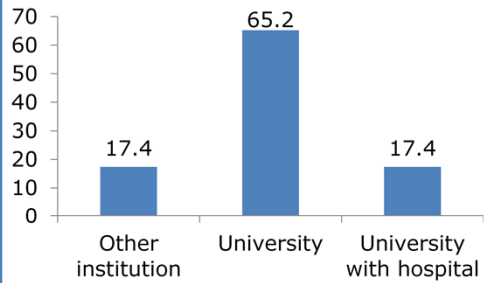
- KTO survey: Sample 201 with 94 usable responses from 24 countries
- Interviews: 54 interviews with companies from R&D-intensive sectors in 18 countries

Usable responses by country

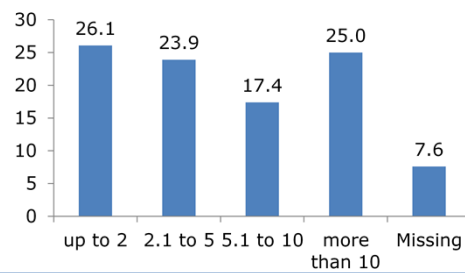
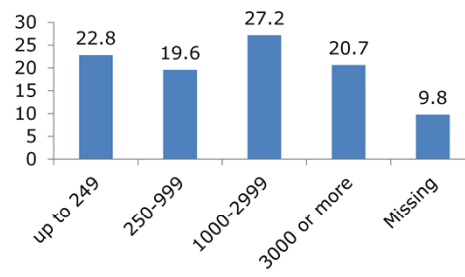


Country	Responses in %	Country	Responses in %
Albania	n/a	Liechtenstein	n/a
Austria	66.7	Lithuania	n/a
Belgium	40.0	Luxembourg	n/a
Bosnia-Herzegovina	0.0	Macedonia	n/a
Bulgaria	0.0	Malta	n/a
Croatia	0.0	Montenegro	n/a
Cyprus	n/a	Netherlands	25.0
Czech Republic	50.0	Norway	66.7
Denmark	100.0	Poland	0.0
Estonia	n/a	Portugal	n/a
Finland	60.0	Romania	100.0
France	30.0	Serbia	n/a
Germany	45.5	Slovak Republic	100.0
Greece	66.7	Slovenia	100.0
Hungary	100.0	Spain	41.2
Iceland	100.0	Sweden	50.0
Ireland	66.7	Switzerland	54.5
Israel	75.0	Turkey	50.0
Italy	37.5	United Kingdom	36.0
Latvia	100.0	Total	48.3

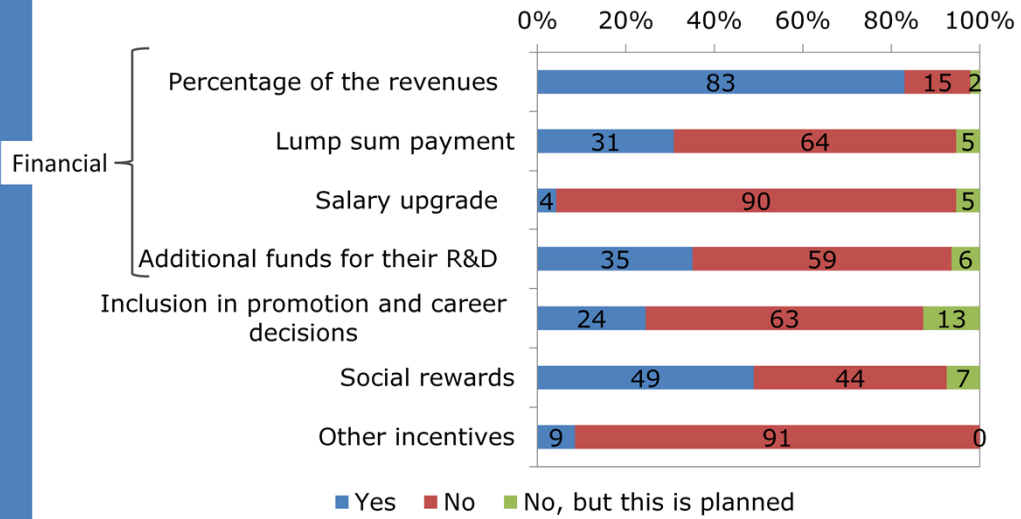
Structural characteristics of the 94 replying KTOs



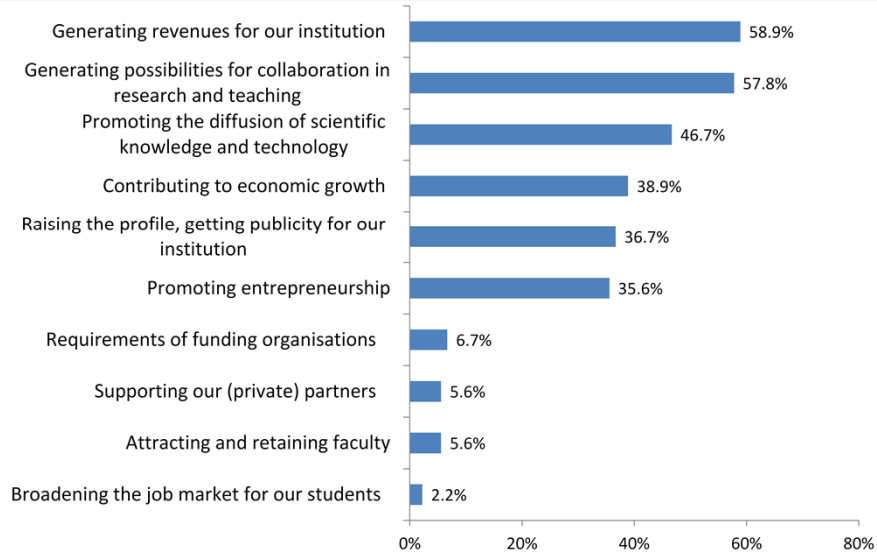
- a) Responses by type of PRO
- b) Responses by size of PRO
- c) Responses by size of KTO (staff FTE)



Financial incentives for inventors prevail



Generating revenues is the most important objective of IP/exploitation policies

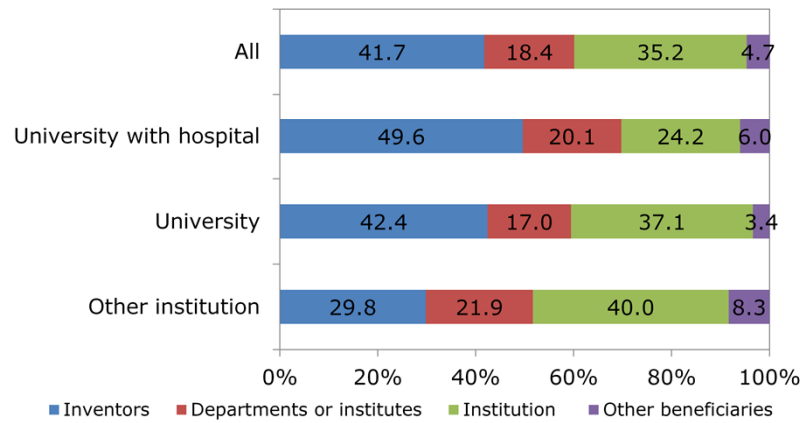




Models for the sharing of returns are common



- 75% of responding PROs have written principles
- 70% deduct expenses before sharing revenues





Further information

franz.barjak@fhnw.ch
<http://www.knowledge-transfer-study.eu>

Meet us at a workshop in:

- Rome, 30 September 2011
- Warsaw, early Nov 2011
- Paris, 8 November 2011
- Porto, 14 Nov 2011
- Prague, March 2012
- Sofia, spring 2012
- Istanbul, spring 2012
- Nicosia, September 2012
- Belgrade, autumn 2012