



European University Association

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KNOWLEDGE TRANSFER

EUA Conference - Dubrovnik, 28-29 September 2001

Summary Report

The first conference under the auspices of the European University Association, was hosted by the University of Zagreb at Dubrovnik on 28-29 September 2001 on the subject of "Knowledge Transfer". Well over a hundred European universities and the majority of the European rectors' conferences were represented and participated actively in the discussions.

The theme of "Knowledge Transfer" had been chosen as it is among the crucial missions of universities. Knowledge transfer takes many shapes and permeates the activities at universities as places of learning and knowledge production. It is therefore no surprise that public authorities and private enterprise increasingly involve university researchers in problem solving, be it in questions of multicultural development, health issues, cultural activities, regional policies, or specific industrial development projects. Research in universities is one of the fundamental areas to assist in bringing about economic and technological growth.

The conference focused on ways in which to establish structures within universities to facilitate transfer of knowledge to society at large. Examples of good practice were given, of strategic approaches, networking activities, institutional policies, and co-operation initiatives. Discussions touched upon important issues such as ethics, financial constraints and opportunities, and the role of the humanities and social sciences in knowledge transfer policies.

There was a general understanding that the conference could provide only examples, but that this method of sampling was of importance to give ideas, exemplify policies, illustrate the wide range of activities linked to a concept as broad as knowledge transfer.

Presentations:

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| Prof. Dr. Ir. Konraad DEBACKERE: | <u>Training and Mechanisms to Foster Technology Commercialisation for Knowledge Organisations</u> |
| Dr Peter VAN DER SIJDE: | <u>Co-operation with Enterprises – The Spinnova Experiences</u> |
| Dr Peter HISCOCKS: | <u>Entrepreneurship within Universities</u> |
| Professor Janis VETRA: | <u>Generation of high-tech company by Latvian Medical Academy</u> |
| Dr Samir HAMROUNI: | <u>Transfer of Knowledge – University of Barcelona</u> |
| Dr Tapio MARKKANEN: | <u>Knowledge Transfer – Universities Building the Society, the Finnish Case</u> |
| Professor François PECCOUD: | <u>"One university's strategy for capitalizing on its know-how": The case of the UTC</u> |
| Dr Regula ALTMANN-JÖHL: | <u>Spin-Off Creation at ETH Zürich</u> |
| Dr Isi SARAGOSSI: | <u>The European Research Area and the new Framework Programme</u> |

Conference programme and presentations

The conference was opened by representatives of the local authorities, the hosts and the EUA:

- the Rector of the University of Zagreb, Prof B. JEREN,
 - the President of the National Council of Higher Education, Prof J. H. MENCER,
 - the President of the Croatian Rector's Conference, Prof G. KRALIK,
 - the President of the Prefect of the Dubrovnik-Neretva Country, Mr I. ŠPRLJE,
- and the President of the EUA, Prof E. FROMENT.

In his key note speech, Dr Isi SARAGOSSI, from the Directorate-General for research at the European Commission, gave a general presentation of the ideas behind the launch of the European Research Area, the main objectives and the ways in which the future RTD Framework Programme can assist the process towards improved research co-operation in Europe. He saw the European Research Area as a challenge as well as an opportunity for universities and underlined the role universities could play in creating synergies between the European Research Area and the European Higher Education Area or "Bologna process".

The conference was divided into three main sessions:

- I. Training of researchers,
- II. Consultancy and contract research, and
- III. Spin-off creation.

Session I: Training of researchers

This session, chaired by the EUA Vice-President, Prof. Lucy SMITH, was opened with a key note by Prof Koenraad DEBACKERE from the Catholic University of Leuven (B), professor of technology and innovation management and responsible for the Research and Development unit, the knowledge transfer office of the university.

Prof DEBACKERE gave a comprehensive presentation of the dynamics, risks and opportunities involved in launching knowledge transfer structures at universities. He outlined the historical developments of knowledge transfer activities and introduced the matrix thinking / matrix structure developed at KULeuven. The matrix model and the possible pathways linked to it include research for companies, technology transfer via patents and licensing, generation of spin-off companies, and support measures to uphold and expand activities: management support, intellectual property support, incubator activities. Prof DEBACKERE stressed the cross-fertilization among these activities and the role of a university as incubator, trainer as well as facilitator of economic growth in its knowledge organization. He also underlined the need to have a mix of start-ups and established companies, professional support in terms of infrastructure and environment, appropriate facilities and partnerships with all actors involved, including the local/regional authorities.

Dr Peter VAN DER SIJDE, Director of the Knowledge Transfer Activity unit at the Technical University of Twente (NL), is one of the active coordinators of the *Spinnova* training programme in collaboration with the Research and Development office at KULeuven and five other European universities. He explained the objective of the project which is to support

researchers and scientists by offering training courses to create awareness of commercialization issues, create tools and assist in setting up exploitation plans.

Dr Peter HISCOCKS is the Director of the Cambridge Centre for Entrepreneurship at the University of Cambridge. He is actively involved in the daily operation of what has become known as the "Cambridge phenomenon". In spite of the fact that the region around Cambridge has been one of the fastest developing high-tech regions in the UK, the university involvement had been low until the late 1990s. Dr HISCOCKS described the current role of the university as one of active involvement providing leadership, support and promotion of the exploitation of its knowledge.

In the three discussion groups following the key note speech and the presentations, the focus was on the following aspects: "Training courses as a strategy", "Co-operation with enterprises" and "Entrepreneurship in universities". Embedding new co-operation structures and cultures in a university setting was a common denominator for all three groups. The objective is to create a win-win situation which necessitates solutions to difficult questions such as ethical problems, how to reconcile non-public funding with publicly accountable, democratic systems, policies on intellectual property rights, etc. The group discussions showed regional and local differences, in university structures as well as in financial strength, and raised questions regarding the relevance of entrepreneurship to all disciplines, the redistribution of commercial income among university faculties/departments, how to avoid "brain drain" of the commercially successful researchers. There was general agreement that a process of change towards entrepreneurship entails careful planning, but can also provide universities with new opportunities to develop a regional/local key position as knowledge producers in a socially responsible manner.

Session II: Consultancy and contract research

This session looked into a number of concrete examples of activities at national and/or institutional level. The session was aimed at giving an introduction to the ways in which some universities have tackled the demands from public as well as private bodies. In this session, chaired by Prof. Luc WEBER, member of the EUA Board, the introductory key note was given by Dr Jens Kristian GUNDERSEN of the Aarhus Science Park, where he is the Director of the company Unisense A/S, a small company created by researchers from the University of Aarhus within the framework of the science park. Dr GUNDERSEN gave a general introduction to the development of Aarhus Science Park since its start in the early 1980s with four companies to the sixty companies now working within the framework of a diversified support structure (*text not available*).

Prof Janis VETRA, Rector of the Medical Academy of Latvia and the President of the Latvian Rectors' Conference, gave a presentation of the project developed at the Medical Academy in co-operation with healthcare institutions, research institutes, laboratories and industry to elaborate medical technology to determine osteoporosis and other bone diseases.

Dr Samir HAMROUNI, Director of the European Research Projects Office at the Barcelona Science Park, established by the University of Barcelona, presented the aims and objectives behind the establishing of the Scientific and Technical Services at the University of Barcelona to support researchers at the university and public and private institutions, and the Barcelona Science Park as a centre of research covering several different backgrounds: university, business world, public research agencies, and offering a number of assessment and support services.

Dr Tapio MARKKANEN, Secretary General of the Finnish University Rectors' Council, was involved, on behalf of the Rectors' Council, in the negotiations in Finland concerning a national research strategy. He presented the discussions and priorities set by the various actors in developments leading to a national strategy for the establishing of a knowledge society, and the role played by the Finnish universities in the process.

The group discussions focused on three main areas, "Science parks as models for co-operation", "Institutional or departmental organization of consultancy work" and "National research strategies versus institutional policies". The differences between the various universities represented at the conference became clearer in the discussions than in the previous groups. Universities with less experience wanted to discuss how to stimulate demand, how to establish structures to ensure continued university support to the development of contract research, and how to move on to more diversified strategies. Other universities discussed science park experiences as tools in a general university strategy and focused on future developments such as "virtual science parks". The discussion on national research strategies revealed the diversity of approaches, levels of involvement, levels of funding and support throughout Europe.

Session III: Spin-off creation

As chair of the third session, Prof Dr Georg WINCKLER, Vice-President of the EUA, briefly outlined some of the themes from the two earlier sessions, notably the matrix idea launched by Prof DEBACKERE, based on the assumption that the focus of economics is shifting from productivity increases to quality, flexibility and innovation and to venturing - and venturing would be the morning's main theme. There are increasingly close links between research and patenting and licensing. Universities think more of creating patents and licences than they did earlier. How does one facilitate this in universities, bearing in mind that venture capitalists would like to see concrete projects and researchers rarely have project outlines but lots of knowledge.

Many countries are now setting up government programmes to support projects and function as brokers between universities and venture capital; in other countries, universities themselves establish such offices. Researchers are often looking to too many markets. Such programmes can help them focus.

The main challenge for universities is not to get the money but to set up the structures, the organisational framework to facilitate co-operation with industry and venture capital. In many cases universities have affiliate companies or limited liability companies. Could one see a future with universities as conglomerates and to what extent does this already happen?

To which degree are universities prepared to be involved? in giving equity, giving loans, profiting from patents and licences? To which degree will universities be changed into conglomerates of companies? There is a university culture which should be preserved - the academic culture which is the foundation of the research that brings about innovation. How far can this culture be combined with spin-off creation? The morning session would give two examples from two different university settings of how to go about this.

Prof François PECCOUD, President of the Compiègne University of Technology (UTC) and a professor of informatics, presented the innovation strategy adopted by his university in 1997, a small university in rural northern France, a strategy which incorporates innovation in

education as well as research and involvement of staff as well as students. He underlined the need to create a spirit of innovation, using existing knowledge and know-how as well as creating collaborative new projects. The simple message “10 – 100 – 1000” was part of the innovation plan, i.e. “in 10 years create 100 innovating firms to offer 1000 jobs around UTC”. He described the various instruments which accompanied and managed the evolution: creation of a seed-money fund, establishing an innovation steering committee, re-engineering all management courses, developing networks or consortia for distance education, and collaborating with ANVAR (the French innovation agency). Professor PECCOUD underlined the necessity to create an overall strategy, taking into consideration the local setting as well as the global perspectives, and he stressed the active involvement of students, “the university’s main innovation force”.

Dr Regula ALTMAN-JÖHL gave a presentation of the spin-off activities at the ETH Zürich, the Federal Technical University, where she is an advisor at the university’s office for Research and Industrial Liaison. Every university, technical college and research institution in Switzerland has a Know-How and Technology Transfer office (KTT) to support institutions in collaboration activities, consulting, commercial exploitation, testing of prototypes, advanced training, etc. The ETH Zürich has adopted a four-year plan to build up and enhance their KTT (2000-2003). The services offered include networking, the set-up and negotiation of contracts, invention management, patent applications, creation of spin-offs and supporting centres of competence.

Plenary discussion

The discussion panel, chaired by Prof A. OOSTERLINCK, member of the EUA Board, included

- Prof Jaak AAVIKSOO, Rector of the University of Tartu and member of the EUA Board;
- Prof Helen PICKERING, Deputy Vice-Chancellor, University of Teeside;
- Dr Isi SARAGOSSI, the European Commission; and
- Dr Peter VAN DER SIJDE, Director of the Knowledge Transfer Activity unit at the Technical University of Twente (NL).

The main themes discussed by the panel and the audience were ethics, the role of the humanities, intellectual property rights, the role of universities in EU research programmes, and the financing aspects of the future.

Ethical questions are becoming increasingly important in all sectors, including industry. General guidelines are also emerging and ethics committees established in many universities. In collaboration with private companies as in other activities, universities must remain transparent and accountable. Universities need to have robust systems, transparent accounting and good partnerships with stakeholders, including student bodies.

Universities need a broad range of disciplines, including the humanities. Research projects are increasingly interdisciplinary, with growing social demands for sustainable development in a wide range of fields. Universities can contribute with solutions only if they uphold the broad coverage, and they have a responsibility to ensure diversity of disciplines to be able to meet the needs of modern society, both in terms of research and of education.

Regulations regarding intellectual property rights (IPR) vary from one country to the next, but increasingly national rules and regulations are being laid down. Researchers at universities are used to publish and share their results, whereas some industries would be opposed to publication. Universities have to assist their researchers in the handling of IPR questions and

other problems related to collaboration with bodies outside the university. The conference had shown some examples of such support facilities.

The European Commission was criticized for overlooking universities in documents regarding the European Research Area (ERA) as well as in the proposal concerning a new framework programme. The Commission representative was aware of the criticism and underlined the efforts to rectify some of this in later texts. The main interest of the Commission is to be able to establish a critical mass at European level within a number of areas, and participation of universities in networks of excellence was seen as a *sine qua non*. The Commission looked forward to co-operating further with the EUA on the role of universities in the ERA.

The new economic reality entails difficulties in raising money for various activities. Just a couple of years ago, the financial markets favoured the launch of spin-off companies, but now failure rates are up to five per cent and growing. Spin-off creation has to be backed by long-term policies and a favourable environment or it can be a costly affair. Long-term strategies which develop entrepreneurial cultures in universities are also ways in which to prepare, as the examples at the conference have shown.

Conclusions

The conference provided a number of examples of good practice at various levels and of various types. As the first conference of the EUA, the conference also showed a need among member universities and collective members to come to grips with new challenges: innovation strategies, new ways of funding university research, intellectual property rights, co-operation between universities and industry, and influencing the development of the European Research Area and the new framework programme.

The conference showed the need to have the European Research Area as one of the EUA policy priorities. The innovation policies outlined in the ERA communication could provide a further boost to activities already under way in a number of European universities, as can the collaboration activities foreseen within the networks of excellence in the new framework programme. The EUA Research Working Group will be one of the bodies to follow the development of the framework programme.

The activities of the EUA over the months following the Dubrovnik conference will include initiatives within the areas defined as priorities at the conference:

- intellectual property rights
- new ways of funding university research
- co-operation between universities and industry
- collaboration with the European Commission, notably on innovation strategies and policies in relation to ERA.