Technology and Know-How Transfer in European Perspective: Potentials and Possibilities with EU Accession of South-Eastern European Countries

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Abstract: Technology and know-how transfer is one of the most demanding tasks of universities beside education and vocational training. Universities need to build up procedures for close cooperation with potential partners in the private and public sector. Additionally, technology and know-how transfer is a relevant objective of the European Union and is defined in many policy fields. Therefore, EU-funding programmes support transfer activities. The dimension of a European wide technology and know-how transfer with focus to European enlargement of South-Eastern European countries is discussed here.

Keywords: Technology and know-how transfer, European Union, 7th framework programme, Applied research and development

1 Introduction

Transfer of technology and know-how from universities to industry or public services and other institutions and vice versa generate efficiency, progress and sustainability. In universities and research institutes knowledge is generated e.g. in order to develop new technologies for production processes, material composition or other fields. Consequently, technology and know-how have to be considered as two connected elements. The term 'technology and know-how transfer' as used here, refers to the process whereby technology, know-how, expertise or inventions that result from academic research are transferred and used in a completely different area in industry or in the public sector. The process of transferring new technologies and know-how is not easy and demands cautious and continuous bargaining between research and industry partners. Therefore, successful technology and know-how transfer is determined by close cooperation between universities, enterprises and public services.

Technology and know-how transfer activities have positive effects on two sides: on the one hand on the university's performance and its attractiveness; on the other hand on the business environment; companies or enterprises benefit from the transfer activities. Overall, the contribution to innovation and technological change, thus to economic growth, is essential.

1.1 Importance for Universities

Universities are taking their responsibility in technology and know-how transfer more and more seriously. Their contribution to the economic development, on regional as well as on national level, is notably high and heads of universities recognize technology transfer as an essential instrument in fulfilling this task. In addition, professors and researchers are aware of the need to exchange experience and knowledge with industrial partners in order to continually improve the applied research capacity. Excellent research results can only be obtained in a constant process in which their implementation and final commercialisation is achieved easily.

Furthermore, successful technology transfer is more and more recognized as an additional source of university revenue. In this context, two aspects need to be considered: Firstly, for the development and research of new technologies universities may apply for regional, national or European funding. The possibilities are numerous and universities can benefit financially from the funding revenues. Secondly, by patent applications, licensing and the eventual commercial use of patented technology the institution can profit from this income. However, the process from licensing to the commercialisation of products often takes years. Irrespectively the financial benefit of technology and know-how transfer activities positive effects on the overall performance of universities are obvious. The university's reputation as reliable research partner for industry attracts students, researchers and further industrial partners.

In Germany, a special form of universities has to be mentioned in the context of technology and know-how transfer. 'Fachhochschulen' – University of applied sciences (UAS) play a specific role in the context of technology transfer.[1] These universities offer particularly applied study programmes such as engineering, business or other areas and have very close cooperation to industry and other sectors. In comparison to universities focussing mainly on frontier research, universities of applied sciences profit from strong relationship to (regional) companies in order to develop technologies which may easily be implemented in production processes.[2]

1.2 Benefits for Industry and Public Sector

For industry, close cooperation with research institutions is essential to cope with the demands of the marketplace. Innovation and product development are the major source for business performance. To exploit their ideas and to create new products companies need to acquire new technologies. The public sector can improve processes or service related functions through university cooperation. However, the budget for research and technological development (RTD) activities is often limited. In particular, small and medium-sized enterprises usually lack research potential to develop their products continuously and to respond to market demands. With new technologies or new products created in close cooperation with university partners, companies have the possibility to access new markets or to strengthen their market position.

2 The Transfer Process

The process of transferring technology, expertise, know-how or innovation is quite complex and takes place on several paths. Three main activity fields[3] can be distinguished:

2.1 Research and Technological Development Projects

The development of new technologies by RTD projects with industry partners or public services, describe one possible transfer model. Two forms of RTD activities can be defined: Firstly, joint projects with industry partners. In this case,

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1 159 universities of applied sciences exist in Germany (January 2006).

2 Forschung, Entwicklung und Technologietransfer an Fachhochschulen, Dokumentation der 34. Jahrestagung des Bad Wiesseer Kreises 20. Mai-23. Mai 2004, Beiträge zur Hochschulpolitik 5/2005, Hochschulrektorenkonferenz (ed.), Bonn 2005.

3 The discussion on the forms and models of technology and know-how transfer is large. See: Bozemann, B. (2000): Technology Transfer and Public Policy: A Review of Research and Theory, in: Research Policy, Vol. 29, pp. 627-655.

universities and industry have common objectives to develop new technological solutions. Secondly, lacking sufficient research possibilities, industry partners demand universities to fulfil their research objectives and the university is considered as research provider. Irrespective of the cooperation basis, RTD projects result in innovative technologies, new production processes or new materials. Patenting, licensing and the commercialisation of the research solutions finalize the technology transfer process.

Additionally, researchers of universities can enhance the know-how transfer by the publication of academic research results, their presentation at fairs or exhibitions, the participation at applied research conferences or seminars. Certainly, the influence of such activities is lower than concrete cooperation projects. However, a future cooperation can be released by such information flow.

2.2 Personnel Mobility

Researcher mobility and personnel exchange are another form of know-how transfer to industry or private sector. Mobility programmes for researcher can support the transfer of knowledge into companies and vice versa. Mobility already begins at the student level: internships and students' bachelor or master theses guarantee know-how transfer. Often graduates start their professional career in a company which they already know due to a practical work. Additionally, employees industry or public services can participate in training courses or specific work shops for external partners offered by universities.

2.3 Support Services

Many universities offer support and consulting services for companies in particular for small and medium-sized enterprises (SME). The support includes advice on technological problem solutions or on specific company related questions such as production processes etc. Moreover, universities are integrated in international networks that can also be relevant for cooperation partners in order to establish new contacts. Furthermore, universities offer support services for start-ups. In many cases, new innovations are introduced to the market by newly founded enterprises. Therefore, the support of business start ups by universities is a very important aspect in the technology transfer process. Universities shall encourage their graduates to start their own business.

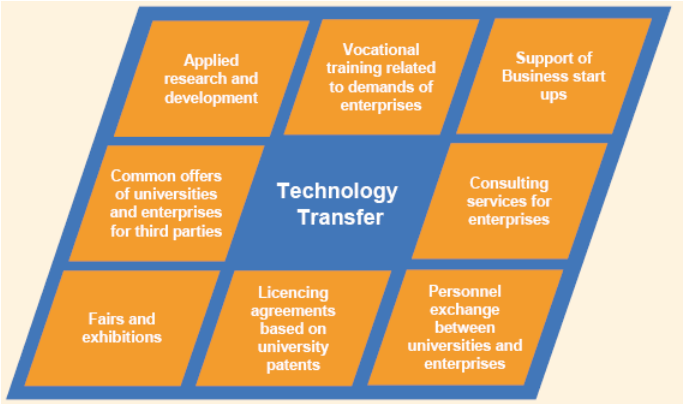

Figure 1
Forms of technology and know-how transfer

3 Technology and Know-how Transfer in European Perspective

3.1 European Challenge

European technology and know-how transfer faces specific challenges. In general successful transfer activities depend on a strong network which is based on liability and confidence between partners. In a European or international environment this basis is more difficult to obtain. Cultural, linguistic, political and geographical barriers do exist and behaviours, mentalities and the conception of tasks and responsibilities within Europe are different. Because of these intercultural circumstances a confidential cooperation with European partners build up more slowly. Mutual recognition of both sides is explicitly needed. Moreover, the search for suitable cooperation partners is more demanding on European level. Regarding the diversity of competencies and qualifications of academia and industry within Europe it is much more difficult and pretentious to find suitable partners beyond national borders. Permanent and intensive networking is the prerequisite to overcome national barriers. Furthermore a good knowledge of the political circumstances and institutional structure is needed. To facilitate the partner search the European Commission established different partner networks and runs thematic partner search databases.[4] The enlargement policy of the European Union for the potential candidate countries in South-

[4] See: http://irc.cordis.lu/ or partner search database on Cordis: http://fp6.cordis.lu/.

Eastern Europe[5] adds a new dimension to European technology transfer: on one hand, the future member states need to be prepared to the dynamic of European cooperation including all its potentials and difficulties. On the other hand, the 'old' members have to discover the possibilities emerging from the accession countries.

3.2 Research Policy of the European Union

Cooperation in Europe with respect to research and technology transfer did develop in several steps: Research policy was not mentioned in the original EEC Treaty of 1958. Nevertheless, its relevance increased continuously and a new title on 'Research and Technological Development' was introduced by the Single European Act of 1987. The title was developed whilst preserving the broad objective of strengthening research and technological development activities of high quality.[6]

Since 1990 the European Commission perceived the increasing relevance of research and technological development thus, technology and know-how transfer. In comparison to the USA and Japan, the European RTD investment was quite low, consequently, innovation and competitiveness needed to be improved. At present, development and creation of new technologies and knowledge is one important objective of the European Union. In March 2000, the European Council agreed on the ambitious goal of making the EU by 2010 'the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion'.[7] This declaration pushed forward a process on growth and development which is known as Lisbon agenda. In detail it was agreed on investing in RTD up to 3% of GDP; promoting entrepreneurship and achieving an employment rate of 70%.[8] The impact of RTD as main way of promoting the European economy implies the relevance of technology and know-how transfer and the crucial role of universities and research institutes.

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5 In its enlargement strategy the European Commission presents an overall enlargement policy for the candidate country Croatia and the potential candidate countries in the Western Balkans Albania, Bosnia and Herzegovina, Former Yugoslav Republic of Macedonia, Serbia and Montenegro including Kosovo. See: Progress towards meeting the economic criteria for accession: 2005 Country assessment. European Economy, enlargement papers, No. 26, European Commission, Brussels 2005.

6 Title XVIII, Art. 163-173, Consolidated version of the Treaty establishing the European Community.

7 Presidency Conclusions, Lisbon European Council, March 2000, no: 100/1/00.

8 Ibid.

However, the progress made to fulfil the Lisbon targets was not satisfactory. Expenditure on RTD in the enlarged European Union did not reach 2% of GDP.[9] In 2005, an assessment was made and concrete measures were taken by the European Commission: Beside fixed guidelines for growth and jobs, an European knowledge area should be established to increase and improve investment in RTD.[10] In this context, universities as promoter of knowledge and generator of innovation by research activities have to fulfil a specific role. Main issues are: establishment of a strong link between research and private sector, development of centres of excellence in educational and research institutes, finally, the increase of researcher mobility.

3.3 EU Support for Technology and Know-how Transfer

The European Union provides many funding possibilities to support research and to develop projects. However, European funding is related to different EU policy fields such as research, education, energy etc. and each Commission department responsible runs funding programmes with different funding conditions.[11] Although the funding conditions vary from each grant programme, there are basic principles for European funding:

3.3.1 European Dimension of Partnership

Projects are only eligible for funding if three institutions of three European states form the consortium.[12] The participation of three EU member states can only be considered as the minimum number of participants. The evaluation of many funding programmes shows that much more than only three European countries are needed in order to apply successfully for EU-contribution.

3.3.2 Complementary Financing

Eligible projects are not financed in full. In most cases, the EU grant does not exceed 75%; the consortium has to provide the amount missing to finance the project.

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9 1,97% of GDP within EU15, see: Delivering Lisbon. Report from the Commission to the spring European Council, COM (2004) 29 final.

10 Integrated Guidelines for growth and jobs (2005-2008), Communication to Spring European Council, April 2005.

11 Indirect funding possibilities such as payments under the structural policy (e.g. European regional and development fund or European social fund) are not considered here. Priority is given to the direct funding of Community programmes.

12 Regulation (EC) No 2321/2002 concerning the rules for participation.

3.3.3 European Funding Programmes

Regarding the numerous funding possibilities it is only possible to give a short overview of relevant programmes in the field of research and development.[13] The main funding instrument for research and development is the European framework programme for research and technological development. Based on the treaty establishing the European Union, the framework programme has to serve two main strategic objectives: Strengthening the scientific and technological bases of industry and encourage its international competitiveness while promoting research activities in support of other EU policies.[14] Since 1984 the EU uses such multi-annual programmes to coordinate and give strategic direction to RTD activities of the public and private sector. The sixth framework programme (FP6) running 2002-2006 is continued by FP7 lasting until 2013.[15] The budget of the 7th framework programme amounts 50,5 billion EUR. Research activities in the new framework programme are divided in four specific programmes cooperation, ideas, people and capacities.[16] Similar to FP6 the new framework programme will also support cooperative research of universities and SMEs. The European Commission is aware of the low research capacities of SMEs. Therefore, it introduces the CRAFT programme to enhance the RTD activities of SMEs in order to develop their innovative character. Up to 15% of the research budget shall be given to SMEs.

Additionally, the Competitiveness and Innovation programme (CIP) will support the impact of RTD activities by promoting competitiveness and innovation in Europe.[17] CIP is split in three specific activities: entrepreneurship and innovation programme, Information and Communication Technologies (ICT) policy support programme and Intelligent Energy Europe programme. Regarding the design of the research support policy, a priority is given to an intensive exchange between private and public research. Only by a close cooperation between industry and research institutes or universities technology and know-how transfer are successful and can finally influence the RTD performance of the European Union. In this context, European technology platforms are another important factor to establish strong lines for technology and know-how transfer of the EU member

13 A good overview of European funding possibilities including call for tenders can be found on: http://europa.eu.int/grants/index_en.htm, see also: http://www.eucenter.org/index.php?action=programs.

14 Treaty of the European Union Art. 163-173.

15 Commission Proposal for a seventh framework programme of the European Community for research, technological development and demonstration activities, COM(2005) 119 final and amended proposal of 24.05.2006, COM(2005) 440-445 final.

16 See: http://cordis.europa.eu/fp7/home.html.

17 Commission proposal for a competitiveness and innovation framework programme (2007-2013), COM(2005) 121 final.

states.[18] Within each platform stakeholders from industry, public authorities, academic community, financial community and the civil society, i.e. users and consumers are united in order to develop a common vision and approach for different technologies. At present, there are about 20 platforms established in fields like Nanoelectrics, Aeronautics or Hydrogen and Fuel and there are several on a proposal stage. A specific support mechanism is included in the proposal of FP7: Joint technology initiatives will enhance and strengthen European partnerships with key public and private stakeholders in strategic research fields.

Beside specific research oriented funding programmes support for technology and know-how transfer are also provided by regional policy or in the field of education. In particular, the Community initiative INTERREG supports the development of regional and networking clusters especially in border regions by defining three cooperation strands: cross-border, trans-national and inter-regional.[19] INTERREG projects enhance the transfer of knowledge between regional and public authorities.

Equally, educational programmes which are implemented by the Directorate General Culture and Education, help to exchange knowledge between EU member states.[20]

4 A Proven Example of Successful European Technology and Know-how Transfer: UAS Wildau

The University of Applied Sciences Wildau (UAS Wildau) is one of five universities of applied sciences in the Federal State of Brandenburg and located very close to Germany's capital Berlin. The university has developed an efficient way to exchange its know-how and to implement research results. A European wide network of cooperation partners enabled UAS Wildau to develop successfully European models of technology transfer.

4.1 Profile of UAS Wildau

Emerging from a former engineering school in the German Democratic Republic UAS Wildau was founded in 1991. In line with its origins the degree programmes focused in the beginning on traditional engineering. Adapting to market demand,

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18 Report on European Technology Platforms and Joint Technology Initiatives: Fostering Public-Private R&D Partnerships to Boost Europe's Industrial Competitiveness, SEC(2005) 800.

19 http://europa.eu.int/comm/regional_policy/.

20 Several programmes are under the responsibility of the Directorate General Culture e.g. Sokrates, Leonardo da Vinci, Tempus, etc. see: http://europa.eu.int/comm/education/programmes/programmes_en.html.

the UAS Wildau has developed its profile continuously. Today, the university offers 20 direct degree programmes and 6 distance courses in three faculties: engineering/industrial engineering, business administration/business computing and business/administration/law. In some areas, degree programmes hold an outstanding position: It is the only university in Brandenburg that offers degrees in logistics and the only university of applied sciences that offers biotechnology/biosystems engineering in Germany. With its new degree in aviation engineering/aviation logistics UAS Wildau focuses on future demands in regional and national economic development. Currently, there are 62 professors and more than 3400 students which makes UAS Wildau the largest of the universities of applied sciences in Brandenburg.

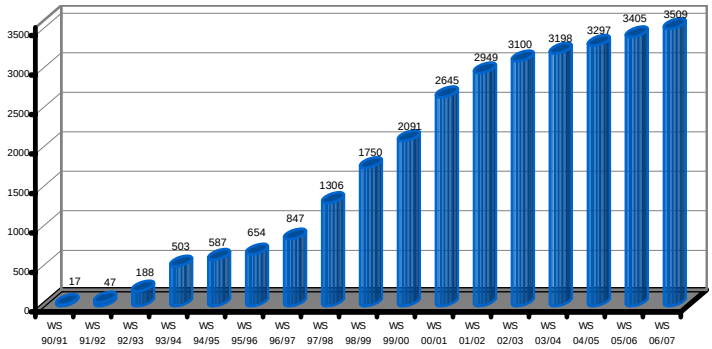

Figure 2
Student development at UAS Wildau since 1990

4.2 Relevance of Applied Research, Technology and Know-how Transfer

Since its foundation in 1991, the University of Applied Sciences Wildau has become a strong regional and national player. In this context, applied research, technology and know-how transfer are important aspects of the university's activities. Due to a strong commitment to the regional and national economic development, technology and know-how transfer are one of the main objectives of UAS Wildau. In its philosophy statement, the University has defined its contribution to successful transfer in two ways: cooperation and partnership.

Cooperation is defined as followed: 'We know that international cooperation and tolerance are the pillars of our future. Our interests have been traditionally concentrated in Eastern Europe and this region continues to play a key role in the international activity of the university, which we are always strengthening and expanding. We strive for dynamic and productive international cooperation.' Under the heading 'Partnership' the following statement is given: 'Our university is a committed and liable partner for business and industry and a motor for

regional growth. Our active support of small and medium sized enterprises and public sector organisations is geared to sustainable ecological, social and economic development.'

On local and regional level, UAS Wildau is strongly engaged in strengthening and increasing its network with partners in all fields of education, research and development. The University plays an important role in the transfer of knowledge, technology and innovation with some focus on SME. Besides, public institutions (employment offices, chambers of commerce and industry, technology parks, business start-up centres) and public administrations (ministries, regional authorities, administrative districts and communities) are strong network partners. The university's role of a regional promoter is strongly committed by the head and staff of the University. This task become more easily regarding the University's location: on a former industrial zone, many small and medium-sized enterprises are established including a technology and incubation centre. The proximity facilitates the transfer and exchange between the universities and local or regional businesses.

The main fields of applied research and development are consistent with the profile of UAS Wildau. Research projects have been implemented in numerous areas such as logistics, material sciences, telematics, process engineering, information and communication technologies or innovation management.

Beside recognition as competent and reliable research and technology partner, the financial effect of research and development projects with external partners for UAS Wildau should not be underestimated. External RTD revenues make up a significant part of the university's budget. In 2005, more than 4.47 Million EUR were obtained through research and technology activities representing 50.8% of UAS Wildau budget.

Compared with the national average for RTD income, the UAS Wildau has achieved very high research revenues. The average of annual RTD income per professor varies between 9,700 EUR and 120,000 EUR.[21] At UAS Wildau a professor gained about 72,500 EUR by external RTD projects in 2005. In comparison to other universities of applied sciences in Germany, the UAS Wildau holds the first place regarding the amount of RTD income per professor.

This analyse proves an efficient and successful way of technology and know-how transfer established and implemented by UAS Wildau. A technology transfer office at the University provides support in relevant questions and helps to establish contact to industry partners or other organisations.[22]

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[21] Forschungslandkarte Fachhochschulen, Potenzialstudie, ed. German Federal Ministry of Education and Research, Bonn, Berlin 2004.

[22] See http://www.tfh-wildau.de/twzev/index.html.

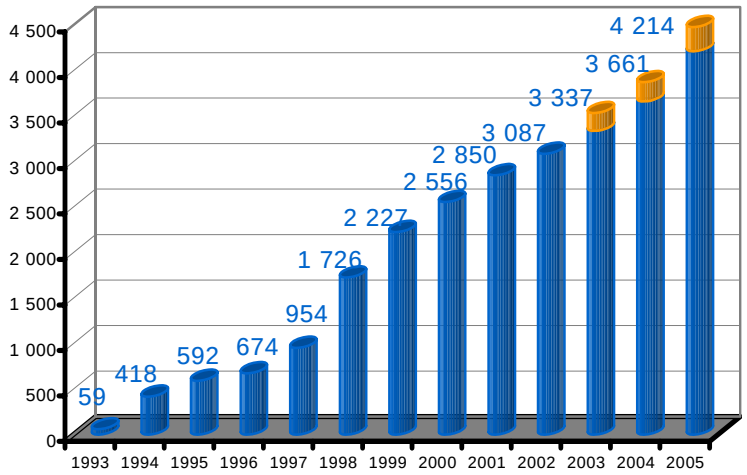

Figure 2
Research and development revenues at UAS Wildau in 1.000 EUR since 1993

4.3 International Dimension

As the university mission statement declares, technology and know-how transfer do not stop at regional or national borders. The university has a strong network of international partners which enables professors of UAS Wildau to implement international and European wide research and development projects.

UAS Wildau signed cooperation agreements with 20 European universities and with three universities outside the EU. The international partner network of the university includes partners from industry and education in Central and Eastern Europe (e.g. Hungary, Lithuania, Poland, Russia, Slovakia), Western Europe (e.g. Austria, Denmark, Finland, France, Ireland, the Netherlands, Sweden and the UK), Asia and Latin America.

To cope with the international dimension of technology transfer, a Service Centre International Knowledge and Technology Transfer was established at the university in may 2004. The office supports professors in international project activities, provide the essential knowledge and resources to manage running projects and search for adequate funding possibilities.[23] This service centre is a unique institution in the federal state of Brandenburg; at other universities similar offices are rarely found. Yet, the need and demand for such specialized offices is evident; UAS Wildau has been a successful pioneer.

[23] See http://www.tfh-wildau.de/sewitec.

4.4 Successful European Cooperation

UAS Wildau has accomplished several projects with international partners that were funded by the European Commission. According to the broad orientation of the university the projects' themes have covered various fields and various funding programmes have been used. Funding initiatives such as the regional programme INTERREG III C or the EU framework programme for research enabled know-how and technology transfer. Some successful examples with the support of Eastern European partners are presented here:

4.4.1 INTERREG III C

The project 'ECO4LOG -Development of an East border corridor 4th party service logistic approach'[24] improves regional and European cooperation in the field of goods traffic in the Eastern European border region. Cooperation and information structures on goods traffic are initiated and developed in order to facilitate public administrations to influence the goods traffic and to promote the use of intermodal systems. Thus, public administrations in the border regions can assume functions as a 4th party logistics service provider. Partners in the following border regions participate in the project: Brandenburg, Saxony and western Poland for the northern border region; Czech republic, Slovakia, Austria, Hungary for the central region and Slovenia and Italy for the south border. UAS Wildau is the coordinator for this two year project that received a total funding of 1.3 Million EUR. Based on the results and knowledge generated by 'ECO4LOG' a new INTERREG III C project has been launched in September 2006: With 'INTERIM - Integration in the intermodal goods transport of non EU states: Rail, Inland/coastal waterway modes' the intermodal transport system and networks will be improved between the partner countries Austria, Bulgaria, Croatia, Rumania and Serbia by using spatial developments instruments. The project is also coordinated by UAS Wildau and is supported with 1.2 million EUR for 24 months.

4.4.2 EUREKA

With partners in Poland, UAS Wildau accomplished another project in the logistic sector. A virtual German-Polish logistic broker system[25] was established and implemented. An innovative service for cross-border traffic between Brandenburg and the Wielko Polska was established within two years. At its core is a logistics and IT system that is being developed for optimized management of goods haulage contracts including planning, interactive dispatching and billing of shipments, especially for small and medium-sized enterprises. This project responds to the new demands in the logistic sector in the integrated European market. It was financially supported by the German and Polish ministries of education and research with about 1.6 Million EUR. In addition, due to its

[24] See http://www.eco4log.de.
[25] See http://www.vdp-system.de.

industrial innovative character, the project received the EUREKA label. Since 1985, the European initiative EUREKA has been supporting market-oriented and industrial RTD projects.[26]

5 Cooperation Potential for 'Old' and 'New' Members

Although the potential to receive European financing for projects are higher for the current member states of the European Union, there are also various possibilities for candidate countries to benefit from European funding programmes. There are specific funding instruments to support the so-called 'pre-accession', i.e. to prepare these countries to their membership in the European Union. These funds support in particular the establishment of administrative structures to cope with the demands of European membership. Currently, a new programme will be implemented: IPA – new instrument for pre-accession assistance runs from 2007 onwards until 2013 in order to support the candidate countries Croatia, Turkey and the former Yugoslav republic of Macedonia as well as the potential candidate countries Albania, Bosnia and Herzegovina, Serbia and Montenegro including Kosovo. IPA replaces the following accession instruments: Phare, ISPA, SAPARD, CARDS and the specific instrument for Turkey.[27] IPA will consist of 5 components e.g. 'Transition assistance and Institution Building' and 'Cross-border and regional cooperation' that will include funding for technology transfer activities.[28] Besides, a financial assistance for the Western Balkans is provided by CARDS - Community Assistance for Reconstruction, Development and Stabilisation.[29] It seeks to promote stability within the region whilst also facilitating closer association with the European Union. Beside institution building and investment, promotion of closer relations and regional cooperation among countries and between them, the EU and the candidate countries of central Europe is envisaged. All these instruments facilitate to experience European cooperation: establishing contacts in order to build up partnerships with universities, research institutes or enterprises of EU member states are one of the main focus of these programmes. If accession to the European

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26 See http://www.eureka.be.

27 Commission Communication on the Instruments for External Assistance under the Future Financial Perspective 2007-2013. COM(2004) 626.

28 Commission Proposal establishing an Instrument for Pre-Accession Assistance (IPA). COM(2004) 627.

29 COUNCIL REGULATION (EC) No 2666/2000 of 5 December 2000 on assistance for Albania, Bosnia and Herzegovina, Croatia, the Federal Republic of Yugoslavia and the Former Yugoslav Republic of Macedonia, repealing Regulation (EC) No 1628/96 and amending Regulations (EEC) No 3906/89 and (EEC) No 1360/90 and Decisions 97/256/EC and 1999/311/EC.

Union become closer, partners are already experienced and know about the advantages and difficulties of European cooperation and European oriented technology and know-how transfer.

Conclusion

The example of UAS Wildau demonstrates the advantages of European technology and know-how transfer: A European consortia provides extensive solutions for technological problems and the project results' impact is very broad. Moreover, the financial support of European funding programmes is considerable and the project consortia benefits from European wide dissemination measures.

However, European technology and know-how transfer by European projects is pretentious. Firstly, in order to apply for funding, European projects need long planning in advance and the search for competent European partners is not easy. Secondly, the implementation of common projects is quite demanding. Each partner needs to prove strong responsibility and liability. Having acted as coordinator, UAS Wildau developed strong management competencies to handle diverse partner consortia. Regarding the enlargement of the European Union, UAS Wildau is eager to integrate new member states in European projects, although these partners need to modify their understanding of liability and sense of responsibility within a international consortia. Nevertheless, the enlargement of the European Union raises new possibilities for an extensive European wide technology and know-how transfer which results in innovative solutions. By building up common networks it is taken for granted that the old and the new member states need to learn about their competencies, qualifications and particularities. The overall basis for this approach is definitely, the human factor: exchange and personal contacts help to establish strong networks which are indispensable for successful technology and know-how transfer.

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[5] Commission Proposal for a seventh framework programme of the European Community for research, technological development and demonstration activities, COM(2005) 119 final

[6] Consolidated version of the Treaty establishing the European Community

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