



Knowledge Transfer Study

2010–2012

<http://www.knowledge-transfer-study.eu>

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Expert workshop

Knowledge Transfer from Universities and Public Research Institutes: Developing Strategies, Capacities and Skills

Nicosia, University of Cyprus, 3 September 2012

Summary

Background

This workshop supported the implementation of the European Commission's 2008 Recommendation on the management of intellectual property (IP) in knowledge transfer (KT) activities and Code of Practice for universities and public research organisations (http://ec.europa.eu/invest-in-research/pdf/ip_recommendation_de.pdf). The event was part of a workshop series covering 39 European countries in 2011 and 2012.

Attendants

The workshop convened 25 stakeholders active in knowledge transfer, in particular from universities, public research organisations, knowledge transfer agencies, policy and industry. Attendance was by invitation only. See a list of attendees in the Annex.

Presentations

This summary includes the main points of the discussion and goes beyond what is included in the presentation files. The presentation files can be viewed and downloaded at <http://knowledge-transfer-study.eu/norm/workshops/east-mediterranean/>.

Main results

The countries represented provided a specific background for KT developments. Israel is fairly far developed in KT activities; the situation in Greece is characterised by the very difficult economic situation; Cyprus is beginning to develop a KT infrastructure.

In **Cyprus**, industry liaison offices are set up at universities to foster academia-industry collaboration. Among other issues, they will support student internships and placement of graduates in Cyprian businesses. IP management may develop as a side effect. While there is considerable quality research, KT challenges include a lack of know-how, entrepreneurial culture, spin-off legislation, seed funds, and a larger internal market.

In **Greece**, KT does currently not play an important role because many PROs and enterprises are striving for survival and do not consider KT as vital. While there was support for KTOs at universities and other PROs, they have failed to produce tangible results. Governmental KT policies and incentives were not persistently monitored and evaluated. KT is rather taking place despite policies than due to them.

In **Israel** every university has a KTO and they are considered as companies seeking to make profit. There are governmental programmes supporting KT. The "Magnet" programme encourages academia and industry to work together. Magnet forms and funds consortia similar to those under Framework Programme 7.

About the Knowledge Transfer Study 2010-2012



The "Knowledge Transfer Study" (monitoring study regarding the implementation of the Commission Recommendation and Code of Practice on the management of intellectual property in knowledge transfer activities in Member States and Associated Countries) is based on a Contract (No. RTD/Dir C/C2/2010/SI2.569045) between the European Commission, Research Directorate General, and empirica GmbH, the Maastricht Economic Research Institute on Innovation and Technology, and the School of Business of the University of Applied Sciences North-Western Switzerland.



Joint sessions with EastWest conference

1 2Be Connected: University Liaising with Enterprises: Good practices

Chairs: Dr Gregory Makrides, Director of Research and International Relations / E. Zomeni, both University of Cyprus

"2Be Connected" (<http://www.liaisonoffices.ac.cy>) is a large European Social Fund Project in which all Cypriot universities – three public and three private – participate in a consortium. The project started in 2009 and is expected to be completed in mid-2015. It is coordinated by the University of Cyprus, the main public university in Cyprus. Connections between universities and industry in research and training are currently limited in Cyprus. Against this background, the project's aim is fostering closer links with industry for collaborative projects, upgrading of industrial research interest and infrastructure as well as supporting young researchers' placements and internships in industry. The project also aims at improving the adaptability of businesses and employees to a changing market environment. This is expected to support the restructuring of industry and academia for future labour market challenges, and to support the development of innovative methods of structuring business and employment practices at the national level.

3.1 million euro has been invested for the duration of the project in order to support knowledge transfer activities that are in line with the Europe 2020 Innovation Union initiative. Key priorities are the realisation of benefits for business through academic research results, maximisation of opportunities for the employment of students and graduates, cross-national agreements and partnerships with universities in Europe, exploitation of research results by Cypriot businesses, and the encouragement of further research.

The project will develop a tool box for industry liaison offices. Operational activity has been in place for more than one year in one university, for the other five since March 2012. Intellectual Property (IP) frameworks for universities are not yet in place but are currently being discussed.

Presentations by universities involved in the 2BE Connected project

- C.U.T. industry liaison office - accomplishments and areas of expertise: George Kokou, Cyprus University of Technology (Limassol, Cyprus)
- The operation of an industry liaison office at the Open University of Cyprus: Elena Gregoriou, Michalis Savva, Anna Dalosi, Maria Kali, Open University of Cyprus (Nicosia, Cyprus)
- European university-industry liaison office: Maria Gallou, European University of Cyprus (Nicosia, Cyprus)
- PRAXIS: European centre for project/internship excellence: Nuno Filipe Escudeiro / Paula Maria Escudeiro, Instituto Superior de Engenharia do Instituto Politécnico do Porto (Porto, Portugal)
- A novel perspective of academic entrepreneurship: Vered Holzmann and Gady Golan, Holon Institute of Technology (HIT) (Holon, Israel)

The presentations made clear that it is very difficult for graduates from universities in Cyprus to find employment in private business. Hence the principal focus of the six universities within the 2Be Connected project is developing business liaison opportunities



for the benefit of student and graduate placement. However, KT and IP management also plays a role in the project. Currently, the project managers are discovering the wants and needs of business in meetings and workshops, subsequently developing a related database.

Knowledge Transfer Study workshop

2 Welcome and introduction

Alessandra Luchetti, Head of Unit "People programme, Marie Curie actions", General Directorate Education and Culture, European Commission

The main issue addressed by the Commission Recommendation on the management of intellectual property (IP) in knowledge transfer (KT) and Code of Practice for universities and other public research organisations (PROs) is the need to improve competitiveness in the European knowledge-based economy. In order to address this challenge better, more pervasive commercial exploitation of all forms of IP is required. This can be achieved through professional management of IP at universities and other PROs, more and better cooperation between universities and industry and more granting and generating of licenses, also to spin-offs. Overall, the means to address the challenge is increasing research and innovation to meet current social challenges.

Recent developments in this area on the EU level include the ERA Green Paper 2007, the Commission Communication on Knowledge Transfer in 2007, the IP Charta Initiative of German EU Presidency in 2007, the Commission Recommendation on Knowledge Transfer and Code of Practice in 2008, the Resolution of the Council on the Recommendation, May 2008, the Commission Communication on the Innovation Union in 2010, and the ERA Communication in 2012.

The goal of the Recommendation and Code of Practice is promotion and improvement of KT between universities and other PROs and industry as well as better consistency between national KT systems. This goal is addressed in the Recommendation by policy recommendations for governments, an internal code of conduct for universities and other PROs and identified practices that facilitate the management of IP in KT.

Recommendations to Member States include: ensuring that KT is designated as a strategic task in PROs, encouraging research facilities to lay down guidelines and procedures for the management of IP, promoting the dissemination of KT through public funding, improving the coherence of IPRs, using outlined principles as a basis for agreements on research cooperation with third countries, ensuring the widest possible implementation of the Code of Practice and ensuring equal and fair treatment of participants from other countries. The Code of Practice describes the principles required for an internal policy on IP, a KT policy and collaborative and contract research.

Following the issuing of the Recommendation, activities were undertaken to support it. A working group in KT was established under the European Research Area Committee (ERAC) with sub-groups on indicators and international aspects. In order to support ERAC the Knowledge Transfer Study 2010-2012 was launched.

The study aims to monitor implementation of the Recommendation and to gain an overview of the current KT situation within Europe. It does this by surveying Member States and Associated States on governmental policies to promote KT; collecting data on the performance of KTOs with indicators such as patents and licenses, collaboration with industry and spin-offs; conducting a survey and interviews with universities and companies about the implementation of the Code of Practice; and conducting workshops



in order to gain an in-depth understanding of regional or national situations with regards to KT.

3 Research findings

3.1 Findings from knowledge transfer office surveys

Presentation Nordine Es-Sadki, United Nations University, Maastricht Economic Research Institute on Innovation and Technology (UNU-MERIT)

Research and development (R&D) is vitally important for innovation and consequently for improving productivity and quality of life. A substantial share of research in the public sector has immediate or potential commercial value. The business sector accounts for the majority of investments in R&D, but the public sector also accounts for a significant share of all R&D investments: 37.6% of total R&D expenditure in the European Union (EU) in 2009. Most business R&D takes place in sectors such as health applications, energy and chemistry.

For several decades, the goal of many governments has been to improve KT from the public research sector to private firms. However, KT occurs through many channels and is often not easy to measure. To encourage and support KT activities many PROs have established Knowledge Transfer Offices (KTOs) that can provide professional advice. KTOs also assess the patentability of inventions, interact with firms and provide licensing expertise.

These KTOs collect data that can be used to construct indicators for the KT activities of the PROs that they serve. This is valuable not only for the KTOs themselves but also for policy to support KT. Both groups can use this information to benchmark KT activities and track progress. The recognition of the value of such data has led to efforts by associations of technology managers, such as ASTP and ProTon in Europe and AUTM in the United States to survey their members to collect relevant data. The AUTM surveys found that public R&D is highly concentrated. In the US, approximately 100 leading universities out of a total of 2,500 PROs account for 90% of all Federal Government funding.

Unfortunately none of the European surveys were able to obtain responses from the leading PROs. Reasons for this are: ProTon will only serve its own members, the EU lags behind the US in establishing KTOs and the EU lacks a complete list of an estimated 3,500 tertiary education institutes with information on the types of activities performed.

The goal of the Knowledge Transfer Study (KTS) survey is to survey KTOs over a two year period (2010-2011) in each of the 27 EU Member States and in twelve Associated States. The main objective is to obtain internationally comparable indicators of KT activities by the leading European PROs. The number of PROs surveyed per country is based on the share of the total expenditures of government on higher education R&D in the 39 countries.

There are already many different surveys in the EU, and the KTS tries to obtain as many results as possible from other sources. However, it is often unable to obtain comparable data in a timely manner due to confidentiality and other restrictions. Nevertheless, other data sources have been used and collaborations have been established with national associations of technology managers in Spain (RedOTRI), Portugal (UTEN), France (CURIE) Denmark (TechTrans), United Kingdom (HEFCE) and ASTP. However, the difficulty in using other surveys is that the questions used are not identical.

The KTS has published the largest dataset in the field. The data basis for 2010 included replies from 402 out of 705 KTOs, a response rate of 57%. Only 71 PROs were not eligible for analysis. Added to this were results for 60 PROs from the HEFCE survey for the UK, and results for 39 PROs from the RedOtri survey for Spain. In total 430 PROs were



analysed. The data basis for 2011 included replies from 386 out of 747 KTOs, a response rate of 52%. Only 61 PROs were not eligible for analysis. In the upcoming months additional results are expected for the UK, Spain, France, Portugal and Denmark. The presentation today is based on results for 325 PROs.

Concerning performance per 1,000 research staff across the EU, universities produced on average 15.2 invention disclosures per 1,000 full-time equivalent (FTE) research staff in 2011. For license income, universities earned on average 800,000 euro per 1,000 researchers in 2011 or approximately 800 euro per research staff. East Mediterranean countries perform well in general although results suggest that there is room for improvement when it comes to commercialising research for example through start-ups, licenses and R&D agreements.

In terms of the millions of euro required per output, US PROs outperforms EU PROs on almost all indicators except for start-ups. On average in 2011 it cost European universities 4 million euro of research expenditures to produce one invention disclosure. American PROs require on average €3.7 million of research expenditures to produce one patent application, while European PROs require €7.9 million to produce one patent application. Conversely, European performance exceeds that of the US for patent grants, the number of start-ups and the number of license agreements. It was not possible to produce results for East Mediterranean countries as there are insufficient answers from PROs regarding research expenditure; only three cases out of ten.

In general EU and East Mediterranean research staff output performance has improved between 2010 and 2011. In a panel data set of 191 PROs, 160 generally performed better in 2011 except for in the output of successful start-ups and license agreements.

Regarding the role of the KTO on performance it was discovered through regression analysis based on 2010 data that the number of KT staff plays a very important role. This is perhaps due to the diversity of skills in larger offices and extra time to evaluate the commercial feasibility of inventions, or for outreach actions to identify inventions which can occur with more staff. This is a strong argument for supporting well-funded KT offices with experienced KT staff knowledgeable about business. The East Mediterranean average for the number of staff per KTO is 4.5 versus an EU average of 8.2.

Discussion

One participant asked whether there will be a qualitative analysis such as case studies or best practices included in the study. The answer is that qualitative interviews were also conducted within the study; they will be presented in the final report.

Another participant commented that it may be misleading to give average results as these are not objective. Size matters in terms of countries' KT output. When, for instance, comparing East Mediterranean countries to Scandinavian countries the East Mediterranean countries will always appear worse.

3.2 Insights from the policy survey and expert workshops

Presentation Stefan Lilischkis, Knowledge Transfer Study Manager, empirica GmbH

In the framework of the Knowledge Transfer Study, empirica conducted the "**European Knowledge Transfer Policy Survey 2012**". The objective was to collect information about KT policies and implementation of EC's KT Recommendation in 39 European countries. Information was collected from national members of KT Working Group of the European Research Area Committee. The members received a questionnaire asking to report about new KT policies since 2010 and to indicate which type of KT policy measures are in place in the country. The study team then translated the answers about national KT policy measures ("yes", "no", "planned") into a scoreboard.



Preliminary key findings include that **national policies vary significantly in scope and depth**; each country has its own specific KT policy profile. Comprehensive policies were found e.g. in some of the largest EU countries (UK, DE, FR, ES), in some Nordic countries, but also in Austria and Poland. East Mediterranean countries were not found to be among the top performers – there is scope for improvement particularly in supporting KT strategy development at universities and other PROs and in KT performance monitoring.

So far the Knowledge Transfer Study conducted **14 workshops covering 38 countries**. Altogether more than 650 participants attended the workshops. The objectives of the workshops are monitoring the status of Recommendation implementation, good practice presentation, identifying country-specific and emerging KT issues, and offering a forum for discussion. Targeted participants are affiliated with universities, other PROs, KT intermediaries, government, and business. Overall, the study team found that there is increasing importance of KT and IP management in Europe at political level and at the level of universities and PROs. Among the principal issues discussed are KT strategy, KT operations, KT capacities and skills, and KT organisation.

As regards the level of **strategy development**, the workshops revealed that there is much room for improvement even in advanced countries. Prevention of IP loss – i.e. KT without adequate compensation to the PRO – was only discussed at the German WS. Enterprises increasingly ask for “strong IP”, i.e. IP portfolios and “patent families”, which are however rarely found. The importance of KT through people – versus patenting, licensing, and spin-offs – was particularly stressed in economically less wealthy countries. “Easy Access IP” was presented as an exemplary KT strategy developed by the University of Glasgow in Scotland. The objective is that the university focuses on commercialising high-potential IP, while fostering use of other IP for the benefit of society and economy through “Easy Access”.

As regards **KT operations**, the workshops showed that national KT support programmes can be positive for KTO performance. However, sustainability is difficult as the examples of the uni:invent programme in Austria and a KT support programme in Hungary showed. Model contracts were mainly assessed as positive by workshop participants. However, it was often stressed that they provide only guidelines. Furthermore, deal making support services may be worth considering, but they may further complicate negotiations.

Enhancing PROs’ **KT capacity and skills** was found to be an issue in all countries; KTO sustainability was often found to be problematic. Developing KT and IP awareness among researchers was found to be an issue also in more advanced countries. As regards KT standardisation, there are three initiatives for KT professional certification in Europe – by EUKTS, ATTP, and Certified Licensing Professionals – which may need to align. Sometimes it was also mentioned that companies’ IP capacity and skills may also be limited. For example, unclear responsibilities within companies may hamper interaction between universities and companies.

As regards **KT organisation**, a preliminary conclusion is that PROs should be able to pursue different KT strategies and operations, tailor-made to their specific profile and regional environment. This also implies that they should decide themselves about (de-)centralisation of KT services with respect to fulfilling researchers’ needs best.

Preliminary conclusions from the workshops include that European countries and **universities may benefit from more detailed KT guidelines** from the European Commission beyond the EC’s Recommendation. A Green or White Paper on KT strategies and procedures may be of help. For enhancing KT capacities and skills, a KT good practice manual, a “KT Europe Network” and further specific thematic workshops may be worthwhile.



Discussion

The discussion revolved largely around the “Easy Access IP” strategy. One participant stated that commercialisation may be too expensive to the university that is the costs for commercialisation are too high relative to the benefit. Patenting and gaining access to research findings are expensive exercises and there are not enough funds available for commercialising research findings. So it may be one solution for universities to give access rights for free in order to reduce the costs required for commercialisation.

Another participant advised that industry should be interested in protected knowledge not unprotected knowledge. There are grants available for patenting to help overcome the costs. It is expected that universities patent first and then try to commercialise. Korea was provided as an example where universities give protected knowledge to small and medium-sized enterprises (SMEs) free of charge in exchange for tax exemptions from the government. Unprotected knowledge is worth nothing as anyone can copy it.

Another participant raised an example from Brazil where knowledge was provided by the university not for commercialisation purposes but as a trade secret. Then businesses could use the knowledge to uniquely improve their business systems. Whereas, on the other hand, if one patents something then it is only secret for 18 months and other entities can still use that knowledge to some extent before the patent expires after 20 years and everybody can gain access to the knowledge. A patent is only one means of protecting knowledge. Knowledge is everything you know and if does not share this knowledge and keep it a secret one is also protecting it.

Clarity was required on the definition of “free” when providing free access to knowledge by universities. At the University of Glasgow it means free of charge. Arrangements are put in place to give the knowledge directly to the company. However, if this is on the basis of an exclusive license it would conflict with state aid rules.

One participant asked if figures are available on the amount of KT which is actually able to be commercialised within the country it is produced. It would be useful to know if there is a way to arrange exchange of knowledge with other countries which need that knowledge and have the capacity to commercialise it. Pursuant to commitment 22 of the Innovation Union, the European Commission (EC) plans to develop a European knowledge market for patents and licencing.

4 Country profiles

4.1 Israel

Ilan Peled, “Magnet” Programme Director, Office of the Chief Scientist

There are seven universities in Israel which are active in research. There are also colleges with research outputs. In Israel technology transfer offices (TTOs) are considered as companies. Two Israeli TTOs have been running for more than 40 years, are very successful and generate large volumes of income. A large proportion of this income comes from just a few projects, most of them in the field of life sciences. In Israel there is no specific organisation conducting application-oriented research such as the Fraunhofer Society in Germany; application-oriented research takes place in university-industry partnerships.

The main focus of the Magnet programme is on the interaction with industry, which is not particularly the case for colleges. The Magnet programme includes several instruments with the same goal: Enhancing collaboration between academia and industry covering



different types of interaction: consortia, dual collaboration 1 on 1, and applied research directed by industry.

If academia is forced into pushing technology transfer (TT) then they will lose interest and the institution will lose researchers. The dilemma of academic freedom versus milestones and deadlines is often faced when trying to commercialise research. The issue often lies in the fact that researchers are not interested in applied research as this is not the route to academic promotion. Instead, researchers want to do basic research as this can yield publications. This raises the common issues faced by researchers of the gains of commercialisation versus royalties and the varying lengths of time these processes can take. A further obstacle to TT is that academia and industry represent two different worlds and they complain and hold prejudices about the other.

However, success can be achieved through the utilisation of relative advantages for the benefit of both parties. The advantages of academia are academic freedom, creative personnel, preferred working environment and exposure to the world. Whereas the advantages of industry are that they are focused on tasks, are product oriented, have funding and are a demanding customer. At Magnet there are several programmes in place which each deal with one problem and encourage academia and industry to work together to solve it. Magnet does not intend to “bridge gaps”, it seeks to “drill holes into the wall”.

Magnet forms consortia similar to those under Framework Programme 7, with the following exceptions: the consortia deal with generic technologies, competitors have to collaborate as there is one consortium for a specific technology, and the generic technology enables the collaboration as the competition is on products. The minimum number of companies involved is three. The scope of the programme covers technology R&D for pre-competitive technology. The programme involves the R&D process up until the development of products. The consortium’s goal is to achieve a common vision by developing new and innovative technologies and sharing know-how among the consortium members. Each member of the programme’s consortium gives the others free licenses to use their technology. These are multi-disciplinary projects with a variety of specialisation among members. The projects provide good working conditions. Approximately five million US dollar has been invested in this programme. A grant of up to 66%, or 80% for academia, is provided and industry members make up the remainder of the budget. However, before the first dollar flows there needs to be feasibility research involving one company and one university. The average number of companies included in the consortia is around eight or nine. The difference between magnet consortia and FP7 is that every company is accepted to the consortium which means that competitors sometimes have to collaborate. The timeframe for projects is between three and six years, generally five.

“Shelf-technology” generally does not find a way out of the institute, because it is too risky or too expensive. However, with subsidies these obstacles can be overcome. The Magnet programme encourages technology transfer in this way. Industry and academia carry out feasibility research in order to validate the potential of using the technology for the development of new products. Academia and industry have to sign a commercial contract in advance before they receive any funds, avoiding later issues with royalties. The IP can be passed on to ensure that it is commercialised.

Another Magnet initiative is **NOFAR** which bridges the gap between basic and applied research. The programme takes 100% academic research in its final year and helps to transfer this research to industry. Industry provides 10% of the budget and assistance. In return industry is not provided with IPR. However, they are the first to be able to negotiate with researchers. If an agreement cannot be reached then researchers are free to go elsewhere.

One and a half years ago, in response to companies seeking to put more money into applied research, Magnet established the **KAMIN** project. The aim is to translate scientific



research achievements into industrial applications. Research with translatable potential is selected and supported. There is no industry involvement in these projects, only academia. However, an advisory assistant must be hired from industry in order to develop successful relationships between academia and industry.

From the experience of Magnet it is clear that there are a variety of routes to achieving collaborations and bridging the gap between academia and industry. Joint collaborations should be flexible and based on mutual interests. It is important that both parties benefit from the collaboration. Magnet's key objective is cooperation as the focus should be on achieving goals in an efficient manner rather than fixing on the end result.

Discussion

One participant asked if there were any other research funding programmes in Israel and whether foreign partners are allowed to join. Magnet is the only programme which deals with direct academia and industry collaborations where they are treated as equals and concentrates on enhancing the relationship between them. There are other programmes for example where academia acts as a subcontractor rather than an equal.

There is yet no external evaluation of the Magnet programme which could compare its costs and benefits.

Regarding the inclusion of foreign companies, in Magnet's main programme, foreign companies can participate but there are strict conditions. Real, active cooperation must result such as honest provision of advice by companies. Companies cannot sit on the sidelines. Grants will not be given to foreign companies, only to Israeli companies.

4.2 Greece

Greece: Lena Tsipouri, Assistant Professor, University of Athens, Department of International Economics and Development

Lena Tsipouri noted that she has seen few successes in KT but many failures. Successful KT can take many paths. The best way is through **responding to market demand**. This has been proved to be successful for example at the Massachusetts Institute of Technology (MIT) in Boston US, but it cannot be used as a model for imitation since the underlying conditions are very different from those in less favoured regions of the EU. Successful countries in KT are those where the demand from industry is very clear and research responds to this. However, market demand in Greece is low and diminishing.

Alternatively, there is also an **informal route** for KT whereby "enlightened" individuals, e.g. high-profile university researchers, use informal links to industry. This often happens when there is no rigid structure in place that would hinder these links. However, such "enlightened" individuals are exceptional cases. Success stories in Greece include for example the spin-off Forthnet (<http://www.forthnet.gr>) in the '90s and the Nickel Company in the '70s (<http://www.nickel.gr>). Policy should support such informal routes.

Policy making can encourage informal routes – mainly by eliminating disincentives. Policy based interventions may diminish the risks and costs of KT and thus encourage investment. However, this is not always necessarily successful. KT in Greece has taken place despite rather than because of policy intervention.

Greece is a "**moderate innovator**" in the Innovation Union jargon; this means there is a research system in place but TT is limited. In the 1980s Greece had limited market demand and no money for TT. However by the end of the '80s the EC had provided financial support for less favoured regions, which included Greece, with the request that they invest in research and TT. The research system improved immensely and research productivity is above the EU average (109%) and improving in terms of publications.



However, the economic productivity of research remains low and TT did not improve despite funding being in place. Results have been low not only in comparison to other countries but also against Greek targets. Greece is below the EU average in terms of citations (76%) and marginal in international patenting. Gross expenditure on research and development to gross domestic product (GERD/GDP) is stagnant at 0.57% and business sector expenditure (BERD) to GDP is at 0.16% and declining.

The creation of the "**Special Accounts of Research**" in the mid 1980s paved the way to formalise and increase links with significant success cases. Recently this success story faces increasing problems of control and bureaucracy. The special accounts provided for money to be invested within the university, in units which could then be considered outside the regulation of the public accountancy system. This gave greater freedom. It also allowed university professors who managing research projects to double their salaries. In the current economic situation, the special accounts of research allow to keep about 15% of the overheads for research and from this they can make up for budgetary cuts. The special accounts of research have also helped create links to business in the top institutions. Special accounts of research are working in Greece but they are currently contested. However, just because similar accounts do not work elsewhere, it does not mean that they are not appropriate for Greece.

As regards **IP ownership**, the law for the commercial exploitation of IPRs by universities and research centres states that the researcher owns 60% of the IPR and the research organisation 40%. Beyond this share, each higher education institution (HEI) or research organisation (RO) is expected to create its own internal rules. Government owned results are in theory freely available, however there are no mechanisms facilitating access or dissemination.

The **new law 4009/2011 for HEIs** foresees the establishment of a unit in each institution that will be responsible for IPR issues. These units could also undertake other responsibilities, which are usually part of the mandate of a TTO.

In terms of support a programme called "**Collaboration**" supports consortia of HEIs, PROs and companies in performing research in national priority areas. The available budget was 93 million euro in 2009 and 68 million euro in 2011. There is also an innovation voucher scheme for small companies, in total 8 million euro, and support for spin-off ventures.

While there was support for **TTOs** in Greek universities and research centres, they have failed to produce tangible results, not even a repository of knowledge that is available at the PROs. There were no external and transparent evaluations, and only few TTOs are active in real TT. Many interpreted TT as supporting internships and life-long learning. Now that universities are expected to fund their own TTOs they are not interested as they do not see tangible benefits. TTOs would need to refocus their work towards active TT. One driver towards such change may be the new law which is reorganising HEIs and foresees the involvement of the private sector in their management boards. This may help forge informal links. One positive example is the University of Thessaloniki where 24% of money coming in is from the business sector.

Furthermore, Greece should also have worked more sustainably on changing **formal rules** related to KT. Policy making was done too quickly and the rules were not followed. There was neither evaluation nor persistence in place to make new formal rules work in practice. Policies and incentives need to be monitored and evaluated; recommendations need to be followed up; and persistence is required.

In **conclusion**, Lena Tsipouri recommended that Greece should take advantage of what has worked rather than demolish it (Special Accounts of Research) and support successful linkages between PROs and industry. KT policy makers should monitor, evaluate, follow the recommendations, copy intelligently, and persist in their activities.



Discussion

Upon request from a participant, Lena Tsipouri explained **special accounts of research** more detailed. The Law went to parliament in the mid-80s and allowed universities to create a unit which is subject to management by universities but not subject to public accounting rules. For example under normal accounting rules public servants would not be able to get money for travel expenses or public procurement procedures. The special accounts of research have their own rules and their own culture. All you need to obtain money from the accounts is to sign an application. It leaves projects free to organise their own research payments. It is a structure which is both within and outside of the university which gives flexibility to those who are in a position to bring in money. Therefore, it will not be given to TTOs that are not in a position to attract business. FP7 projects also go via a special account of research. The budgetary rules are very clear and strict for these accounts. Agreements have to be signed. It works well because it is outside of normal regulations, but the public accounting office is trying to restrict it.

It was stated again that the **purpose of a TTO** is to commercialise technology. There are informal ways to do TT around the TTO, and this is not a problem as long as the university benefits from it. TTOs should be there to help projects and individuals who cannot do TT through informal ways.

As regards the **future of KT in Greece**, it was observed that businesses currently prefer to invest outside Greece because investing in Greece is very risky. Despite this the Greek research sector is doing surprisingly well so the future looks hopeful.

4.3 Cyprus

Marcia Trillidou-Varzakakou, Scientific Officer, National Research Programmes Unit, Research Promotion Foundation

Landmarks in Cyprian **research history** include the establishment of the University of Cyprus in 1989, the establishment of the Cyprus Institute for Neurology and Genetics, and the establishment of the Research Promotion Foundation in 1996 which in 1998 announced the first National Research Funding Programme. In 1999 Cyprus participated in the EU Framework Programmes for R&D and other European and regional research activities. In 2003 the first National Framework Programme for R&D was set up. In the same year the Open University of Cyprus was founded followed by the Cyprus University for Technology in 2004. Then in 2005 a law was put in place for the establishment, operation and control of private universities which resulted in four private universities being established between 2005 and 2010. The second National Framework Programme for R&D was put in place in 2006 and then the third in 2008 with the addition of innovation to the title. From 2008 to 2010 more than 50 small research organisations were established and SMEs' research capacities gradually increased.

As regards **research and KT performance**, Cyprus' R&D expenditure has been increasing at a steady rate although its increase relative to the growth of GDP has slowed recently. Cyprus' R&D expenditure as a percentage of GDP was relatively low at 0.5% in 2010, when compared to other countries. In 2011 Cyprus had 21 patents granted by the European Patent Office (EPO) and submitted 51 European Patent Applications. Cyprus performs well in terms of citations per full-time equivalent researcher and in terms of EPO patents per million inhabitants when compared to other European countries.

Cyprus' tools and activities in KT include involvement in the Enterprise Europe Network, three business incubators operating within or in association with PROs. 36 incubated companies were also supported by the national programme. **Industry Liaison Offices (ILOs)** are being set up within six public and private universities. All ILOs have started operations, the first of which is mapping the universities' research and teaching activities,



which all ILOs have completed. However, no internal IPR policies have been set up within universities. Instead, IPRs are handled ad hoc and limited to individual cases. There is also a lack of internal know-how about KT, of experienced staff, and of IP management knowledge within Cyprian legal firms. Advice on IP is usually received from abroad.

Funding for KT and IP management includes 5,000 euro per case in an “innovation voucher” scheme for TT, which covers small scale collaborations between SMEs and PROs, both public and private. For IP protection the situation until 2007 was that patent application costs were incorporated into funded research projects. However, from 2008 to 2011 the “Patents” Specific Support Action has been in place which provides 30.000 – 40.000 euro of funding. This translates into 35-100% funding on preparation, filing and prosecution of patent applications, renewal fees, defence of the right validity during official prosecution or possible opposition proceedings, and annual renewal fees for two years. KT is also encouraged through other research programmes such as: Research for Enterprises, EUREKA Cyprus, PENEK & DIDACTOR and specific programmes promoting international collaboration of researchers.

Principles and guidelines for IP management in research projects are in place as are consortium agreements as pre-requisites in funded research projects. These were in place before the Commission Recommendation came into force. Other **activities in line with the Recommendation** include: promotion of dissemination of knowledge created by public funds (2% of funding for dissemination activities), funding of foreign partners in national research programmes (up to 30% of project budget), promotion of research results through the Research Promotion Foundation’s Bi-monthly Magazine “Ipsipetis” and the Enterprise Europe Network as well as organisation of IP workshops.

Challenges facing Cyprus’ in KT include: a recent history in research, poor exploitation of results, lack of experience and know-how, lack of entrepreneurial culture, no supportive legislation for spin-off by PROs, a collaboration gap between academia and industry, non-availability of seed or start-up funds, a small internal market, and a disadvantageous geographical location. Strengths of Cyprus’ KT system are: quality research, high educational level of human resources, and strategic collaborations with specific countries.

Possible solutions to problems include: educating PROs and TT professionals as well as legal firms on IP and exploitation, encouraging entrepreneurship within the research community, promoting legislation on research exploitation from PROs, attracting foreign investors, and building on strategic collaborations for TT with specific countries. All of the above have as a pre-requisite to continue as a country to invest in research and innovation as a fundamental tool for development.

Discussion

One participant pointed to the **lack of venture capital** and seed capital available for Cypriot entities. This lack may be due to a moderate approach to technology in Cyprus. VC tends to be invested into radical types of technology developments, whereas incremental technologies do not promise sufficient profit. If you cannot find VC in a country then one would not be able to find it abroad. An initiative from the government to encourage more radical technology development would thus be useful. However, this statement was contradicted by another participant who said that there are a lot of well-developed, state-of-the art inventions in Cyprus that could attract seed funding, whereas at the same time the type of technology would not be the only criterion taken into consideration by venture capitalists.

In Cyprus there are activities to support **IP protection** but not directly addressing the creation of an IP policy. There is no money for creating such policy in Cyprus, so universities are trying to find their own funding in order to pay the lawyers – while it would be better to do this at the national level. One participant asked how one can build TTOs without having a concept for IP. There is no incentive to invest in IP and patents without knowing to whom a patent would belong.



One participant observed that **Cyprus is potentially following the mistakes of Greece**. Would it be better to establish one national TTO rather than one in every university? The problem may actually be that funds have been directed into the wrong channels rather than no money being available. It may be too late to stop the path of developing TTOs along the same line as the Greeks have done. However, a mid-term evaluation could be put in place to prevent the development of similar issues.

It was observed that Cyprus needs to figure out its approach to and culture of KT. Cyprus needs a national innovation and KT strategy and the tools to implement it; particularly addressing the issues of research valorisation, spin-off creation and efficient IPR management. The major problem in Cyprus may be a lack of a culture for entrepreneurship and innovation. This would need to be tackled first.

5 Conclusions

In conclusion, Stefan Lilischkis stated that the presentations and discussion clearly showed that KT is considered an important issue in Cyprus, Greece and Israel. In all three countries KT and policies supporting KT are developing. The workshop also showed that the three countries have a different profile in KT and different economic backgrounds for the further development of KT.



Annex

Annex 1: List of participants

Nr.	Title	Name	Organisation
1		Dalosi, Anna	Open University of Cyprus
2		Escudeiro, Nuno Filipe*	Instituto Superior de Engenharia do Instituto Politécnico do Porto
3		Escudeiro, Paula Maria*	Instituto Superior de Engenharia do Instituto Politécnico do Porto
4		Es-Sadki, Nordine	United Nations University, Maastricht Economic Research Institute on Innovation and Technology
5		Gallou, Maria*	European University of Cyprus
6	Prof.	Golan, Gady	Holon Institute of Technology (HIT)
7		Gregoriou, Elena*	Open University of Cyprus
8		Heywood, Jess	empirica
9		Holzmann, Vered *	Holon Institute of Technology (HIT)
10	Dr.	Ioannides, Marinos	Cyprus University of Technology
11		Kali, Maria*	Open University of Cyprus
12		Kofterod, Stavriana	Diogenes Business Incubator University of Cyprus
13	Dr.	Konstantelou, Anastasia	University of Aegean
14		Kokou, George*	Cyprus University of Technology
15	Dr.	Lilischkis, Stefan	empirica
16		Luchetti, Alessandra	General Directorate Education and Culture, European Commission
17	Dr	Makrides, Gregory*	University of Cyprus
18		Peled, Ilan	Ministry of Industry, Trade and Labour, Magnet Programme
19		Pinto, Janaina	TroyAvi Ltd
20		Saitakis, Artemis	FORTH, Science Technology Park of Crete
21		Savva, Michalis*	Open University of Cyprus
22		Trillidou-Varzakakou, Marcia	National Research Programmes Unit, Research Promotion Foundation
23		Tsipouri, Lena	University of Athens, Department of International Economics and Development
24	Dr.	Zenios, Stavros*	Network of Universities from the Capitals of Europe (UNICA)
25		Zomeni, E. *	University of Cyprus

* Speaker in the joint session with EASTWEST who are informally considered as workshop participants.

**Annex 2: Programme**

Time	Sessions
Joint sessions with EASTWEST conference	
10.00 – 10.30	<p>► University House "Anastasios G. Leventis" (Building ADM01), Room B108</p> <p>Keynote (Plenary)</p> <p>Cities and their universities for the creation of innovation and entrepreneurship</p> <ul style="list-style-type: none"> • <i>Dr. Stavros Zenios</i>, President of the Network of Universities from the Capitals of Europe (UNICA), Professor of Finance, University of Cyprus
10.40 – 12.00	<p>► Building SFC07, Room 018 (ground floor)</p> <p>EAST WEST Session 1.16</p> <p>To be connected: university liaising with enterprises - good practices</p> <ul style="list-style-type: none"> • <i>Chairs: Dr Gregory Makrides</i>, Director of Research and International Relations / <i>E. Zomeni</i>, both University of Cyprus (Nicosia, Cyprus) • <i>C.U.T. industry liaison office - accomplishments and areas of expertise: George Kokou</i>, Cyprus University of Technology (Limassol, Cyprus) • <i>The operation of an industry liaison office at the Open University of Cyprus: Elena Gregoriou, Michalis Savva, Anna Dalosi, Maria Kali</i>, Open University of Cyprus (Nicosia, Cyprus) • <i>European university-industry liaison office: Maria Gallou</i>, European University of Cyprus (Nicosia, Cyprus) • <i>PRAXIS: European centre for project/internship excellence: Nuno Filipe Escudeiro / Paula Maria Escudeiro</i>, Instituto Superior de Engenharia do Instituto Politécnico do Porto (Porto, Portugal) • <i>A novel perspective of academic entrepreneurship: Vered Holzmann and Gady Golan</i>, Holon Institute of Technology (HIT) (Holon, Israel)
Knowledge Transfer Study workshop	
12.10 – 13.30	<p>► Building SFC03, Room 101</p> <p>Welcome and introduction</p> <ul style="list-style-type: none"> • <i>Alessandra Luchetti</i>, Head of Unit "People programme, Marie Curie actions", General Directorate Education and Culture, European Commission <p>Research findings</p> <p>Knowledge Transfer Study 2010-2012: lessons learned so far</p> <ul style="list-style-type: none"> • <i>Findings from knowledge transfer office surveys: Nordine Es-Sadki</i>, United Nations University, Maastricht Economic Research Institute on Innovation and Technology (Maastricht, Netherlands) • <i>Insights from expert workshops: Dr. Stefan Lilischkis</i>, Knowledge Transfer Study Manager, empirica GmbH (Bonn, Germany)
13.30 – 15.00	<p>► Building SPF01 (Next to the Exhibition Area, 5 min walking)</p> <p><i>Lunch break</i></p>
15.00 – 16.30	<p>► Building SFC03, Room 101</p> <p>Country profiles</p> <p>Knowledge transfer and IP management at universities and public research organisations: current situation, good practice and challenges</p> <ul style="list-style-type: none"> • <i>Israel: Ilan Peled</i>, "Magnet" Programme Director, Office of the Chief Scientist (Jerusalem, Israel) • <i>Greece: Lena Tshipouri</i>, Assistant Professor, University of Athens, Department of International Economics and Development (Athens, Greece) • <i>Cyprus: Marcia Trillidou-Varzakakou</i>, Scientific Officer, National Research Programmes Unit, Research Promotion Foundation (Lefkosia, Cyprus) <p>Conclusions</p> <ul style="list-style-type: none"> • <i>Stefan Lilischkis</i>, empirica GmbH (Bonn, Germany)