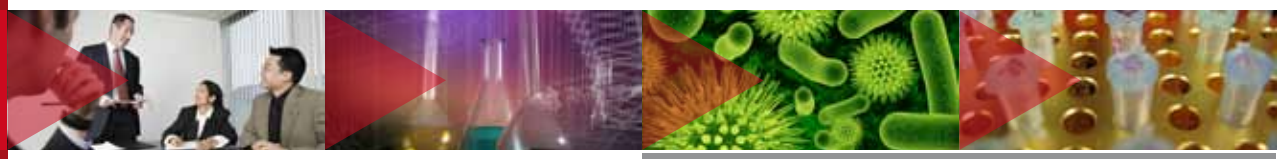
swiTTreport 2010

swiTT
swiss technology transfer association



SWISS TECHNOLOGY TRANSFER REPORT

IMPRESSUM

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SWITT

swiTT, the Swiss Technology Transfer Association, is the association of the professionals in Switzerland dealing with the interaction between public research and industry. swiTT currently has about 100 members from all parts of Switzerland. Most of them work in technology transfer at public research institutions, others are employed in the private sector. For further information about swiTT, please refer to www.swiTT.ch.

Among other services, swiTT operates swiTTlist, a unique portal which lists technology opportunities from public research institutions available for licensing and development by industry. For further information please refer to www.swiTTlist.ch.

SWITT MISSION

COOPERATION – DEVELOPMENT – SERVICES - DIALOGUE

- Facilitates and strengthens cooperation and technology transfer between Swiss public research institutions and the private sector; (COOPERATION)
- Offers professional development to its members and other practitioners involved in technology transfer within public institutions and the private sector; (DEVELOPMENT)
- Provides services of common interest to its members, their institutions and other stakeholders involved. (SERVICES)
- Maintains an active dialogue with research institutions, the private sector and the authorities to foster optimal processes and regulatory framework / regulations. (DIALOGUE)

SUMMARY

The annual survey „swiTTreport" is the most comprehensive analysis of the technology transfer activities of Swiss public research institutions. The report covers two main areas, a) research collaborations of the participating institutions with private or public partners, and b) the activities for the economic exploitation of research results from these institutions. The Swiss public research institutions interact very actively with partners in the economy. These activities are collectively designated in the report as "technology transfer" (TT) activities. With regard to scientific disciplines, the report mainly focuses on the areas of life sciences, natural sciences and engineering sciences.

Data on technology transfer activities from seven cantonal universities and the two Federal institutes of technology (collectively Universities), from six universities of applied sciences (UAS), and three research institutions in the ETH domain (RI) were available for this years' report. However, some of the data were incomplete or fragmentary, and the figures presented in this report clearly underestimate the real situation. Data from several institutions were not available or were too fragmentary to be included in the report. In most figures, the data for 2009 are compared with the data from previous years although the institutional basis is not always the same.

The respondents reported their results to swiTT voluntarily, and the data presented in the report are on an "as-reported" basis. For reasons of confidentiality, the report mainly contains aggregated numbers. However, some of the key parameters are presented on an individual basis but only for those institutions that agreed to do so. On account of the difference in mission, organization and objectives of the three types of institution (Universities, UAS, RI), their data are reported separately.

Overall, the respondents reported the following key figures on technology transfer activities in 2009:

2855 new research projects with economic partners were initiated

446 invention disclosures were registered

195 priority patent applications were filed

191 license and option agreements were executed

66 start-up companies were created, of which 45 were based on a license or transfer of IP and 21 on know-how from the institutions

A conservative extrapolation of the partial data received shows that the institutions covered in this report overall started more than 4'000 new research projects with external business partners last year. Larger companies (>250 employees) are the most common cooperation partners of the Universities whereas the UAS most often cooperate with small and medium-sized enterprises (SME). At he RI the majority of partners are public institutions.

Universities account for most of the commercialization activities reported, i.e. about 82% of all patent applications filed, 87% of the licenses concluded and 85% of the start-ups that were created. Commercialization occurs most frequently with SME, including start-ups (61%). In about 25% of the cases the partner was a large company, in 14% it was another public institution.

Numerous studies confirm the collaborative culture between academia and industry in Switzerland and the excellent technology transfer performance of Swiss universities and other public research institutions. Easy access to academic researchers and well defined technology transfer processes are important criteria for companies to relocate their business to Switzerland. Maintaining a system which is based on fair partnership between academia and industry together with the continuous optimization of processes will be important aspects to further strengthen Switzerland's leading position in the international context.

RÉSUMÉ

L'enquête annuelle «swiTTreport» est l'analyse la plus complète des activités de transfert de technologies réalisées par les institutions de recherche publiques suisses. Le rapport couvre deux domaines majeurs: a) la collaboration en matière de recherche des institutions participantes avec des partenaires privés ou publics et b) les activités liées à la commercialisation des résultats de recherche obtenus par ces institutions. Les institutions de recherche publiques suisses coopèrent très activement avec des partenaires économiques dans ce que le rapport désigne collectivement sous le terme d'activités de "«transfert de technologies» (TT). S'agissant des disciplines scientifiques, l'accent est mis principalement sur les sciences de la vie, les sciences naturelles et l'ingénierie.

Le rapport de cette année s'est appuyé sur les données relatives aux activités de transfert de technologies de sept universités cantonales et deux écoles polytechniques fédérales (ci-après collectivement les «universités»), de six universités de sciences appliquées («UAS») et de trois institutions de recherche dans le domaine EPF («RI»). Certaines données étaient toutefois incomplètes ou fragmentaires si bien que les chiffres présentés dans ce rapport sous-estiment clairement la situation réelle. Par ailleurs, les données de plusieurs institutions n'étaient pas disponibles ou étaient trop fragmentaires pour être incluses dans le rapport. Dans la plupart des cas, les chiffres de 2009 sont comparés avec les données des années précédentes, bien que la base institutionnelle ne soit pas toujours la même.

Les personnes interrogées ont communiqué volontairement à swiTT leurs résultats qui sont présentés dans ce rapport tels que rapportés. Pour des raisons de confidentialité, le rapport contient principalement des chiffres agrégés. Certains des paramètres clés sont toutefois présentés individuellement si les institutions ont donné leur accord. Compte tenu des différences de mission, d'organisation et d'objectifs des trois types d'institutions (universités, UAS, RI), leurs données sont présentées séparément.

Dans l'ensemble, les personnes interrogées ont communiqué les chiffres clés suivants sur les activités de transfert de technologies en 2009:

2855 nouveaux projets de recherche ont été lancés avec des partenaires économiques

446 annonces d'inventions ont été enregistrées

195 demandes de brevet prioritaires ont été déposées

191 contrats de licence et d'option ont été exécutés

66 start-up ont été créées dont 45 étaient fondées sur une licence ou un transfert de PI et 21 sur le savoir-faire des institutions

D'après une extrapolation conservatrice des données partielles reçues, les institutions couvertes dans ce rapport ont dans l'ensemble démarré plus de 4000 nouveaux projets de recherche avec des partenaires d'affaires externes l'an dernier. Les sociétés de taille plus grande (>250 employés) sont les partenaires de coopération les plus communs des universités, tandis que les UAS coopèrent plus souvent avec des petites et moyennes entreprises (PME). Dans le cas des RI, la majorité des partenaires sont des institutions publiques.

Les universités sont responsables de la plupart des activités de commercialisation rapportées, à savoir environ 82% de toutes les demandes de brevet déposées, 87% des accords de licences conclus et 85% des spin-offs créées. Dans 61% des cas, leur partenaire était une PME ou une spin-off, dans environ 25% des cas, une grande société et dans 14% des cas, une autre institution publique.

D'innombrables études confirment la culture de collaboration entre les milieux universitaires et économiques en Suisse et l'excellente performance des universités et autres institutions de recherche publiques suisses dans le domaine du transfert de technologies. La facilité d'accès aux chercheurs universitaires et l'existence de processus clairement définis en matière de transfert de technologies constituent des critères importants pour les entreprises envisageant de déménager leurs activités en Suisse. A cet égard, le maintien d'un système fondé sur un partenariat équitable entre les milieux universitaires et économiques, ainsi que l'optimisation continue des processus seront des aspects essentiels pour renforcer davantage la position de leader de la Suisse à l'échelle internationale.

ZUSAMMENFASSUNG

Der jährlich publizierte "swiTTreport" ist die umfassendste Analyse der Aktivitäten der öffentlichen Forschungsinstitutionen (PRO) in der Schweiz in den Bereichen Zusammenarbeit mit der Wirtschaft und wirtschaftliche Umsetzung von Forschungsresultaten. Diese Aktivitäten werden häufig auch unter dem Begriff „Technologietransfer" zusammengefasst. Der Bericht zeigt, dass die schweizerischen PRO sehr aktiv und erfolgreich mit der Wirtschaft interagieren. Die in der Analyse erhobenen Daten beziehen sich vorwiegend auf die Fachbereiche Life Sciences, Naturwissenschaften und Ingenieurwissenschaften.

Der Bericht umfasst die Aktivitäten von sieben kantonalen Universitäten und der beiden ETH's (zusammengefasst unter "Universitäten"), von sechs Fachhochschulen („UAS") und von drei Forschungsinstitutionen des ETH-Bereichs („RI"). Allerdings waren von einigen Institutionen nur Teildaten aus einzelnen Bereichen bzw. generell sehr fragmentarische Angaben verfügbar, so dass die effektiven Aktivitäten substanziell höher sind, als in diesem Bericht zusammengefasst. Daten einiger Institutionen waren so unvollständig, dass sie gar nicht berücksichtigt werden konnten. Dies führt dazu, dass die Daten mit jenen von früheren Jahren teilweise nur beschränkt vergleichbar sind.

Die teilnehmenden Institutionen rapportierten die Resultate an swiTT auf freiwilliger Basis und die Daten wurden wie berichtet verwendet. Aus Vertraulichkeitsgründen enthält der Bericht vorwiegend aggregierte Zahlen. Einige Kennzahlen werden jedoch zum ersten Mal auf individueller Basis publiziert, allerdings nur für jene Institutionen, die einer solchen Publikation zugestimmt haben. Die Daten der unterschiedlichen Arten von Institutionen (Universitäten, UAS, RI) werden im Bericht separat zusammengefasst.

Insgesamt rapportierten die teilnehmenden Institutionen die folgenden Kennzahlen über ihre Technologietransferaktivitäten im Jahr 2009:

2855 neue Forschungsprojekte mit Wirtschaftspartnern gestartet

446 Erfindungsmeldungen registriert

195 Prioritäts-Patentanmeldungen eingereicht

191 Lizenz- und Optionsverträge bzw. IP-Verkäufe abgeschlossen

66 Start-up Firmen wurden gegründet, 45 davon auf Basis einer Nutzungsvereinbarung für geistiges Eigentum mit der entsprechenden Institution und 21 basierend auf Know-how

Da die Daten verschiedener Institutionen unvollständig sind, kann bei einer konservativen Extrapolation davon ausgegangen werden, dass an den teilnehmenden Institutionen 2009 über 4000 neue Projekte mit Wirtschaftspartnern gestartet wurden. Grosse Firmen (>250 Mitarbeiter) sind die häufigsten Kooperationspartner der Universitäten. Die UAS arbeiten am häufigsten mit KMU zusammen und die RI mit anderen öffentlichen Institutionen.

Die Universitäten sind für meisten Aktivitäten im Bereich der wirtschaftlichen Umsetzung von Forschungsergebnissen verantwortlich (80-90%). Bei den Partnern in diesem Bereich handelt es sich mehrheitlich um KMU, inkl. Start-ups (61%). In 25% der Fälle waren es grössere Firmen und in 14% Institutionen aus dem öffentlichen Bereich.

Diverse Untersuchungen bestätigen die kooperative Kultur zwischen Industrie und Hoch¬schulen in der Schweiz und die ausgezeichneten Transferleistungen der öffentlichen Forschungsinstitutionen. Der einfache Zugang zu akademischer Forschung und gut etablierte Transferprozesse sind auch ein wichtiges Kriterium für den Standortentscheid von Firmen. Die weitere Stärkung des partnerschaftlichen Verhältnisses zwischen Hochschulen und Industrie und der entsprechenden Prozesse sind wichtig, um die führende Rolle der Schweiz in diesem Bereich auch künftig beibehalten zu können.

1. INSTITUTIONS PARTICIPATING AND DATA COLLECTION

Eleven universities and the two Swiss Federal Institutes of Technology (collectively 'Universities'), seven Universities of Applied Sciences (UAS), and three research institutes (RI) in the ETH domain were contacted in spring of 2010 and asked to provide data on their technology transfer (TT) activities for the year 2009. The expression "technology transfer" used in this report covers the activities of these institutions with regard to research collaborations with partners from the economy and the commercialization of research results for the benefit of the economy and society overall.

The questionnaire was returned by seven Universities, individual departments of six UAS, and by three RI. However, the handling of research collaborations with economic partners and other technology transfer activities varies a lot among different institutions, and not all of them were able to provide comprehensive data in this field. **Thus, the data provided in this report are not complete and only summarize the figures reported, while the actual activities at the interface of academia and economy are considerably higher.** Table 1 on the next page shows the institutions that participated in the survey and comments on the comprehensiveness of the data provided.

Comments on data received by the different types of institutions:

Universities: At several Universities, contracts for collaborative research projects with economic partners need only to be signed by university management above a certain amount. Therefore, not all small projects were reported by such institutions. At some Universities, technology transfer offices (TTO) only handle a small part of the collaborative research projects with economic partners; and at some Universities, centralized TTO were created only recently. Activities in research and technology transfer at university hospitals are usually closely linked to the respective University, hence the services of these transfer offices are also available to researchers at the hospitals. Data from the hospitals are included in the report, but not all are complete. With several hospitals, especially clinical research activities are not included.

CASE

SMARTPILOT® VIEW – COCKPIT FOR ANAESTHETISTS

u^b UNIVERSITÄT BERN

INSELSPITAL

Problem

Up to now, it was not possible to visualise the interactions between analgesics (opioides) and sedatives (hypnotics) and to show the anaesthetist at which stage of the anaesthesia the patient is and will be.

Dräger Medical's SmartPilot® View is a software, which, for the first time, provides a two-dimensional representation of the current and the forecasted course of anaesthesia. Similar to a GPS device, this "map of anaesthesia" shows the anaesthetist at which stage of the anaesthesia the patient is. Like a pilot, the software supports the anaesthetist in optimally guiding the patient through the anaesthesia.

Dräger SmartPilot® View is an assistance system, which supports anaesthetists in making decisions, but does not make decisions for them.

Solution

SmartPilot View displays all information required for controlling the anaesthesia at a glance: In addition to the measured parameters, for example pulse rate and blood pressure, the software also displays the chronological sequence of the applied pharmaceuticals and their effects in a two-dimensional representation. The idea of this representation is based on the cockpit of an aeroplane. This means that the anaesthetist sees precisely – like a pilot – at which calculated stage of the anaesthesia the patient is just now and what the prediction for the immediate future will be.

The technology underlying the SmartPilot® View was developed in a collaboration between Dräger Medical, Lübeck and the University Clinic of Anaesthesiology of the University Hospital Bern with Dr. Peter Schumacher and PD Dr. Martin Luginbühl.

UAS: The management of technology transfer activities at the UAS varies widely. Some departments or schools have professionals working in centralized TTO (e.g. BFH) and are able to provide comprehensive data. At other departments or schools, no centralized support functions exist and data are fragmentary or are completely lacking.

RI: The research institutions that participated in the survey have centralized support functions providing technology transfer services for the researchers although the scope of services provided differ.

swiTTreport represents the most comprehensive study in Switzerland on technology transfer activities of academic and other public research institutions. The report mostly provides aggregate data for the three types of institutions covered in this survey. For those institutions that agreed to disclose individual data some key figures are listed on page 23.

Table 1: Institutions participating in the survey and comments on their data provided.

Institution	Technology Transfer Office (TTO)	Comments on data provided
Universities		
ETH Zürich	ETH transfer	Complete data, research agreements < 50k CHF only partly
EPF Lausanne	EPFL-SRI	Complete data, research agreements < 50k CHF only partly
Universität Basel / Universitätsspital Basel	TTO	Complete data for university, incomplete data for hospital
Universität Bern / Inselspital	Unitectra	Complete data only for the Medical, Vetsuisse and Nat.Science Faculties, no data for research agreements of other faculties
University of Fribourg	TTO	Incomplete Data available
Université de Genève / Hôpitaux Universitaires de Genève	Unitec	Complete data for commercialization activities, research contracts only partly handled by TTO
Université de Lausanne / Centre Hospitalier Universitaire Vaudois Lausanne	Pactt	Complete data for commercialization activities, research conracts only partly handled by TTO
Université de Neuchâtel	TTO	Fragmentary data, research contracts only partly handled by TTO
University of St. Gallen	TTO	No data available
Università della Svizzera italiana	TicinoTransfer	No data available
Universität Zürich / Universitätsspital	Unitectra	Complete data only for the Medical, Vetsuisse and Nat.Sciences Faculties, no data for research agreements of other faculties
Universities of Applied Siences		
Berner Fachhochschule	TTO's	Data only cover the departments 'Technik und Informatik' and 'Architektur, Holz und Bau'
Fachhochschule Nordwestschweiz (FHNW)	TTO	Data available form the department 'Life Sciences', no data available for the department 'Technik'
Fachhochschule Ostschweiz	TTO	No data available
Zürcher Fachhochschule	ZHAW Winterthur	Data only available from 'Zürcher Hochschule für Angewandte Wissenschaften (ZHAW)'
Hochschule Luzern	ITZ - Innovations Transfer Zentralschweiz	Data only available from the department 'Technik und Architektur'
Haute Ecole Spécialisée de Suisse Occidentale (HES-SO)	TTO	Data only cover EIA-FR (Part of HES-SO)
Scuola Universitaria Professionale della Svizzera Italiana (SUPSI)	Ticino Transfer	Complete data
Research Institutes		
Paul Scherrer Institut	TTO	Complete data on research projects, partial data on IP
Empa Swiss Laboratories for Materials Science and Technology	TTO	Complete data
Eidgenössische Anstalt für Wasserversorgung, Abwasserreinigung und Gewässerschutz, Eawag	Eawag, Wissenstransfer	Complete data

2. INSTITUTIONAL RESOURCES FOR TECHNOLOGY TRANSFER

2.1 Services Provided

All TTO at the Universities are handling contracts for research collaborations. However, at several Universities, the finalization of research agreements by the central office is only voluntary. All TTO deal with the management and commercialization of intellectual property (IP), which includes the evaluation of the economic value of research results, the protection and management of IP, and the licensing or sale of IP to industrial partners. Five of seven TTO at Universities also provided support for the coaching of start-up projects and at a further University such support is available through an incubator associated with the institution. At a few Universities TT programs still are very small and focus on few services.

The participating UAS and RI all offer support in research collaborations. Five UAS are dealing with IP management and commercialization. However, this does not apply to all individual departments or schools of the UAS. Two RI support the management and commercialization of IP. Coaching of start-up projects is offered by four UAS and one RI.

CASE

A NEW CHALLENGE IN MEDICINE: DISCOVERY OF NOVEL THERAPEUTIC LEADS

UNIL | Université de Lausanne

SELEXIS

Problem – Challenge

The challenge of any protein therapeutic development campaign is to rapidly identify optimal clinical candidate(s) that can be stably produced at high levels in the manufacturing cell line.

To achieve this goal, the current approaches are based on the transient expression of the lead candidate(s) and stepwise selection by expression level and then the required biological activity. In addition, the overall cell line development process is compromised by the use of different recipient cell lines for discovery and manufacturing, a limited number of variants expressed simultaneously, labor-intensive screening process and long timelines.

Solution

Selexis, a start-up of the University of Lausanne, pioneered the novel Selexis D2 Platform™ to overcome these hurdles. This CHO cell-based platform takes advantage of Selexis Genetic Elements™ boosting protein expression to enable:

- *Selection based on both titer and activity*
- *Screening of 10 – 1000 protein variants*
- *Use of the same mammalian cell line along the whole process*
- *Reduced timelines and costs*
- *Earlier clinically relevant data*

Most importantly, Selexis D2 Platform™ decreases the attrition rates today observed in Discovery to identify new therapeutic entities in medicine.

Case Study: Screening and identification of a new therapeutic neutralizing antibody

A CHO-based (Chinese Hamster Ovarian) combinatorial repertoire containing 10 heavy chains (HC) and 25 light chains (LC) was established. The objective was the identification of the best neutralizing antibody against an infectious agent. Each antibody gene was cloned into a Selexis SUREtech DNA expression vector, and a combinatorial transfection (10 VH x 25 VL) generated a library of 250 antibody-CHO expressing cell pools. By applying Selexis D2 Platform™ the library was constructed and assayed in only 8 weeks from the transfection date. Both the titer and the neutralizing activity were measured during this period of time. Based on these criteria the three best candidates out of the 250 were expanded to generate high producing cell clones.

2.2 Staffing

Staffing refers to the number of full-time equivalents (FTE) employed for TT activities at an institution. These are people such as Licensing Officers, Intellectual Property Managers, Technology Managers or Research Contract Officers, whose main occupation is in the area of technology transfer. Their activities cover the drafting and negotiating of research and cooperation agreements, intellectual property management, licensing and other commercialization activities, and the coaching of start-up projects. TT activities must account for at least 20% in this person's job description.

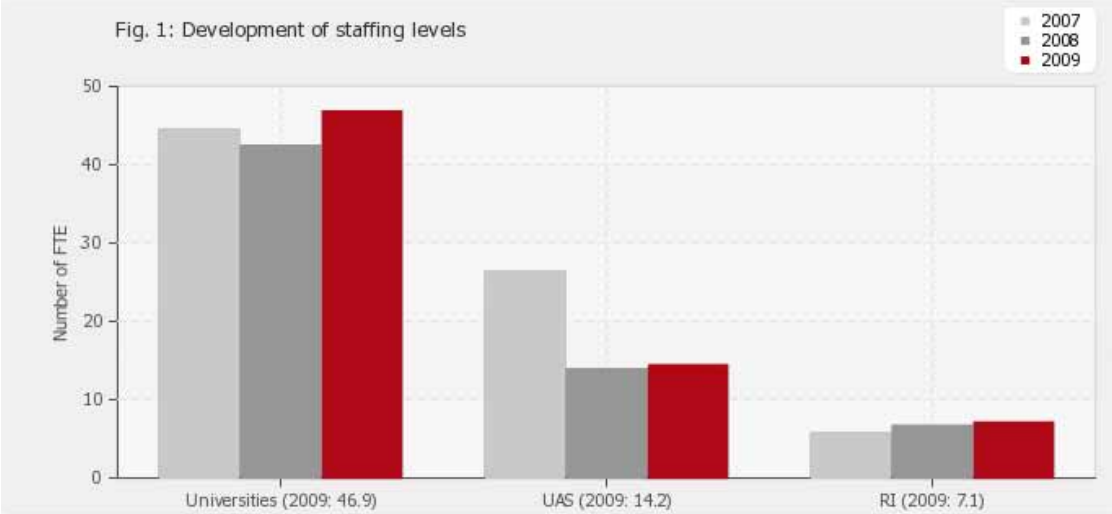


Fig. 1: Development of staffing levels.

Respondents 2007: 10/10 Universities, 7/7 UAS, 2/2 RI
Respondents 2008: 8/8 Universities, 6/6 UAS, 3/3 RI
Respondents 2009: 9/11 Universities, 6/6 UAS, 3/3 RI

The total number of FTE in technology transfer at the participating institutions was 68.2 compared to 63 in the previous year. The total number of FTE at the Universities which participated already in last year's survey increased by 10%. The largest TTO had 12.4 FTE. The number of FTE at the UAS and the RI was similar as in 2008. Swiss TTO thus remain small in comparison to TTO in other countries if the size is normalized to the number of researchers. On the other hand, the Swiss TT professionals are on average better educated and possess more working experience in industry.

TTO usually collaborate with external patent attorneys in the drafting and filing of patent applications. Several TTO also outsource legal issues to external attorneys. At some institutions, start-up projects are handled by dedicated organizations such as a business incubator. Thus, the actual number of people supporting the transfer activities is larger than the number of FTE reported for the TTO.

3. RESEARCH COLLABORATIONS WITH PARTNERS FROM THE ECONOMY

3.1 Research Agreements Handled by the TTO

In 2009, the TTO handled contracts for a total number of 2855 research projects with economic partners. This number is slightly bigger than the number reported for the previous year (+4%). However, in view of the incomplete data provided by the institutions the comparison of such figures remains difficult.

For the Universities the number of new co-operative research projects increased to 2120 (+12%). The trend for more projects observed already in previous years thus continued. This is true for all institutions that reported data for 2008 and 2009. The RI reported 416 (+5%) projects the participating UAS 319. A high percentage of UAS institutions have no central data available about their TT activities or at least are not willing to share the data. Therefore, the figure cannot be compared with previous years. The lack of data results in a significant underestimation of the real situation. The true number of collaborative research projects is a lot higher than reported here.

Research collaborations between academia and industry are a key aspect of TT, offering a multitude of potential benefits to both parties. They not only allow industry to access the know-how and infrastructure of academia, companies also gain access to young academic talents through such collaborations. At the same time, the academic partner can often take advantage of the know-how of the industrial partners. In addition, the funding of joint projects by industry and partners from the economy accounts for a significant part of the research budgets of public research institutions.

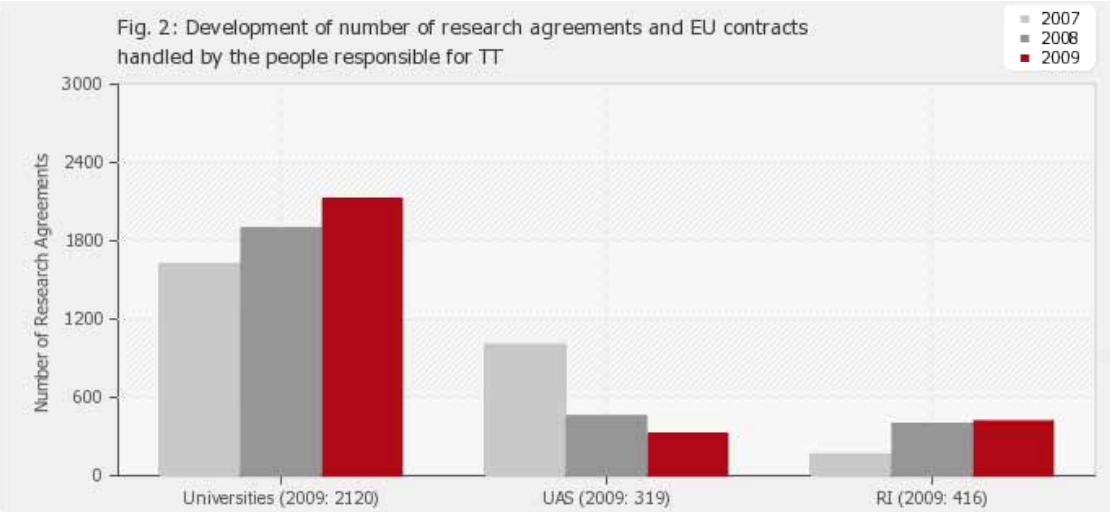


Fig. 2: Development of number of research agreements and EU contracts handled by the people responsible for TT.

Respondents 2007: 10/10 Universities, 7/7 UAS, 2/2 RI
Respondents 2008: 8/8 Universities, 6/6 UAS, 3/3 RI
Respondents 2009: 9/10 Universities, 6/6 UAS, 3/3 RI

For the collaborative research projects handled by the TTO, survey respondents reported total cash contributions from collaboration partners in 2009 of 364 mio CHF. The average cash payment per project is 127,400 CHF. The contribution per project at Universities was about twice as high as for the projects at the UAS or the RI.

In addition to research collaborations, TTO handle other types of agreements which foster the cooperation between academia and economic partners, such as consulting agreements, material transfer agreements (MTA), and non-disclosure agreements (NDA). In 2009, the institutions reported altogether 1494 such other types of TT agreements

CASE

SENSIMED SA
MONITORING INTRAOCULAR PRESSURE

ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE

SENSIMED
innovation in medical micro-technology

Established in 2003, SENSIMED SA is a Swiss company with its principal focus on design, development and commercialization of integrated micro-systems for medical devices. SENSIMED is a spin off from the Ecole Polytechnique Fédérale de Lausanne (EPFL) and grows within a world-leading cluster for medical devices in the lake of Geneva area. SENSIMED has developed and is now selling a patented and breakthrough non-invasive contact lens device with an embedded microprocessor that will significantly improve identification and treatment of glaucoma disease by monitoring intraocular pressure around the clock (SENSIMED Triggerfish®). The initial concept of the gauge on the eye lens and the first developments are arising out of the research group headed by Professor Philippe Renaud (Laboratoire de microsystèmes).

Glaucoma is an asymptomatic, progressive and irreversible disease which leads to blindness unless adequate treatment is provided. Glaucoma is the second most common cause of blindness worldwide and affects about 68 million people. Intraocular pressure is one of known causes of glaucoma. This behaviour is individual, has transient peaks and varies significantly over a 24 hour period. By providing ophthalmologists with the 24-hour profile of fluctuations in intraocular pressure, the SENSIMED Triggerfish® fulfill doctor's need to better understand the condition of the patient, to provide personalized treatment, and to monitor the efficacy of the treatment over time.

3.2 Type of Collaboration Partners

With regard to the type of collaboration partner, the small- and medium-sized enterprises (SME), i.e. companies with fewer than 250 employees, account for 20% of total projects reported. A higher number (34%) of projects were performed with large companies, and 40% with public institutions. In 6% of cases the type of partner was not specified. If one considers only collaborative projects with the private sector SME account for more than one third of all projects (36%).

These ratios vary considerably among the different type of institutions surveyed as shown by Fig.3. At UAS the most important collaboration partner (55%) are SME whereas collaborations with Large Companies are relatively rare (10%). At the Universities Large Companies are the most frequent partner (41%) and the RI most frequently collaborate with other public institutions (55%)

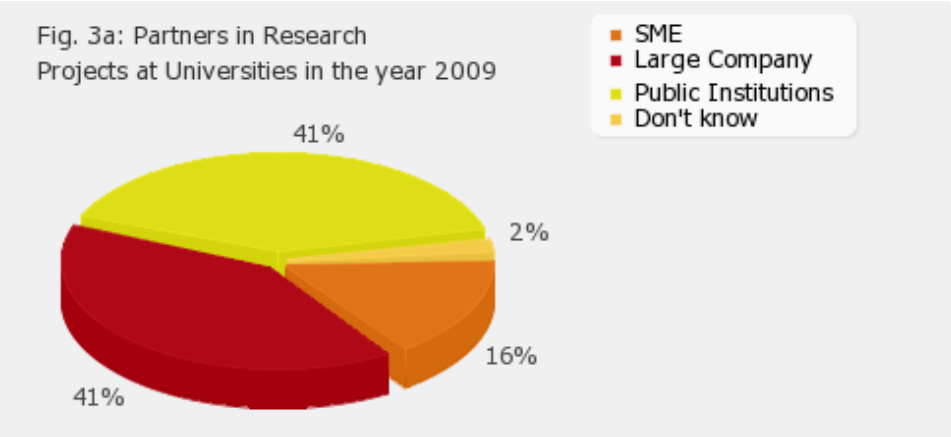


Fig. 3a: Partners in Research Projects at Universities (9/10 respondents).

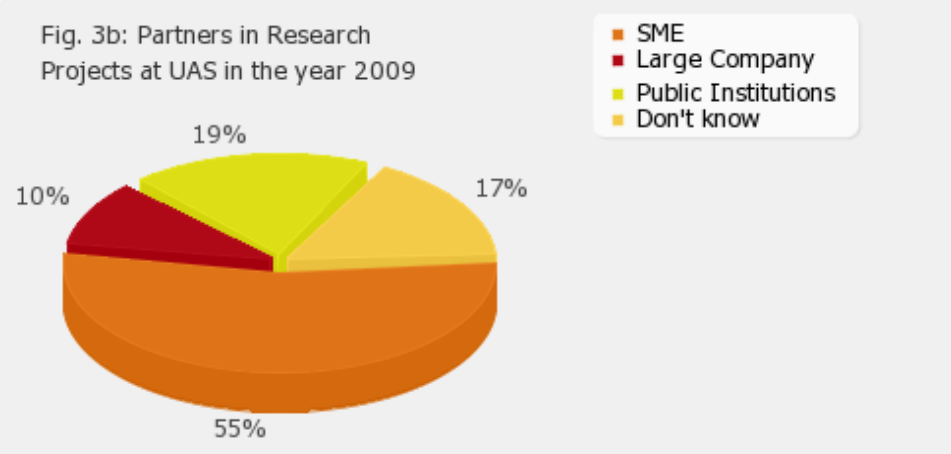


Fig. 3b: Partners in Research Projects at UAS (6/6 respondents).

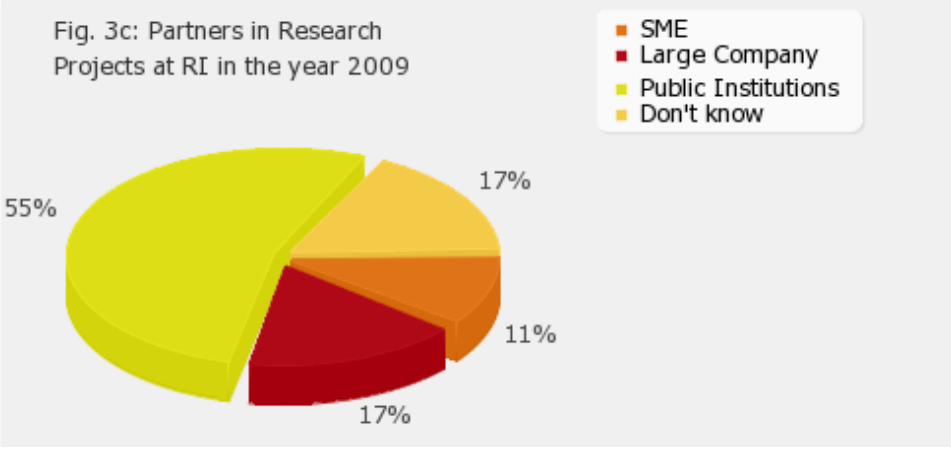


Fig. 3c: Partners in Research Projects at RI (3/3 respondents).

4. COMMERCIALIZATION ACTIVITIES

Research results of Universities, UAS and RI often form the basis for innovative products which are developed and later commercialised by companies based on the work performed at public research institutions. The public institutions strive to make available research results with an economic potential to the private sector. Most frequently this is done through licensing of technologies to companies. Relevant research results need to be identified, screened and where applicable protected by patents or other suitable measures. Without a good protection of the intellectual property industrial or financial investors in many industrial sectors will not consider investing.

This whole process involves the following main steps: identification and evaluation of research results through invention disclosures, filing of patent applications, negotiating license agreements with existing companies or newly created start-up companies. At many institutions, the creation of such start-up companies is supported by various additional services. In Sections 4.1 - 4.4., the main activities of the institutions participating in this report are described.

The Swiss National Science Foundation (SNF) is the main funding institution for basic research in Switzerland. An analysis of the collected data in this report shows that SNF-supported basic research projects regularly evolve towards application and lead to results which are of practical and commercial value. The Universities reported that of the newly patented inventions 18 applications (11% of total applications filed) were based on projects significantly funded by SNF. In addition, 24 licenses concluded (14% of total) and five newly created start-up companies (9% of total) resulted from such SNF-funded projects at the Universities.

CASE

PV*syst* – REFERENCE SOFTWARE FOR PHOTOVOLTAIC SYSTEMS

UNIVERSITÉ DE GENÈVE

Problem – Challenge

With the increasing pressure of energy availability and environmental impact, a steady growth of individuals, firms, investors and public communities are now engaged in developing Photovoltaic systems and plants.

Concomitant with this rising activity is the growing need for efficient models able to simulate with good predictability the performance of such systems.

With the wealth of technologies, geometries, and configurations, being able to evaluate and optimize the output through careful selection of the adequate configuration is a big challenge. This should take into account external factors such as solar resource and exposure, shadings, temperature, wind, and provide an accurate simulation - a hot topic for engineers worldwide.

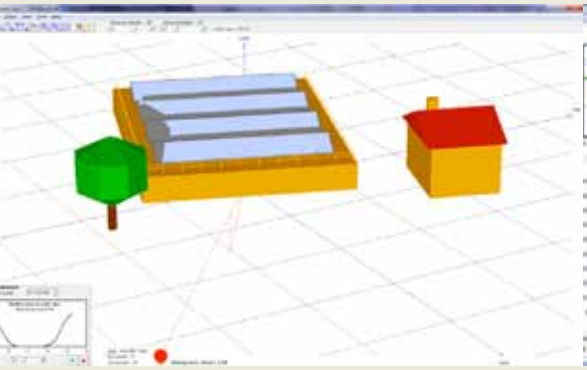
Solution

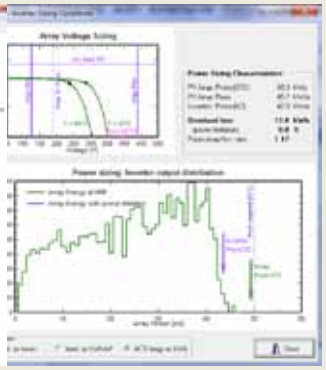
PVsyst is a software package for the study, sizing, simulation and data analysis of complete Photovoltaic systems. It is the result of almost two decades of development led by Dr. André Mermoud, in the Energy group of the Institute of Environmental Sciences (University of Geneva, Prof. B.Lachal).

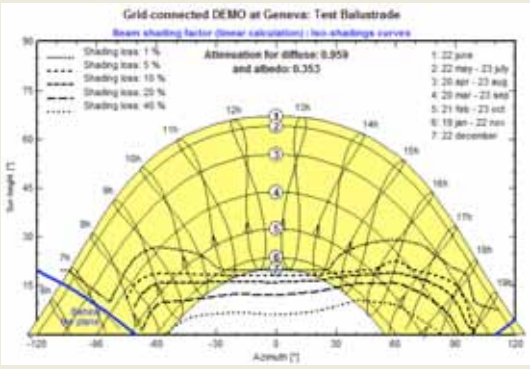
Through its unique combination of elaborate physical models and breadth of parameters, it has become the reference software worldwide for architects, engineers and others professionals involved in photovoltaic system design and planning.

Among its features, the 3D simulation allow for precise evaluation of shading effects that can be combined with extensive meteo data to obtain reliable results.

PVsyst is now in operation in 2'800 firms in 60 countries worldwide (7'000 registered users).







4.1 Invention Disclosures

A total number of 446 invention disclosures were reported for 2009 which is slightly more than in the previous year. The vast majority of invention disclosures were reported by Universities (91%). The three RI accounted for 6% of the invention disclosures, the UAS for 3%. Many UAS do not have a formal process for the commercialisation of the research results. In addition, UAS often transfer the rights to research results created in the scope of collaborations to the industrial partner.

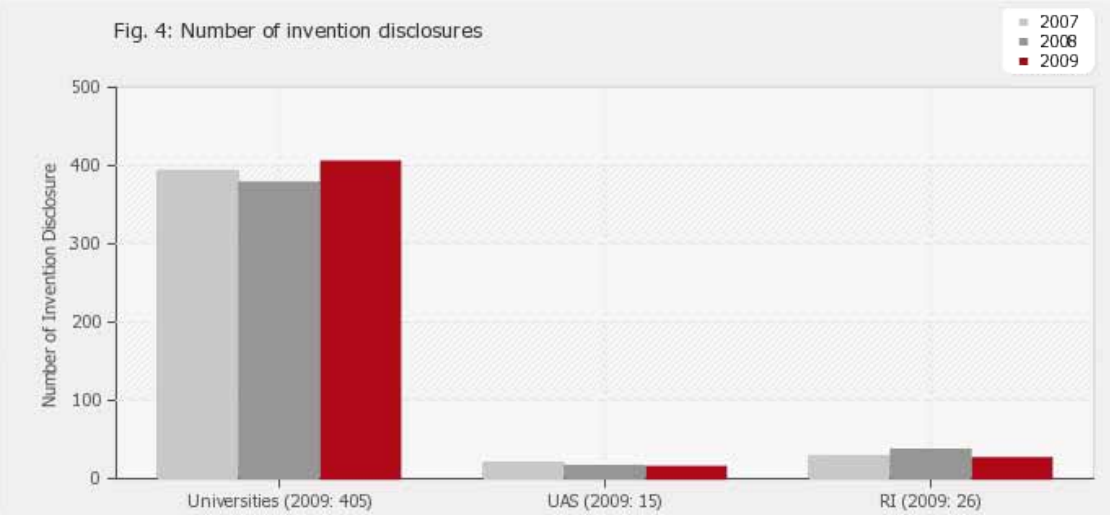


Fig. 4: Number of invention disclosures.

Respondents 2007: 10/10 Universities, 6/7 UAS, 2/2 RI
Respondents 2008: 8/8 Universities, 6/6 UAS, 3/3 RI
Respondents 2009: 9/11 Universities, 6/7 UAS, 3/3 RI

4.2 Patenting Activities

4.2.1 Priority Patent Applications

In 2009 the institutions reported 195 new priority patent applications. The majority of these applications were again filed by Universities (82%), followed by the RI (15%) and the UAS (3%). More than two third of all patent applications were filed by the three TTO's ETH Transfer, SRI at EPFL and by Unitectra.

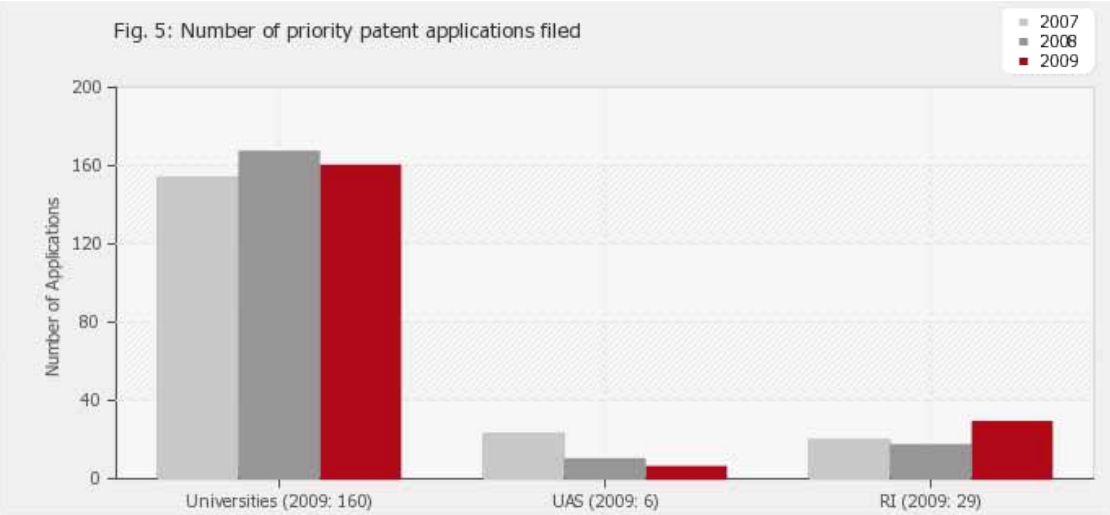


Fig. 5: Number of priority patent applications filed.

Respondents 2007: 10/10 Universities, 6/7 UAS, 2/2 RI
Respondents 2008: 8/8 Universities, 6/6 UAS, 3/3 RI
Respondents 2009: 9/11 Universities, 6/7 UAS, 3/3 RI

The protection of intellectual property in the form of patents is of great importance in many industrial sectors. This is particularly true for industries with high product development costs and long product life-cycles, e.g. biotech and pharma. The TTO at public research institutions must decide at an early stage about filing patent applications because patenting of an invention is no longer possible after the results have been published in scientific journals or through other channels.

Moreover, many companies will not consider evaluating a new technology if it is not protected by a patent. Thus, patenting activities of public research institutions can be a prerequisite for entering into a partnership with an industrial partner.

4.2.2 Patent Portfolio - Active Patent Cases End of 2009

At the end of 2009, the institutions participating in the survey reported more than 1500 active patent cases which were either licensed to a company or for which they were searching for a licensee. Marketing of such technology opportunities is done by the research institutions through various channels. The existing contacts of researchers are often used to approach companies. To support the research institutions in this promotion and to provide a quick and easy overview of current technology opportunities for industry, the association swiTT established the national portal swiTTlist (www.swittlist.ch). Through their TTO, the Swiss public research institutions list technologies on this portal which have an economic potential and which are available for licensing and development by industry. With the help of an automatic alert system, company representatives are informed immediately each time a new technology is available in their field of interest.

CASE

THE OSCILLOSCOPE ON A CHIP

PAUL SCHERRER INSTITUT PSI

Problem – Challenge

The Domino-Ring-Sampler Version 4 (DRS4) is a unique chip capable of measuring eight differ¬ential input signals simultaneously with up to five billion samples per second and a resolution of almost 12 bits. This DRS4 together with a standard personal computer and a suitable application software constitutes a complete and powerful oscilloscope at about 10% percent of the cost of a state-of-the-art commercial oscilloscope.

This unique technique represents a low-cost solution for many laboratory and industrial appli¬cations. However, the biggest benefits in terms of "return on investment" and "operational costs" will be realised in applications where hundreds or even thousands of signals have to be measured simultaneously.

Solution

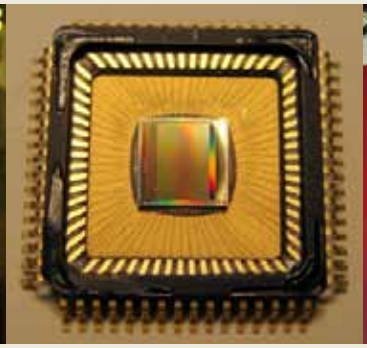
- *Single 2.5 V power supply*
- *Sampling speed 200 MSPS to 5 GSPS*
- *8 + 1 channels with each 1024 storage cells*
- *Cascading of channels or chips allows a deeper sampling depth*
- *Differential inputs with 950 MHz bandwidth*
- *Transparent mode for integrated triggering*
- *Simultaneous reading and writing*
- *Multiplexed or parallel analogue outputs*
- *Low power: 140 mW typical at 2 GSPS*
- *High SNR: 69 dB after offset correction*

Patent pending

Applications

- *Low-cost Digital Oscilloscopes*
- *Hand-held Measuring Devices*
- *Medical Applications (PET Scanner)*
- *Particle Physics Experiments*

Installation at the Paul Scherrer Institute equivalent to 750 Oscilloscopes.


EARLY DETECTION OF BLADDER CANCER BY FLUORESCENCE IMAGING

Background

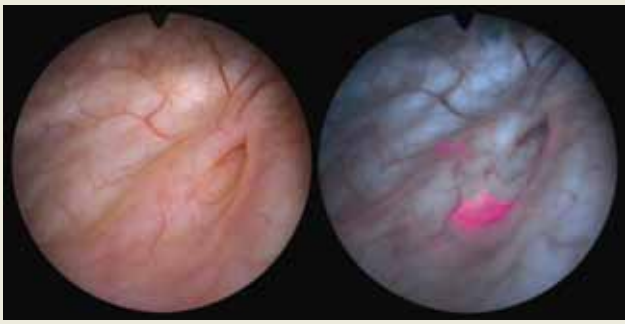
Currently the bladder cancer is diagnosed by analysing the urinary cells and by performimg a cytoscopy. Usually this examination is triggered when the patient sees blood in its urine.

A chemical developed at CHUV (urology service of the CHUV, directed by the Professor Patrice Jichlinski) and EPFL (Medical Photonics group directed by Prof Hubert van den Bergh; development under the supervision of Dr MER Georges Wagnières) allows much earlier detection. This chemical was licensed to Photocure, a Norwegian company, which developed a product based on it. The said product recently received the FDA approval for marketing in the US. Cystoscopy performed with this compound (known as Hexvix® in Europe and Cysview(TM) in the US) as an adjunct to the conventional white-light cystoscopy, improves the detection of bladder cancer and reduces the rate of early tumour recurrence after fluorescence-guided resection, compared with white-light cystoscopy alone.

The solution containing hexyl aminolevulinate is injected in the bladder about one hour before the examination in order to allow the substance to be metabolised by the malignant cells.

This process is triggering the emission of fluorescence in malignant cells. The bladder is then examined with an endoscopic camera and lighted with a blue-violet light. This allows as well the monitoring of possible positive malignant cells remaining after the surgery for the tumour removal.

This method is now commercialized since three years by Photocure in Scandinavia and GE Healthcare in the rest of the world. In Europe, it is reimbursed by the medical insurances. Royalties are since then cashed in by the institutions. Possible other types of cancer could be diagnosed in the future using this approach is saying Prof Hubert van den Bergh.



4.3 Licensing

4.3.1 Licenses and Sales of Intellectual Property (IP)

The number of reported IP agreements, usually licenses, was slightly lower than in the previous year. Overall 191 deals were reported, 87% of them by Universities, 7% by RI and 6% by UAS. in a few cases the agreements involved a sale of the IP rather than a license.

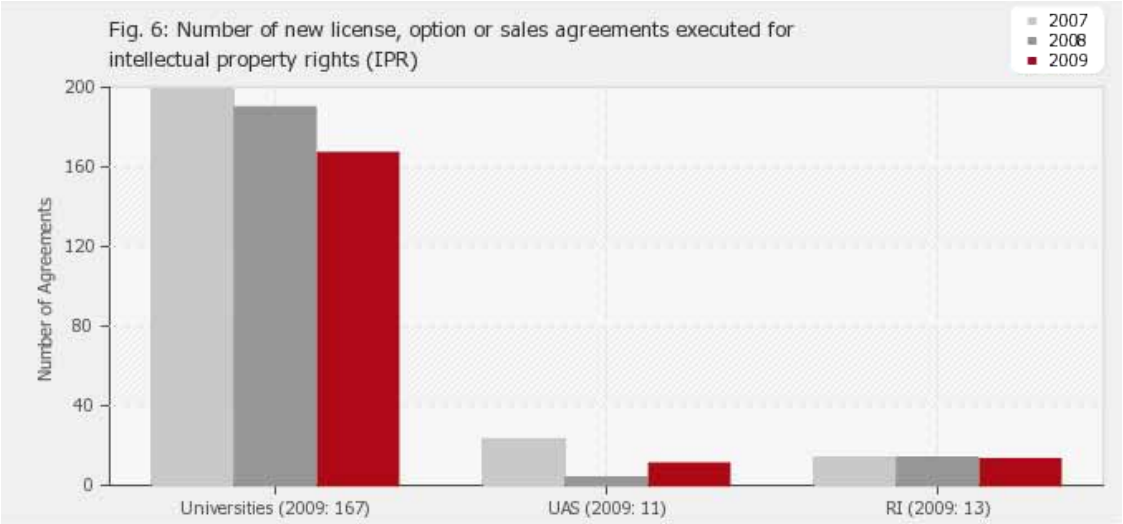


Fig. 6: Number of new license, option or sales agreements executed for intellectual property rights (IPR).

Respondents 2007: 10/10 Universities, 5/7 UAS, 2/2 RI
Respondents 2008: 8/8 Universities, 6/6 UAS, 3/3 RI
Respondents 2009: 9/11 Universities, 6/7 UAS, 3/3 RI

4.3.2 Type of Licensing Partners

As in previous years the majority of the licenses granted in 2009 went to SME (61%). This is mainly due to two reasons. On one hand, SME are often more interested in and more flexible to in-licensing and developing technologies from academia. Large companies have their own R&D programs and will only in-license technologies which will complement their existing portfolio. On the other hand, public research institutions regularly license technologies to their start-up companies. Thus, start-up companies play an important role in developing university technologies. Depending on the industry segment and on the particular product these companies will either market the final products themselves or will sublicense the technologies to larger companies that have the necessary know-how and resources to bring the product successfully on to the market.

4.3.3 License Portfolio and License Income

The number of active licenses under management at the end of 2009 was reported as 1143 cases, slightly higher than the previous year. Thereof, 93% of active licenses were handled by the Universities, 7% by the RI.

Of these active licenses 289 cases resulted in license income to the institutions and the researchers involved. In 133 cases such license income came from product sales. This figure has increased continuously in the past years in line with the growing number of products sold on the market that are based on research results of public research institutions. In the other cases income resulted from other type of license fees, e.g. license issue fees or milestone payments for products still in the development process.

These figures reflect the typical situation of licenses granted to industry by public research institutions. Many of the licensed technologies are at an early stage and require extensive development by the licensee. It often takes several years until a product reaches the market. Moreover, due to the early stage, the development risk is often high, and a significant number of projects are stopped before a marketable product is ready.

CASE

NOVEL BI-COMPONENT FIBERS FOR CONCRETE

EMPA Materials Science & Technology

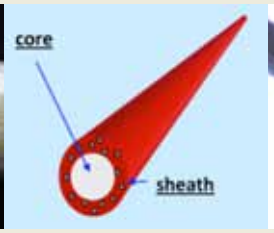
BRUGG CONTEC

Problem – Challenge

The reinforcement of concrete with fibers is an economical and durable alternative to conventional steel bar reinforcement in many cases. For years, steel fibers have been the first choice whereas polyolefin-based fibers generally were thought to be less suitable for this purpose. However, co-extrusion processes nowadays allow the production of polyolefin-based bi-component fibers with high tensile strength and high elastic modulus. Bi-component fibers are manufactured by two extruders. The molten polymers are passed through a spin-pack with two separate material inflows, so that when leaving the spinnerettes they join together forming a fiber consisting of a core and a sheath. Core and sheath material consist of two different polymers which allow an independent optimization of the surface and core material.

Solution

Such bi-component fibers were developed within a CTI-project between Empa and the company fibrotec AG. The bond to the cementitious matrix was drastically improved by high drawing of the fibers, incorporation of additives and nanoparticles to the sheath, and structuring of the surface. High stretching grades are achieved by a more flexible sheath confining the stiffer core polymers. This led to significantly improved load bearing capacity in the composite so that steel fibers can be replaced easily through the novel bi-component fibers. Furthermore, a novel packing method where the single fibers are packed in bundles confined by a water soluble foil, which dissolves upon adding to the fresh concrete, was introduced. This allows easy and excellent fiber dispersion in the concrete. These bi-component fibers are now successfully produced by the company Brugg Contec AG.



Further, the figures are also typical for a still rather young license portfolio because many of the Swiss TTO have only been in operation for a relatively short period of time.

Data on license income are incomplete and were reported only by about half of the institutions participating in this survey. The total license income of these institutions amounted to 8.2 mio CHF slightly lower than in the previous year.

Mainly when licensing to start-up companies, some institutions may accept equity in such companies as a partial compensation for the licensing of technology. Such equity transactions usually replace down-payments or early milestone payments in order to avoid any cash drain from the start-up through license fee payments at the early stage of development. For the institutions, this results in a deferral of license revenues from such licenses until the shares in such start-up companies are sold by the institutions. In 2009, the institutions reported equity transactions for 14 of the 45 new start-up companies created that involved a license (see Section 4.4). In the past years more institutions started to accept equity as part of their license deals.

4.4 Start-up Companies

The number of newly created start-up companies from public research institutions remains at a high level. In 2009 the institutions reported a total of 66 new start-up companies, whereby 45 of these companies relied on a license or a contractual transfer of intellectual property from a public research institution. The remaining 21 companies were created on the basis of know-how developed at the research institutions, but without a formal license.

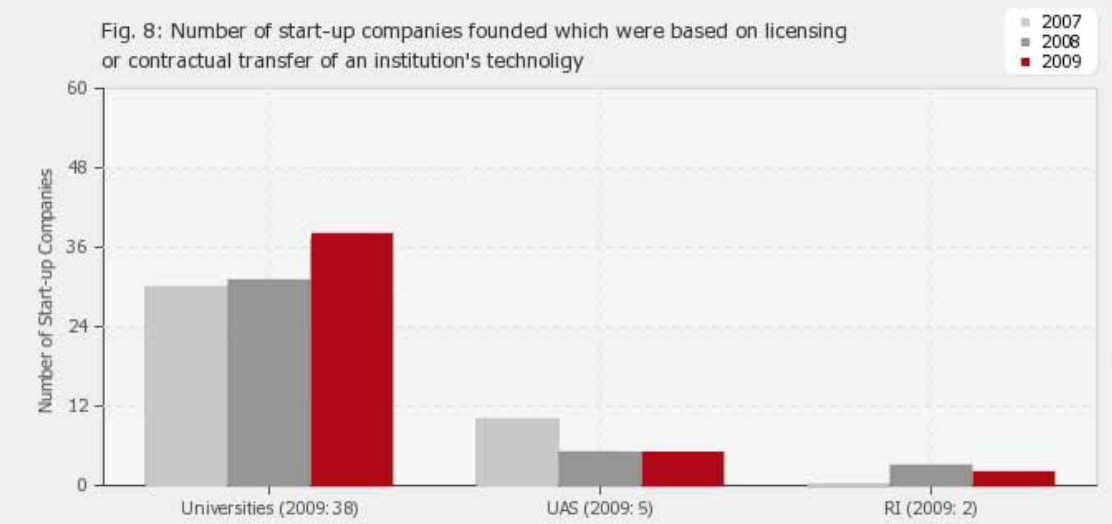


Fig. 8: Number of start-up companies founded which were based on licensing or contractual transfer of an institution's technology.

Respondents 2007: 10/10 Universities, 7/7 UAS, 2/2 RI
Respondents 2008: 8/8 Universities, 6/6 UAS, 3/3 RI
Respondents 2009: 9/11 Universities, 6/6 UAS, 3/3 RI

CASE

STARMIND – GLOBAL TRANSFER OF TALENT KNOW-HOW

Universität Zürich starmind

Limitations of open innovation

The problem with the wisdom of the crowds

Know-how intense industries in High-Tech represent the main part of global economic growth. In a highly competitive market, over CHF 1'000 billion are invested into innovation and research departments of companies and universities all over the world. Referring to more than 100 social network platforms in the internet, online users can ask questions, buy organized brainstorming and collect ideas. However, most idea and open innovation platforms suffer from the same weaknesses:

- *Low quality of solutions*
- *Unclear differentiation to existing expert portals, wikis and search engines*
- *Unclear terms on intellectual property (IP)*
- *Time-consuming selection processes*

Access to talent know-how

Talent know-how has an economic value

Starmind is an exclusive online know-how marketplace uniting several thousand talents. Initially designed to accelerate research at the Artificial Intelligence Laboratory at University of Zurich, selected partners can now post science and business relevant questions from a wide range of fields. Financial rewards between € 10.- and € 5000.- need to be defined, reserved to be paid out for excellent solutions only. Talents then compete to find solutions quickly, as first solutions have a higher chance to be looked at. Usually one or two solutions completely solve a problem. The IP is fully transferred to the question poser when the financial reward is paid out, while solutions are only visible to him. If the network was not able to resolve a challenge within a certain time, new talents are screened for by the community. Starmind charges a 10% facilitation fee for each bought solution.

Starmind, founded in 2008 and turned into an incorporation in 2010, introduces a new business model that allows a new way of trading know-how. Learn more on: www.starmind.com

5. GLOSSARY

swiTT	Swiss Technology Transfer Association
Universities	Cantonal Universities and Swiss Federal Institutes of Technology
UAS	Universities of Applied Sciences
RI	Swiss Federal Research Institutions in the ETH domain
TT	Technology Transfer
TTO	Technology Transfer Office(s)
FTE	Full Time Equivalent (for the number of employees)
IP	Intellectual Property
SME	Small- and Medium-sized Enterprises (<250 employees)
Start-up	Newly established company founded or co-founded by researchers from the respective institution and which either relies on a formal license of IP or on know-how developed at the institution

CASE

CELEROTON ULTRA-HIGH-SPEED ELECTRICAL DRIVE SYSTEMS

ETH Eidgenössische Technische Hochschule Zürich Swiss Federal Institute of Technology Zurich

Celeroton

Problem

Emerging all-electrical dental and medical drills, next generation PCB drilling spindles for the microelectronic market, ultra-compact compressors for heat pumps and air conditioning and fuel cells for future cars all have in common the strong demand for ultra-high-speed electrical drive systems with speeds up to 1 million rpm. For these ultra-high speeds, the traditional machines and electronics are not feasible anymore. In addition, the single parts of a drive system cannot be developed independently. An optimal design must include all system components from software to mechanics to the final product. Furthermore, due to the highly compact designs, no position sensors can be placed within the housings.

Solution

Celeroton's ultra-high-speed electrical drive systems (motor and electronics) allow for sensorless speed control of the electric motor up to speeds of 1 million rpm. The systems are based on research and prototypes realised at the Power Electronic Systems Laboratory of the Swiss Federal Institute of Technology (ETH) Zurich. These miniaturised ultra-high-speed electrical drives resolve several industry needs such as

- *Highly lightweight and compact systems*
- *Increase in productivity*
- *Higher efficiency*

With ultra-high-speed electrical drive systems, several new products become feasible, such as ultra-compact and lightweight compressors for the automotive industry and home appliances as well as the replacement of air turbines for dental and medical drills.

APPENDIX 1 – DETAILED DATA 2006-2009

Note: The number of institutions that participated in the survey varies between years.

All respondents	2006	2007	2008	2009
Full-time equivalents (FTE)	73	77	63	68
Research contracts (incl. EU contracts)	2462	2789	2745	2855
Invention disclosures	404	442	431	446
Priority patent applications	212	197	194	195
Active patent cases end of the year	1245	1248	924	1512
License agreements	196	236	271	191
Active license agreements end of the year	824	1059	1079	1143
kCHF of net licensing revenues	7939	9781	9479	8197
License agreements with revenues in respective year	235	268	271	289
New start-ups on basis of formal license	41	40	39	45

Universities	2006	2007	2008	2009
Full-time equivalents (FTE)	41	45	42	47
Research contracts (incl. EU contracts)	1303	1623	1895	2120
Invention disclosures	325	393	378	405
Priority patent applications	161	154	167	160
Active patent cases end of the year	1058	1084	779	1355
License agreements	156	199	190	167
Active license agreements end of the year	786	996	1013	1058
kCHF of net licensing revenues	7061	8676	8338	7686
License agreements with revenues in respective year	194	220	252	268
New start-ups on basis of formal license	28	30	31	38

RI	2006	2007	2008	2009
Full-time equivalents (FTE)	5	6	7	7
Research contracts (incl. EU contracts)	365	180	395	416
Invention disclosures	41	29	37	26
Priority patent applications	30	20	17	29
Active patent cases end of the year	104	97	97	110
License agreements	13	14	14	13
Active license agreements end of the year	18	39	61	81
kCHF of net licensing revenues	553	975	961	337
License agreements with revenues in respective year	22	27	16	20
New start-ups on basis of formal license	2	0	3	2

UAS	2006	2007	2008	2009
Full-time equivalents (FTE)	27	26	14	14
Research contracts (incl. EU contracts)	986	1038	455	319
Invention disclosures	38	20	16	15
Priority patent applications	21	23	10	6
Active patent cases end of the year	83	67	48	47
License agreements	27	23	4	11
Active license agreements end of the year	20	24	5	4
kCHF of net licensing revenues	325	240	180	174
License agreements with revenues in respective year	19	21	3	1
New start-ups on basis of formal license	11	10	5	5

APPENDIX 2 – KEY PARAMETERS FOR INDIVIDUAL INSTITUTIONS

This table lists individual data of those institutions that agreed to publish them.

Institution	Name TTO	Start TTO	3.2 TTO FTE	4.1 Total # of research contracts	5.1 # of invention disclosures	5.2 # of priority applications	7.1 # of IP agreements
Universities							
EPFL	SRI	1993	7.3	405	90	44	47
Uni Basel	TT-Office	1998	3.5	63	19	6	16
Uni Geneva	Unitec	1999	7	72	49	7	6
Uni Lausanne	PACTT	2000	6.5	59	16	14	13
Uni Bern	Unitectra*	1999	8.6*	472	36	13	8
Uni Zurich	Unitectra*	1996		580	61	23	36
RI							
Empa	TT Office	2005	2.5	82	17	20	12
PSI	TT Office	1999	4	190	9	9	1
UAS							
BFH	TT Office	2005	6.2	224	5	3	8
Hochschule Luzern	ITZ	n.a.	3.3	2	1	1	0

* *Unitectra is the joint TTO of the Universities of Bern and Zurich*

APPENDIX 3 – THE QUESTIONNAIRE

swiTT Technology Transfer Survey 2009 (online survey)

Preliminary Notes:

- All questions refer to the calendar year 2009. Please make your statements accordingly.
- If no answer is available for certain questions, please indicate with n.a. Questions for which your office or your institution does not collect data should be left open (n.a.) and should not be answered by giving an estimate.

1.	**Confidentiality**			
	Do you agree to the publication of the individual data collected in the questions marked *[pub] under your institution's name? All other data will only be published in the aggregated format by type of institution? *All other data will only be published in the aggregated format by type of institution.*			❑ Yes ❑ No
2.	**Background Information**			
2.1	Name of the academic institution/s			
2.2	Is your institution associated with an university hospital? *(If yes, please note that all figures given below should include the numbers of the hospital, too.)*			❑ Yes ❑ No
2.3	Does your institution have a dedicated office / responsible person for TT activities (TTO)?			❑ Yes ❑ No
	If yes, which year did the TT program start?		*[pub]*	
2.4	Name of responsible for TT program			
	Name of responsible for survey data			
2.5	TTO address and contact information			
	Office Name		Telephone	
	Street		e-mail	
	City		Postal code	
3.	**Activities and FTEs**			
3.1	What are the activities of your TTO?			
(A)	Research contracts (drafting, negotiating, controlling)			❑ Yes ❑ No
(B)	Evaluation, protection and management of IP			❑ Yes ❑ No
(C)	Commercialisation of IP (licensing, marketing)			❑ Yes ❑ No

(D)	Coaching of start-up projects	❑ Yes ❑ No
(F)	Financial administration of research projects	❑ Yes ❑ No
3.2	How many full time equivalents FTE were employed in your TTO on December 31st 2009? *(Do NOT include researchers working as project managers in transfer projects in this number)*	FTE *[pub]*
3.3	Of these FTE, how many were employed to work on	
(A)	Technology transfer activities *(Staff with main occupations (> 20%) in the area of technology transfer, such as 'Licensing Officers', 'Intellectual Property Managers', 'Technology Managers' or 'Research Contract Officers'. Do NOT include project managers carrying out transfer projects)*	FTE
(B)	Administration and general management	
	Comments to 3.1 - 3.3 *(e.g. if additional people outside your TTO but inside your institution are also working in technology transfer activities according to 3.1, special organisation with specific faculties, centralized/decentralized organisations)*	FTE
4.	**Research and Development**	
4.1	Total number of new research contracts handled by your TTO *(Collaboration agreements, service agreements, clinical trial agreements, CTI complementary and EU agreements, NO MTA, NO NDA or other TT contracts (see 4.3) and NO SNSF contracts)*	[pub]
	Of these research contracts, how many were executed with small and medium enterprises (SME), how many with large companies and how many with public partners? *(Definition: SME are companies with 250 or less employees.)*	A) SME: (B) Large Company (C) Public Institutions: *(Sum shall equal 4.1!)*
4.2	Amount of cash payments due to your institution from research contracts that were handled by your TTO according to 4.1 *(Please give the amount of cash due to your institution, NO material asset e.g. for machinery and NOT the total amount of Research Project, e.g. if an EU project adds up to 3 Mio. EUR but your institution gets only 200'000 thereof, the latter shall be given. Do not split the amount, if the contract is covering several years but report the full amount in the year the contract is signed.)*	CHF
4.3	Number of other technology transfer contracts handled by your TTO *(Non Disclosure Agreements (NDA), Material Transfer Agreements (MTA), consulting contracts, inter-institutional contracts, sponsoring, donations, but NO licenses, options, sales)*	
	Comments to 4.1 – 4.3 *(e.g. restrictions/regulations at your institution, knowledge of ALL contracts or only contracts above a certain amount)*	
5.	**Patent-Related Activity**	
5.1	How many invention disclosures were received by your TTO?	*[pub]*
5.2	How many priority applications were filed by your TTO? *(Priority application being the very first application for a new technology in any patent office of the world.)*	*[pub]*
	(A) Of these, how many are based on research significantly funded by SNSF.	
5.3	What was the overall number of active patent cases at the end of 2009 managed by your TTO? *(Active patents cases are pending or granted patents on a technically unique invention (patent family). Applications in various countries on ONE technically unique invention count as ONE patent case.)*	
6.	**Patenting Costs and Legal Fees**	
6.1	Amount spent by your TTO/institution on patenting costs and external legal fees? *(Including all external costs for patent filing, prosecution, maintenance, litigation expenses or costs for drafting or support in negotiation of contracts.)*	CHF
6.2	Amount of patenting costs and legal fees invoiced to commercialization partners? *(Does NOT include patenting costs or legal fees paid DIRECTLY to the patent attorney or other service providers by licensees or external partners.)*	CHF

7.	**License, Option and Sales Agreements**	
7.1	How many licenses/options/sales of protected or unprotected IP did your TTO execute? *(Count only the agreements for different technologies, i.e. 30 licenses for the same software library count as ONE. If a license agreement is combined with a research agreement (e.g. advanced sale of the results of a research project), this contract shall count only as research contract and NOT be included in this question unless the invention/software that is licensed/sold, exists already at the execution date of the research contract.)*	[pub]
	Of these licenses/options/sales, how many were licensed to SME, how many to large companies or public institutions? *(Definition: SME are companies with 250 or fewer employees)*	(A) SME: (B) Large Company: (C) Public Institutions: *(Sum shall equal 7.1!)*
	(D) Of these licenses/options/sales how many are based on research significantly funded by SNSF?	
7.2	How many licenses/options/sales included equity? *(Equity meaning the ownership of interest in a company such as shares, options, warrants, etc. in consideration for granting a license or sale of IP.)*	
7.3	How many licenses/options were active as of December 31, 2009?	
	Comments to 7.1 – 7.3 *(e.g. large variations to previous years, special situations, i.e. with free software licenses OpenBSD, etc)*	
8.	**License Income**	
8.1	What was the total number of licenses/options/sales yielding revenue?	
8.2	How many licenses/options/sales yielded running royalties? *(Running royalties are based on product sales and areonly due after the launch of a product in the market)*	
8.3	What was the total amount of license/option/sales revenue received at your institution? *(WITHOUT patent cost and fees invoiced in 6.2.)*	CHF
9.	**Start-up Companies**	
9.1	Total number of start-up companies formed at your institution	
	(A) Of these start-up companies, how many are dependent on licensing or transfer of your institutions technology?	
	(B) Of these start-up companies, how many are dependent on unprotected know-how or technology of your institution (without license agreement)?	
	(C) Of these start-up companies, how many are based on research significantly funded by SNSF?	
9.2	In how many of the new start-up companies does your institution hold equity?	
10.	**Post-Licensing Activities**	
10.1	Did one or more of your institution's licensed technologies become available for consumer or commercial use in 2009?	❑ Yes ❑ No
	If yes, how many?	
10.2	Information about the launched products *(Please give a short title of each product success story and the e-mail of the contact person for additional information.)*	*[Title, Contact Person]*
	Comments	
	(If you want to bring any additional comments or suggestions to the attention of the team of the swiTTreport, please post them here)	

Thank your for your input!

NOTES

SWITT IM ÜBERBLICK

swiTT
swiss technology transfer association

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swiTT - Swiss Technology Transfer Association

swiTT is the association of professionals in Switzerland dealing with the interaction between public research and industry.

Mission

Cooperation - Development - Services - Dialogue
Foster innovation through co-operation and technology transfer between Swiss public research institutions and the private sector.

Services

swiTTlist (www.swiTTlist.ch)
The unique national platform for technology opportunities from Swiss public research institutions provides companies with a quick overview of current technologies and the necessary contact information. Subscription to automatic alerts is free of charge.

swiTTreport
The annual survey gives an overview of the technology transfer activities of the major universities and other public research institutions. It also highlights success stories from different sectors. The report can be ordered through swiTT Office.

swiTTacademy
swiTT regularly organizes educational events on a variety of topics for its members. Some of the events are also open for non-members.

swiTTtalk
The member's forum allows to easily draw on the know-how and expertise of other members on specific topics of interest.

www.switt.ch

CONTACT

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