

OP 3.1.1

Analyse key players

CENTRAL EUROPE Programme 2007 – 2013

PRIORITY 1: Facilitating innovation across Central Europe

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Summary	A territorial survey of key players active in addressed sectors of each Project Partner completed by a trans-national comparison. These key players may include cluster initiatives, health care groups etc.

The analysis of key players from each project partner is summarized in one report.

LP: Bayern Innovativ GmbH/ Forum MedTech Pharma e.V.

➤ **Clinics/ hospitals including university hospitals, clinics with all supply levels, publicly owned, private non-profit and private for-profit.**

Please see OP 3.3.1. b for the most innovative clinics in Upper Bavaria.

Please see OP 3.1.2. for details on the European Metropolitan Region Munich as the key player in healthcare in Upper Bavaria. When it comes to departments and persons cited publicly in relation to innovation the following are often mentioned (among others):

Technical University Munich

The **University Hospital Klinikum rechts der Isar** has approximately 3,700 employees and 31 clinics and divisions. Approximately 40,000 patients benefit yearly from the highest level of in-patient medical care and an additional 170,000 patients benefit from outpatient care. This 1,100-bed hospital covers the entire spectrum of modern medicine with state-of-the-art efficiency. Through the close cooperation between health care and research, the latest advances in medical techniques can be quickly integrated into patient treatment procedures.

- Prof. Dr. med. Manfred Schwaiger (Department of nuclear medicine and polyclinic)
- Prof. Dr. med. Dipl. Phys. Eberhard Kochs (Department of Anaesthesia)
- Prof. Dr. med. Hubertus Feussner (Department of Surgery, Minimal Invasive Interdisciplinary Therapeutic Intervention MITI)
- Prof. Dr. med. Dr. Ing. Habil. Erich Wintermantel (Chair of Medical Engineering)
- Prof. Dr. rer. nat. Bernhard Wolf (Heinz Nixdorf Chair of Medical Electronics)
- Prof. Dr. rer. Nat. Dipl. Ing. Tim Lüth (Institute of Micro Technology and Medical Device Technology MIMED)
- Prof. Dr. med. Ernst J. Rummeny (Institute of X-Ray Diagnostics)
- Prof. Dr. rer. Nat. Axel Haase (Central Institute of Medical Engineering IMETUM)

Ludwig Maximilians University of Munich

According to the World Reputation Ranking compiled by the Times Higher Education Magazine, LMU occupies the top position among universities in Germany. Rated 48th in the world, LMU is regarded as one of the most renowned universities on the European continent – after the ETH Zürich, which is ranked 24th overall. The new ranking, which is appearing for the first time this year, evaluates the standing that universities enjoy among their peers for the quality of their teaching and research. The list is based on the results of a survey of experienced and highly regarded academics from all over the world.

The **University Hospital Munich-Großhadern** has approximately 9,000 employees, 2,300 beds and 44 clinics and divisions.

- Prof. Dr. med. Burkhard Göke (Medical Director; Med. Clinic II)
- Prof. Dr. Dr. h.c. mult. M. Reiser (Institute of Clinical Radiology)
- Prof. Dr. Oliver Eickelberg (Comprehensive Pneumology Centre)

Other Clinics in the EMM

- Prof. Dr. med. Manfred Herbst (Dr. Rinecker Clinic, Rinecker Proton Therapy Center RPTC)
- Prof. Dr. med. Alfred Schömig (Medical Director; German Heart Centre Munich)
- Dr. Olaf Neumann (Communal Hospital Munich StKM, Department of Gynecology)
- Prof. Dr. med. Michael Nerlich (University hospital Regensburg, Med. Director Department of Trauma Surgery)
- Dr. med. Alexander Leis (Regensburg University of Applied Sciences, Department of Biomedical Engineering)
- Prof. Dr. Dr. med. Michael Frühwald (Augsburg Hospital, Department of Paediatrics)

➤ **SMEs: Decision makers/ Management, R&D staff, Marketing/ Product Development.**

In the Munich metropolitan area, there is a cluster of more than 200 medical device manufacturers employing some 14,000 individuals. The product spectrum of the highly technology-oriented innovative Munich companies ranges from laboratory devices and medical-device-related services to software for medical applications and a variety of highly-specialized products for surgery, ophthalmology or dentistry. The manufacturers' focus is on diagnostic, therapeutic and orthopaedic devices. Munich's medical device businesses are highly specialized and are often international leaders in their fields. Medical device manufacturers that employ a workforce of more than one hundred include Rodenstock or Stöckert Instruments, which specializes in heart-lung machines. Near Munich, there are additional large businesses such as BrainLAB (CEO Stefan Vilsmeier), a manufacturer of cancer treatment software, or Heine Optotechnik (CEO Helmut M. Heine), a producer of diagnostic instruments and precision optics. What is more, global technology group General Electric operates its GE Global Research Center in the Munich metropolitan area, a research and development department specializing, among other things, in medical devices.

Other Key companies: ConvaTec (CEO David I. Johnson), Definiens (Head of R&D Prof. Dr. Gerd Binnig, CFO Dr. med. Markus Rinecker), MAG & More (CEO Dr.-Ing. Hannes Zantow), Mavig (CEO Manfred Stoian), Microbionix (CEO Dr. Erwin Soutschek), NRI Medizintechnik (CEO Gudrun Kluge), PENTA (CEO Helmut Müller), Schwarzer (CEO Christian Reinhold), viametrixx (Dr. Hartmut Schlichting), XWS Cross Wide Solutions (CEO Wolfgang Birke), reputation-engineering (CEO Günter Goldbach), WIMASIS (CEO Kilian Schramm), CRITEX (CEO Michael Schindler), Tem Innovations (CEO Dr. Axel Schubert), aktormed (CEO Robert Geiger), SurgicEye (CEO Dr. Thomas Wendler), excidomed (Robert Weininger).

➤ **Research & Development Institutions: Decision makers/ Management, R&D staff/ engineers/ technicians.**

- The Fraunhofer Society (with its national headquarters and four individual institutes in the Munich region)
- The Max Planck Society (with its national headquarters and eleven individual institutes in the Munich region)
- The Helmholtz Zentrum München (Helmholtz Centre Munich, with 23 individual institutes and three independent departments in and around Munich). This centre focuses on research into health and the environment and is a member of the Helmholtz Association of German Research

Centres (CEO Prof. Dr. Günther Wess, COO & Head of the Legal & Technology Transfer Department Martin Reichel)

- DLR, the German Aerospace Agency (with eight scientific institutes at its

Oberpfaffenhofen campus)

➤ **Other relevant groups: health care insurance companies, health care decision maker groups and relevant political groups.**

- European Metropolitan Region Munich e.V. (Spokesperson Christian Ude, Spokesperson Health Prof. Dr. Günter Neubauer)
- City of Munich Department of Labor and Economic Development (Kurt Kapp)
- Chamber of Industry and Commerce for Munich and Upper Bavaria Innovation, Research and Technology, Product Safety (Dr. Wimbauer)
- Munich Network – Netzwerk München e.V. (Curt J. Winnen)
- Innovation and competence networks BioPark Regensburg (Dr. Thomas Diefenthal), BioTech Region Munich (Prof. Dr. Horst Domdey), BioRegio STERN (Dr. rer. Nat. Eichenberg)
- Federal Ministry of Health (Dr. Philipp Rösler); Bavarian State Ministry of the Environment and Public Health (Dr. Markus Söder); Health-political spokespersons: Jens Spahn (CDU/CSU), Karl Lauterbach (SPD), Birgitt Bender (Bündnis `90/Die Grünen), Ulrike Flach (FPD)
- Health insurance companies: TK (Helmut Heckenstaller),

PP3: Health-Technology Cluster, Clusterland Upper-Austria

Addressed sectors (target groups):

- Clinics/ hospitals including university hospitals, clinics with all supply levels, publicly owned, private non-profit and private for-profit.

Allgemeines Krankenhaus der Stadt Linz GmbH (AKh)	www.akh.linz.at	Hospital
Allgemeines öffentliches Krankenhaus St. Josef Braunau GmbH	www.khbr.or.at	Hospital
Klinikum Kreuzschwestern Wels-Grieskirchen GmbH	www.klinikum-wegr.at	Hospital
Krankenhaus der Barmherzigen Schwestern Linz	www.bhs-linz.at	Hospital
KRANKENHAUS DER ELISABETHINEN LINZ GmbH	www.elisabethinen.or.at	Hospital
OÖ. Gesundheits- und Spitals-AG	www.gespag.at	Hospital agency
OÖ. Ordensspitäler Koordinations GmbH	www.ooe-ordensspitaeler.at	Co-ordination centre of the Upper Austrian Order Hospitals

Physikalisches Institut der Kreuzschwestern Wels	www.gesundheit-wels.at	Pain-, relief- and movement-therapy, vital advisory service
TAU.GRUPPE.VÖCKLABRUCK	www.franziskanerinnen.at	Holding

- SMEs: Decision makers/ Management, R&D staff, Marketing/ Product Development.

Our contact is always in management. We cannot give personal contact details because of data protection.

Abatec Electronic AG	www.abatec-ag.com	utilities management
Acutronic Medical Systems GmbH	www.acutronic-ms.at	Jet-ventilation, development of fiberoptical instruments for the endoscopic demonstration, ventilation and monitoring of premature infant and newborns
AIT Austrian Institute of Technology GmbH	www.ait.ac.at	Biomedical-technical, applied research
AKAtech Produktions- und Handels GmbH	www.akatech.at	Building and assembling of electromechanic components and equipment in the fields of medical and therapy technology
AlliedPanels Entwicklungs- und Produktions GmbH	www.alliedpanels.com	development of electronics, mechanics and software, with a focus on technically complex devices.
allectric GmbH	www.allectric.com	Industrial cooler and freezer
Anagnostics Bioanalysis GmbH	www.anagnostics.com	experts in molecular diagnostics
analyse BioLab gmbH	www.analyse.eu	microbiological laboratory diagnostics
Angerhofer GmbH	www.angerhofer.at	plant engineering, utilities management
Artweger GmbH. & Co.	www.artweger.at	clothes pin, laundry dryer, shower separation...
ATOS Omnibus Schmiemer GmbH	www.omnibushandel.at	Omnibus trade, automotive engineering
ATV-ELEKTRONIK GESELLSCHAFT m.b.H.	www.atv-elektronik.co.at	Development of electronics
AugenOptik SATTEL		optician, seeing devices, advisory service
AUROTEC GmbH	www.aurotec.at	services
B. Braun Austria GmbH	www.bbraun.com	Products and process-orientated services for medical supply worldwide
Bandagist Heindl GmbH - Technisches Gesundheitszentrum	www.heindl-bandagist.at	Medical store, orthopedics
Becom Burgenländische Elektronik- und Kommunikationssysteme Gesellschaft m.b.H.	www.becom.at	development, production, testing, painting, assembling of electronic construction groups, modules and equipment, as well as packing, delivery, One Stop Shop
Belimed GmbH	www.belimed.at	innovative system solutions for cleaning, disinfection and sterilisation in the fields of medicine, pharma and laboratory

Biegler GmbH	www.biegler.com	Development and production of medical-technical equipment and medical throw-away products
BWT Aktiengesellschaft	www.bwt.at	Water preparation, -technics, therapy baths, construction and concepts for sanitary drinking and industrial water preparation (UV, Ozon, CO ₂ , ...)
Camo Formen- und Werkzeugbau GesmbH	www.camo.at	Mold and tool construction
CAS Clean-Air-Service AG	www.cas.ch	Clean-room qualification and measurement engineering; thermic check
CDE Communications Data Engineering GmbH	www.cde.at	Embedded solutions: hardware and software for medical products
Cleanroom Technology Austria GmbH	www.crt.a	Clean-room technology
cms electronics gmbh	www.cms-electronics.com	Electronics-Manufacturing-Service
CompuGroup CEE GmbH	www.compugroup.com	Software and communication solutions
contec - Steuerungstechnik & Automation GmbH	www.contec.at	Development and production of electronics for industrial and medical-technical applications
DACO Informationstechnologie GmbH	www.daco.at	IT-solutions for administration departments of hospitals and first aid organisations
Databusiness Services GmbH	www.e-nnovation.at	plan, design and develop high-innovative products and solutions in e-government environment
DELFIN Handelsges.m.b.H.	www.thera-med.at	Infrared cabins and deep heat cabins
Dr. Bernhard Johann Mayr		Consulting services, IT-services, software for laboratory, medical practice, convalescent home and nursing home
Dr. Leo Savernik		Consulting services
DS AUTOMOTION GmbH	www.ds-automotion.com	System provider and manufacturer of driverless transport systems
DSM Fine Chemicals Austria Nfg GmbH & Co KG	www.dsm.com	Producer of active pharmaceutical ingredient and intermediate products
Duller engineering GmbH	www.duller.com	construction and development of plastic parts, components and full equipment
ekey biometric systems GmbH	www.ekey.net	Fingerscan entry-solutions, IT-security
en.co.tec Schmid KEG	www.encotec.com	Quality- and projectmanagement
EQ-Serve EDV & Labortechnik GmbH	www.eq-serve.com	IT and laboratory engineering
esz AG calibration & metrology	www.esz-ag.de	calibration, total solutions for inspection equipment monitoring, repair
Eurofoam GmbH	www.eurofoam.at	Formpillow for medical and health
FerRobotics Compliant Robot Technology GmbH	www.ferrobotics.at	Production of pneumatic, compliant robotics
floever europe gmbh	www.floever.at	Made-to-measure plastics
FOKAM Fahrzeugzubehör GmbH		Assembling parts
Framsohn Frottier GmbH	www.framsohn.at	toweling
Fuchshofer GmbH	www.fuchshofer.at	Metal working: 2D- and 3D-processing in precision
g.tec medical engineering GmbH	www.gtec.at	g.tec developed the first commercially available BCI system
GE Medical Systems	www.gehealthcare.com	Ultrasound diagnostics equipment

Kretztechnik GmbH & Co OHG		
Ginzinger electronics systems GmbH	www.ginzinger.com	Development and production of customer-specific electronics
Graf Elektronik GmbH	www.grafgroup.com	Services in electrical and electronic industry
Greiner Bio-One GmbH	www.gbo.com	Blood withdrawal systems, laboratory articles made of plastics
GRPconsult Mmag. Peter Grill	www.grpconsult.at	human resource management, recruiting, management consultancy
GS1 Austria GmbH	www.gs1austria.at	Product development, project management, development of global standards, identification- and codesystems for addresses, articles, locations,...
GW Salzburg - Zweigstelle St. Margarethen	www.gw-salzburg.com	Assembly of clean-rooms, pre-assembling of blood transfusion equipment
H+H SYSTEM HROVAT KG	www.hhsystem.at	Flexible dividing- and organisation systems for storage of products in pharmacies, hospitals, surgery, laboratory and for shop fitting
HÄMOSAN Life Science Services GmbH	www.haemosan.com	private Research and Service Company: core competencies are in biosafety, quality systems and management support/training.
HANSA PLM-Solutions GmbH	www.hansaplmsolutions.at	Consulting and process optimisation, distribution and implementation, trainings and services
HBS Health Business Solutions GmbH	www.hbsolutions.at	E-Procurement in Austria's public health sector, experts for optimizing the supply chain, customized solutions for the health sector
HELBO Photodynamic Systems GmbH & Co KG	www.helbo.at	Development and production of medical laser systems
HESON Metall- und Kunststofftechnik GmbH	www.heson.at	Construction and equipment made of metal and plastics half-finished products
HygCen International GmbH	www.hygcen.info	Medical product-testing
IBB Internationale Betriebs Beratung GmbH	www.ibb-consulting.com	Strategy Consulting, Process Excellence and Value Management
igor Institut für Gewebe- und Organrekonstruktion GmbH	www.igor.at	Pharmaceutical articles, cells
iip innovation in progress Steinwender - Gottinger - Pattera OEG	www.iip.co.at	Services and consulting in the field of innovation management, product- and organization consulting, design and management of innovation processes
IML - Integrated Medical Logistic GmbH		Logistic processes for hospitals and healthcare arrangements
Informatics Consulting & Development GmbH	www.informatics.at	SAP consulting and development
intelligent motion GmbH	www.intelligentmotion.at	Rehab-robots and automated rehab-equipment
KHB - Seemayr	www.khb-seemayer.at	Transportation systems for sterile goods and medicine
Kiefer technik GmbH	www.kiefertechnic.at	Production of accommodation for functional rooms with highest hygienical demands, especially for hospitals and pharma industry

KOENIG Austria GmbH	www.kvt-koenig.at	high-quality fastening and sealing applications
KUMAvision GmbH	www.kumavision.at	Development and implementation of ERP- and CRM-solutions
Lambda - Labor für molekularbiologische DNA-Analysen GmbH	www.lambda.at	Biochips for diagnostical application, molecular-genetic analyses
LASCRIPPT Laser- & Klebetechnologie GmbH	www.lascript.at	Medical technology, dental technology, ...
Lenzing Aktiongesellschaft	www.lenzing.com	cellulose fibers
Lenzing Plastics GmbH	www.lenzing.com/plastics	producer of polyolefin and fluoropolymer products
Lenzing Technik GmbH	www.lenzing-technik.com	Engineering and Contracting, Mechanical Construction and Industrial Services, Automation and Mechatronics
LEOMED Medical Systems GmbH	www.leomed.at	Development, testing, series production in mechatronics, especially sensor technology, medical technology equipment
LifeTool - Integration durch Kompetenz GesbR	www.lifetool.at	Innovative tools and electronic communication systems for handicapped people
MB International Languages GmbH	www.boensch.at	Translation bureau
MDP Medizintechnische Dekubitusprophylaxe	www.mdp-deku.at	Optimisation of patient bedding in view of decubitus avoidance
Mediscan GmbH & Co KG	www.mediscan.at	services in radiation sterilisation using gamma and e-beam technology
Lohmann & Rauscher GmbH	www.lohmann-rauscher.at	Products for wound treatment and OI-Set systems
M & W Zahntechnik GmbH	www.kfo.at	Dentistry labour for orthodontics
MARK Metallwarenfabrik GmbH	www.mark.at	Metal deep drawn components
MARK Präzisionstechnik GmbH	www.marktec.at	Precision parts
Medwalker Handels GmbH	www.medwalker.com	Partner for orthopedic shoemaker and orthomedic engineers
Meierhofer GmbH	www.meierhofer.at	MCC is a scalable information system that networks medicine, patient care and administration
Mentaltech - Schmid&Demmelbauer OEG	www.mentaltech.com	Mental life- and health sustainment of persons with non-invasive methods
Michor Consulting e.U.	www.michor-consulting.com	services
MicroMed KEG	www.micromed.or.at	Hygienical inspection and expertise of medical equipment
Miele GmbH Werk Bürmoos	www.miele.at	Production of parts and components for medical equipment
Mobilitätsservice Rehatechnik Rammer GmbH	www.mobilitaetsservice.at	Special wheelchairs, movement therapy equipment, stair stepping machine,...
Mould & Matic Solutions GmbH	www.mouldandmatic.com	moulds for rotation-symmetrical products
MRD PHYSICOM Medical Research and Development Physicom GmbH	www.mrd-physicom.at	Physical therapy and electro diagnostic
nora flooring systems GesmbH	www.nora.com	Floor cover made of caoutchouc
ONEA-Engineering Austria GmbH	www.onea.at	Engineering, plant construction, Know-how in the field of micro-extrusion-technology
Orthopädie Schaper GmbH	www.schaper-wels.at	Medical store and orthopedic business

Ortner Reinraumtechnik GmbH	www.ortner-group.at	provider of equipment and plant in the field of creating microbiologically clean air and air free of particles in the atmosphere and on surfaces
PAA Laboratories GmbH	www.paa.com	manufacture and distribution of cell culture products for research, development, diagnostic and biopharmaceutical production
PCS Professional Clinical Software GmbH	www.pcs.at	Clinical software
Personalfitness	www.personalfitness.at	nutrition-, health-, fitness-consulting
PGA Verein für prophylaktische Gesundheitsarbeit	www.pga.at	Research and further education for people working in health-, rehab- and social sector
Physiotherm Beratungscenter GmbH	www.physiotherm-linz.at	Infrared cabins
Piesslinger GmbH	www.piesslinger.at	Aluminum refining
Plejaden Communications GmbH & Co KG	www.plejaden.net	Information- and communicationsystems for geriatric care; therapy concepts, software and systems for cognitive training
PLEON Publico Public Relations & Lobbying GmbH	www.pleon-publico.at	Public relations for hospitals
Pollmann Austria GmbH	www.pollmann.at	Development and series production of simple, complex and intelligent mechatronic-construction groups as well as products made of material-composite plastics and metal
PRECIPLAST Kunststofftechnik Ges.m.b.H.	www.preciplast.at	Development and construction of injection molding tools, tool design and construction, plastics technology, manufacturing of construction groups
PRECUPA GmbH	www.precupa.com	tool design and construction
Procon Unternehmensberatung GmbH	www.procon.at	Management consulting, further education with consulting and training achievement
profi-con Austria GmbH	www.profi-con.at	Clean-room cleaning and training
Promotech Metallverarbeitungs.m.b.H.	www.promotech.at	Plastic parts, plastic- and metal-compound
Prozahn Gruber Hamberger OG	www.prozahn.at	Dentistry work made of bio-compliant materials
QMS SELLEMOND	www.sellemond.com	Quality management and laboratory services
Reindl Gesellschaft m.b.H.	www.reindl.eu	Production and trade of working clothes and work protection from head to feet
RICO Elastomere Projecting GmbH	www.rico.at	Producer of injection molding tools and automation for handling with elastomers
RISC Software GmbH - Forschungsabteilung Medizin Informatik	www.risc.uni-linz.ac.at/industry/	Software and research in logistics, industry and medicine
Rudolf GRADL Medizinprodukte		Dental medicine
rumpfhuber.cc consulting company	www.rumpfhuber.cc	Academy, consulting and IT solutions
S2-Engineering GmbH	www.s2-engineering.com	Optimization of human-resource allocation in healthcare, optimization of total resources in clinical area, financial

		management and financial optimization
SANTESIS Technisches Gebäudemanagement & Service GmbH	www.santesis.at	health care technology
Schiller Handelsgesellschaft mbH	www.schiller.at	Precaution and preservation of human and animalistic health
Schinko GmbH	www.schinko.at	boxes
Schmidt Saubere Arbeit. Klare Lösung. GmbH	www.schmidt-reinigung.at	Building hygiene
Schneeweis Mobility Belts	www.mobility-belts.com	Belt systems
Schütze-Schuhe GmbH & Co. KG	www.schuetze-schuhe.at	Safety shoes
Schwandner G&G Klinikprodukte OG	www.klinikprodukte.at	Trade with clinical products
SEIDEL Elektronik GmbH Nfg. KG	www.seidel.at	System supplier of complex electrical mechatronical equipment
Seletec Plastic Products GmbH & Co. KG	www.seletec.com	injection molding, injection molding tools
Senoplast Klepsch & Co GmbH	www.senoplast.com	Plastic semi-finished product for thermo-moulding
SEW Software Engineering Weichselbaum	www.sew.at	Consulting, software design, implementation of customer tailored software solutions
SLI Sterilgut Logistik und Instrumentenmanagement GmbH	www.sli-wels.at	reconditioning of reusable sterile goods
Software Quality Lab GmbH	www.software-quality-lab.at	Consulting in software quality
Sony DADC Austria AG	www.sonydadc.at	entertainment and information industry, high precision injection molding
Spantec GmbH	www.spantec.at	Technology provider for innovative, electronical feedback-systems: telemedicine, work safety and sports
Stadler Sensorik CNC-Technik gmbH	www.stadlercnc.at	CNC-turning/cutting, CNC- tube bending, laser welding
Staudt Ges.m.b.H.	www.staudt.at	Medical textiles, hospital and care goods, medical equipment
STIWA Holding GmbH	www.stiwa.com	Complete manufacturing automation (high performance automation), Product design suitable for automation, Linear feeding systems and entangling devices in sizes suited for the parts to be fed, Manufacturing services, Technical software, Service
Stockinger Gesellschaft m.b.H.	www.stockinger.co.at	Orthopedic shoe technology
Sturmair und Siegele OEG	www.datateam.at	IT-services
Süss Medizintechnik GmbH	www.suessmed.at	Equipment for rehabilitation and performance diagnostics
System Industrie Electronic AG	www.sie.at	Development and production of customer-tailored computers
Systema Human Information Systems GmbH	www.systema.info	software (E-Health)
TAGnology RFID GmbH	www.tagnology.com	RFID
technosert electronic GmbH	www.technosert.com	service provider for the electronic industry
TopRein Reinigungs GmbH & Co. KG	www.toprein.at	Building cleaning, cleaning demand, finance & controlling, product and services management, application

		engineering, public relations
Transtec Maschinen und Ideen	www.transtec.cc	Idea exchange
TÜV Österreich	www.tuev.at	Checkup, monitoring and certification of medical products and technical accommodation
UBW Unternehmensberatung Wagenhofer GmbH	www.ubw-consulting.com	management consultancy
UseNet Software GmbH & Co KG	www.use-net.at	Solutions for IT-security and for identity & access management (IAM)
UTS Geräte Service Ges.m.b.H.	www.uts.at	Services for medical equipment
Vamed Standortentwicklung & Engineering GmbH & CO KG	www.vamed.co.at	Design, construction and operation of health care facilities
W.H.U. GmbH	www.whu-lab.at	Competence centre for water, hygiene and environment
Websinger Gesellschaft m.b.H.	www.websinger.at	manufacturer of sterile covers, surgical wound drainage products, products for otolaryngology; warming blankets
weiermayer industrial design	www.industrial-design.at	Development of design solutions
Wild Austria GmbH	www.wild.at	Development and production of sophisticated components, optomechtronic systems and complete equipment
Wozabal MPZ Medizinproduktezentrum GmbH & Co KG	www.wozabal.com	Conditioning of surgical instruments and medical products
X-Tention Informationstechnologie GmbH	www.x-tention.at	IT-services in medical/clinical field, IT-solutions, consolidation of transnational IT-structures, software-solutions for nursing and rest homes
y-doc Infotainment Michael F. Richter	www.y-doc.at	Individual patient information systems for resident doctors
Ziebermayr Mineralwerkstoffe	www.ziebermayr.at	Production of washbasins and customer-tailored workplates
Ziehesberger Elektronik	www.ziehesberger.at	individual embedded hardware and software development

- Research & Development Institutions: Decision makers/ Management, R&D staff/ engineers/ technicians.

Our contact is always in management. We cannot give personal contact details because of data protection.

Biomed - Zentrum für biomedizinische und medizintechnische Forschung	www.biomed.or.at	Centre for biomedical and medical technology research
Carinthian Tech Research AG	www.ctr.at	Industry-oriented competence centre for intelligent sensors
CBL Center for Advanced Bioanalysis GmbH	www.cbl.at	Non-profit research organisation
CEMIT Center of Excellence in Medicine and IT	www.cemit.at	project- and programme management of national and international research programmes in the fields of Life Science, Medicine and IT

Competence Center Health Care GmbH	www.cchc.at	Consulting, network activities, research & development
Donau-Universität Krems - Abteilung für Umwelt- und Medizinische Wissenschaften	www.donau-uni.ac.at	university
Donau-Universität Krems - Zentrum für Management und Qualität im Gesundheitswesen	www.donau-uni.ac.at/zasg	university
FH Oberösterreich Management GmbH	www.fh-ooe.at	Agency of all Upper Austrian advanced technical colleges
FH OÖ Management GmbH Fachhochschul-Studiengänge OÖ Medizintechnik	www.fh-linz.at	advanced technical colleges for medical technologies
FH OÖ Studienbetriebs GmbH Campus Steyr	www.fh-steyr.at	advanced technical colleges for global sales management
FH OÖ Studienbetriebs GmbH Studiengang Bio- und Umwelttechnik	www.fh-wels.at	advanced technical colleges for bio- and environmental technology
FH OÖ Studienbetriebs GmbH Studiengang Computer- und Mediensicherheit	cms.fh-hagenberg.at	advanced technical colleges for computer and media safety
FH OÖ Studienbetriebs GmbH Studiengang OÖ Sensorik und Mikrosysteme	www.fh-wels.at	advanced technical colleges for sensor technology and mikro systems
Florian Wiplinger energy for us	www.efu.at	Research, development, consulting
Forschungszentrum für Nutzerzentrierte Technologien - FH Vorarlberg GmbH	www.fhv.at/res/uct	design of technology and media for people
forte Fortbildungszentrum Elisabethinen Linz GmbH	www.forte.or.at	Training for hospital employees, courses in health sector, postgradual education, event organization, room rental
FORTEC - Rehabilitationstechnik / Institut "integriert studieren" an der Technischen Universität Wien	www.fortec.tuwien.ac.at	lectures, research & development in the area of (Ambient) Assisted Living, curative, assistive and palliative medicine, user centred design of user interfaces within the area of Bioelectronics (biological and electronic systems), and related ethical aspects
Handelsagentur Gschladt	office@gschladt.at	innovator, research and development
Höhere Technische Bundeslehranstalt Leonding	www.htl-leonding.ac.at	Engineer education (elektronics, IT)
IMC Fachhochschule Krems GmbH	www.fh-krems.ac.at	university
JOANNEUM RESEARCH Forschungsgesellschaft mbH Institut für medizinische Systemtechnik & Gesundheitsmanagement	www.joanneum.at/msg	medical, biotechnology and health services research
Johannes Kepler Universität Linz - Institut "Integriert Studieren"	www.integriert-studieren.jku.at	information and communication technologies for people with disabilities in research and development

Johannes Kepler Universität Linz - Institut für Biophysik		Molecular cell physiology, electric physiology, fluorescence microscopy, cell culture, molecular biology
Johannes Kepler Universität Linz - Institut für Pflege- und Gesundheitssystemforschung	www.ipg.uni-linz.ac.at	department for care and healthsystem research
Johannes Kepler Universität Linz - Institut für Telekooperation	www.gup.uni-linz.ac.at	Department for technical computer science and telematics
Karl Franzens Universität Graz - Insitut für Pharmazeutische Wissenschaften und Technologien	www.uni-graz.at	university
Linz Center of Mechatronics GmbH	www.lcm.at	applied mechatronics research, Mechatronic Design and Process-Simulation, Electrical Drives, Hydraulic Drives, Information Analysis and Fault Diagnostics, Multi-Body & Multi-Field Dynamics and Structural Control, Sensors and Communications
maz - Mikrochirurgisches Ausbildungs- und Forschungszentrum	www.maz.at	research, education and training for mikrosurgical methods
MedAk - Medizinische Fortbildungsakademie	www.medak.at	Medical and non-medical education for doctors
Quality Austria Trainings-Zertifizierungs- und Begutachtungs GmbH	www.qualityaustria.com	competence in the fields of quality, environmental and safety management, three business areas of certification, evaluation and validation, provides training and individuals' certification as well as information, expert knowledge and service
Research Center Pharmaceutical Engineering GmbH (RCPE)	www.rcpe.at	interdisciplinary research institute in the area of pharmaceutical process- and product-development
Salzburg Management GmbH - University of Salzburg Business School	www.smbbs.at	university
Software Competence Center Hagenberg GmbH	www.scch.at	R&D
BioNanoNet Forschungsgesellschaft mbH	www.bionanonet.at	network

- Other relevant groups: health care insurance companies, health care decision maker groups and relevant political groups.

Evangelisches Diakoniewerk Gallneukirchen	www.diakoniewerk.at	handicapped aid, assistance to the elderly, hospitals, education, guest houses
Medizinische Gesellschaft für OÖ, Projekt Meduni Linz OÖ	www.meduni-linzooe.at	Association for realising the medical university of Linz
Oberösterreich Tourismus	www.oberoesterreich-tourismus.at	positioning Upper Austria as the well-being region No. 1

OÖ. Gebietskrankenkasse - Forum Gesundheit	www.oegkk.at	agency/management of health care facilities, insurances
Österreichische Apothekerkammer/Landesgeschäftsstelle Oberösterreich	www.apotheker.or.at	Board of chemist's
Österreichische Krankenhauszeitung	www.oekz.at	Magazine: The Austrian health care sector
Österreichischer Verband der KrankenhaustechnikerInnen	www.oevkt.at	Austrian association of hospital technicians
Österreichisches Rotes Kreuz, Landesverband OÖ	http://www.o.rokeskreuz.at	Red Cross Austria
Tiroler Zukunftsstiftung	www.zukunftsstiftung.at	location development agency of Tyrol

PP4: TIS innovation park, Italy

The National Health System of Italy

The National Health System of Italy, called the Servizio Sanitario Nazionale, offers inexpensive healthcare to all European citizens. In-patient treatments which are covered include tests, medications, surgeries during hospitalization, family doctor visits, and medical assistance provided by paediatricians and other specialists. The health system is also responsible for drugs and medicines, out-patient treatments, and dental treatments. Regardless of where one comes from, it is imperative that you have health insurance from the moment you arrive in Italy. Without it, issuance of a permesso di soggiorno (permit to stay) is not possible.

Key Players:

- **South Tyrolean SMEs: Decision makers/ Management, R&D staff, Marketing/ Product Development.**

- **REHA TECHNOLOGIES**

The goal of Reha Technologies is to develop and bring to market new devices, which improve the success and effectiveness of treatment and benefits for both the patient and the treating physicians and therapists about the neurological rehabilitation.

For performing an efficient rehabilitation, the extremities must be trained through repetitive and frequent exercising. For this purpose, rehabilitation robots are indispensable. Reha Technologies offers first-class equipment with first-class evidence. The offer. is made up of systems, which make rehabilitation faster and even more convenient than traditional therapy methods. Reha Technologies increase the efficiency and effectiveness of the rehabilitation approaches.

The services. are composed of maintenance, technical support and scientific consulting. Reha Technologies also offer trainings and workshops on the use of robotics in the area of neuro-rehabilitation.

- **HEALTH ROBOTICS**

Health Robotics is the undisputed global leading supplier of life-critical intravenous medication robots, providing over 175 hospital installations in 5 continents with robotics technology and software automation solutions deployed utilizing virtual high-availability technology. Its world-leading solutions CytoCare® and i.v.STATION® ONCO [hazardous IVs], i.v.STATION® [non-hazardous IVs], i.v.SOFT® [workflow engine for manual compounding], MEDarchiver® [life-critical clinical information system], and TPNstation™ [totally-automated parenteral nutrition] have and will greatly contribute to ease hospitals' growing pressures to improve patient safety, increase throughput and contain costs. Through the effective and efficient production of sterile, accurate, tamper-evident and ready-to-administer IVs, Health Robotics' solutions help hospitals eliminate life-threatening drug and diluent exchange errors, decrease other medical mistakes and sterility risks, work more efficiently, reduce waste and controlled substances' diversion, and diminish the gap between rising patient volume/acuity and scarce medical, nursing, and pharmacy staff.

- **ZIRKONZAHN**

Zirkonzahn transcribes the milling system, developed by his founder, Mr. Enrico Steger, which enables dental technicians to build high-quality constructions themselves.

However, this system, with which a person still uses his/her own hands, was not secured with success from the beginning, competing in a now computer-controlled engineering world. At his first presentation tour through Central Europe in 2004, Steger brought his fear, "that people will be convulsed with laughter when seeing the manually operated system." Enrico Steger chooses his own strategy: He focused on the end result, and then demonstrated all of the accomplishments of the Zirkonzahn milling system. The second part of his presentation was his self constructed device.

Many people had already pre-registered, the development of the zircon-milling started taking course. "The People were enthusiastic about the result which the zircon-milling achieved", described Enrico Steger. Today, the company Zirkonzahn sells its products in over 80 states. In the administrative office of the company, twelve languages are spoken and the folders are labelled with each country flag, from Great Britain's "Union Jack" to the Star - Spangled Banner of the USA, as well as, the flags of Germany, Spain, Mexico, Korea, South Africa, and Australia.

- **GRITTI SpA**

The company is specialized to import, distribute and deliver fixtures for the medical field, such as computerized axial tomograph and magnetic resonance devices.

They provide delivery, assistance and training for using the devices into the medical people which is allowed to operate in the clinics and hospitals.

- **TMS Telemedicine South Tyrol SpA**

The company is specialized in programming, software development and Telecommunication Systems for the Health sector and telemedicine. They have their focus on developing a Stroke Platform for South Tyrol.

- **MedArchiver**

MEDarchiver was founded in 2001 stemming from a collaboration between professionals and companies operating worldwide in the field of biomedical engineering, health telematics and clinical engineering.

1. The mission

The main objective of MEDarchiver is to finalize projects of high-tech integrated information system for healthcare facilities, hospitals and any other healthcare structure. Our customers are mainly public and private hospitals or specialists in various medical fields, and we provide them with all the support needed for the customization of our products according to their specific requests.

2. Activities

MEDarchiver provides the customer with skilled and professional resources (biomedical, clinical, software and electronic engineers), making sure the path to the end of each and every project is smooth and trouble-free. We take care of all the steps, from analysis to implementation, from training to maintenance. Among others, we provide the customer with the following unique services:

- Customization and tailoring of the software solution
- Integration with existing heterogeneous Information Systems
- Integration with Medical Devices
- On-site or remote training and support

- **MM Design**

Since 1991 MM Design is committed to provide valuable, reliable and personalized product design services to the customer. The design team has a diverse range of skills and experiences and is prepared to demonstrate its potential value to a wide range of industrial companies. The office is located in the north italian region Trentino Alto Adige, positively enhanced by the rich diversity of culture and tradition. The creative spirit of MM Design is refreshed daily by the balance of natural beauty and strong work ethic that are traditional aspects of life in this economic region. MM Design is committed to provide creative new ideas that are desired by sales and marketing. These ideas must be realistic solutions that conform to the individual engineering and manufacturing requirements of the specific company. The objective is to assist in differentiating the customer and its products in the market place. This is a key element to the success of MM Design and its customers.

- **INWENTA**

INWENTA People Management Solutions is a human resources consulting company skilled in providing advanced HR solutions. We specialize in selection of top management level and specialist level personnel, as well as, the diagnosis and development of employee competences.

- **eurocamina srl**

Eurocamina Srl has 35 years of experience in the field of medical papers, conductor-gels, electrodes and accessories; Eurocamina is located in the northern part of Italy (Egna/Bolzano). Part of our base paper is located in our own factory. Our well equipped chemical laboratory develops research and quality control according to ISO 9002/EN46002 and all our products are CE 93/42 marked.

We sell our products worldwide in more than 50 countries through about 150 specialized dealers. Only in Italy we work with 20 agencies and more than 100 retailers.

- **Calearo**

Calearo is a historic Italian Group, experiencing high level international growth, specialized in telecommunications and characterized by a tradition of innovative technological solutions for a competitive and rapidly evolving market.

The Group's structure has deep industrial roots and combines great experience in various telecommunications and automotive sectors with a dynamic and flexible organisation, meant to keep up with today's market and commercial partners.

As a competent solution provider, Calearo relies on its background history, its vocation and its investments in research to satisfy and even to anticipate market demands.

- **GPI SpA**

Realizza principalmente soluzioni per Sanità e Assistenza sociale rivolte sia all'ente pubblico che alle aziende private. La Società opera in questo mercato dal 1988 ed è capofila del Gruppo GPI che riunisce 11 fra aziende e consorzi. GPI è in costante crescita dal punto di vista dell'occupazione, del fatturato e degli investimenti in ricerca e formazione.

- **Tele+ Italia KG**

Since 2001 Tele+ Italia is active in the field of development and validation of systems and services for telematics applications in all modes of transport. One of the focal points in this field is the introduction of satellite navigation for safety critical and high economic value applications like aviation and transportation of valuable goods.

Further activities include the integration of navigation, communication and remote sensing (e.g. GIS) for location based services for the mass market (e.g. tourism) as well as for Search and Rescue (e.g. mountain rescue) and industrial applications (e.g. building of large structures).

Services of Tele+ Italia include:

- Safety analysis
- Business case analysis
- System architecture development
- MMI definition
- Software development

➤ HOSPITALS & CLINICS

Since the reform to only one medical enterprise (Sanitätsbetrieb / Azienda sanitaria) in the year 2007 South Tyrol is divided into four health districts, which correspond to the former medical enterprises (Meran/Merano-Bozen/ Bolzano-Brixen/Bressanone-Bruneck/Brunico). South Tyrol has seven hospitals, the central of which is in Bozen (Meran, Schlanders, Bruneck, Brixen, Innichen, Sterzing).

All services offered outside of the hospitals belong to the so-called “territorial services” e.g. the services of the basis medicine, the support of the psychological or of the psychiatric service outside of the hospital, the service for dependence illnesses and the office for hygiene and public health. Operational or ex-outside services are services, which do not limit themselves to a certain health district. These services are organized on provincial level all over in South Tyrol and have locally individual persons in charge dealing with those different sectors (micro biology, sport medicine, immunology, veterinary service, anatomy, pneumology, etc.).

● HOSPITAL BOLZANO

The Bolzano Provincial Hospital, originally built in the late 1980s, is a general hospital with a number of different specialties. Some 2,000 employees, including more than 300 doctors, see to the healthcare needs of over 200,000 inhabitants in 33 municipalities in the South Tyrol province.

The hospital has over 1,000 beds for some 36,000 in-patients annually. Out-patient clinics receive 180,000 patients and there are about 110,000 emergency patients every year.

● VILLA MELITTA

The Villa Melitta private healthcare facility is located in a quiet, verdant part of the Gries district. Founded in 1960 as a private ear, nose and throat clinic by **Dr. Franz Waldner**, Villa Melitta immediately set out along the path of constant development, assisted by the doctor’s entire family, who worked hard to promote the ongoing training of the its personnel. Today, Villa Melitta can boast a wealth of experience, particularly in the rehabilitation sector.

Villa Melitta has more than 69 patient beds for rehabilitation and an **outpatient physiotherapy centre** with its own swimming pool for water-based activities. In 2007, another physiotherapy centre was opened at No. 23, Via Noldin, in Laives. Moreover, patients can access a range of surgeries dealing with neurology, internal medicine, psychiatrics, geriatrics, ear, nose and throat, rheumatology and food intolerances. The management of Villa Melitta is entrusted to medical specialist and healthcare director Franz Waldner, together with his three sons, Andreas (a specialist in neurology and doctor of psychiatrics), Franz Xaver (a specialist in internal medicine and doctor of psychiatrics) and Rupert, who is responsible for running the private healthcare facility. Villa Melitta has **around 100 professionals** who show great commitment and passion in the endeavour to reach their objectives: to provide citizens, through a collaboration

agreement with the local healthcare trust, with services that have the same characteristics as those offered in public hospitals and surgeries, but do so in a private environment in which patients are made to feel at ease.

- **BONVICINI CLINIC**

The Bonvicini clinic provides medical assistance recovering the patients in many sectors:

- Orthopedical rehabilitation
- Neurological Rehabilitation
- Radiotherapy
- Many diseases which cannot be managed at home, and which requires a high level medical assistance.

All the patients are assisted through a personalized program, based on their needs.

Other sectors which are managed are.

- Physiotherapy
- Cardiology
- Gastroenterology
- Gynecology
- Neurology
- Radiology.

➤ **Research & Development Institutions: Decision makers/ Management, R&D staff/ engineers/ technicians.**

- **Free University of Bolzano/ Bozen**

The Free University of Bozen-Bolzano (Italian: Libera Università di Bolzano, German: Freie Universität Bozen) is a university located in Bolzano, Italy. It was founded on 31 October 1997 and is organized in 4 Faculties (Faculty of Computer Science, Faculty of Design and Art, Faculty of Education and Faculty of Science and Technology) and 1 School (School of Economics and Management).

The Free University of Bozen-Bolzano (FUB) aims to offer students a multilingual, practice-oriented education that meets the demands of the local and the European labour market. Lectures and seminars are held in German, Italian and English. The only exception here being the Faculty of Education, which offers German, Italian and Ladin speaking students separate training sections. The university offers study programmes ranging from bachelor degree up to doctoral.

The emphasis of teaching is to provide theoretically sound and practice-orientated training. A large proportion of educational activities take place as seminars, lectures given by guest-speakers, practical training and workshops. Within the framework of the academic exchange program students are encouraged to spend one or more semesters at universities abroad.

- **University of Trento**

The University of Trento is an Italian university that was founded in 1962. It has been able to achieve considerable results in didactics, research and international relations, as shown by Censis University Guide (where the University of Trento regularly appears in the first five positions, both in the general and faculties ranking) and by the Italian Ministry

of Education (according to which the University of Trento is the most virtuous university in Italy).

The didactic and scientific activities are concentrated around three main “areas”: the “polo di città” (city area), with the Faculties of Economics, Sociology, Law, Arts and Humanities; the “polo collina” (hill area) with the Faculties of Mathematical, Physical and Life sciences and the Faculty of Engineering, the “polo di Rovereto” (Rovereto area) with the Faculty of Cognitive Sciences.

The University is among the promoters of the Festival dell’Economia of Trento (Festival of Economics).

- **EURAC The European Academy of Bozen/Bolzano (EURAC)**

Created in 1992 as an independent research center, EURAC is home to researchers from all over Europe who work together on a wide range of interdisciplinary projects. Experts in law and natural sciences, linguists and geneticists collaborate with public and private agencies towards the resolution of some central issues of our day. Together they contribute to create a future-oriented Europe.

- **The Fraunhofer Society Italy**

The Fraunhofer Society (German: Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e. V. - "Fraunhofer Society for the advancement of applied research") is a German research organization with 60 institutes spread throughout Germany, each focusing on different fields of applied science (as opposed to the Max-Planck-Gesellschaft, which works primarily on basic science).

➤ **Other relevant groups: health care insurance companies, health care decision maker groups and relevant political groups.**

- **Foundation Vital (Health Portal for South Tyrol)**

Il compito della Fondazione è quello di progettare ed eseguire iniziative e progetti in ambito del mantenimento e della Promozione della Salute, includendo tra le sue attività anche l’informazione e l’Educazione Sanitaria sulle malattie evitabili e sui fattori che influenzano la salute. Le attività principali della Fondazione Vital riguardano il movimento, la nutrizione ed il benessere mentale.

La Fondazione Vital agisce negli ambienti di vita delle persone, cioè dove le persone giocano, studiano, lavorano ed amano. Il nucleo delle attività presenti riguarda la promozione della salute a livello comunale ed aziendale.

- **Claudiana Landesfachhochschule für Gesundheitsberufe**

La Claudiana é il centro di formazione per le professioni sanitarie infermieristiche e ostetriche, della riabilitazione, tecniche diagnostiche, tecniche assistenziali e della prevenzione in Provincia di Bolzano. L’offerta formativa prevede lauree di base nelle professioni sanitarie, master di primo livello e la formazione continua per i professionisti della salute.

La Claudiana collabora attivamente con diverse Università sia italiane che internazionali. Per garantire una formazione accademica, sono state stipulate convenzioni con la facoltà di Medicina e Chirurgia dell’Università degli studi di Verona, dell’Università Cattolica del

Sacro Cuore di Roma, dell'Università degli Studi di Ferrara nonché con l'Università di Innsbruck.

Queste collaborazioni e l'ottima cooperazione con l'Azienda Sanitaria dell'Alto Adige garantiscono una formazione bilingue (lingua italiana e lingua tedesca) di altissimo livello. Gli studenti vengono accompagnati durante il loro percorso formativo da tutor professionisti e possono usufruire delle moderne tecnologie presenti presso la Claudiana.

I responsabili dei Corsi di Laurea garantiscono l'accesso ad sedi formative altamente qualificate, premessa questa che rende la Claudiana una sede formativa moderna e fortemente orientata al mondo del lavoro.

- **TIS innovation park**

The TIS innovation park sees itself both as a centre as well as a driving force for innovation, cooperation and transfer of technologies for all stakeholders in innovation, but above all, for individual companies.

TIS

1. provides an area for economic development and stability through innovation, cooperation and transfer of technologies;
2. is a centre for those pioneering innovation;
3. links the economy with science.

It serves as a gateway to the latest technological trends, as an institution for translating academic and international knowledge into economic exploitation and concrete applications, and promotes innovative projects within small and medium-sized companies.

PP5: Lower Silesian Voivodeship, Poland

Clinics/ hospitals including university hospitals, clinics with all supply levels, publicly owned, private non-profit and private for-profit.

Wroclaw Medical University

Wroclaw Medical University is the largest centre for specialized treatment of patients from Lower Silesia, Opole, Lubuska Region. 2 university hospitals (the University Hospital and the University Hospital no. 1) are equipped with modern instrumentation and diagnostic tools including 64-row computer tomography scanner (CT coronarography, CT perfusion imaging, CT angiography), a 1.5T magnetic resonance scanner using advanced software (MR spectroscopy, functional MRI, MR diffusion tensor). The hospitals provide highly specialized services using the latest methods of treatment, including the following: immunoablation in the treatment of bone aplasia, immunosuppressive treatment following a vascular organ or bone marrow transplantation, taxoids in combination therapy of ovarian cancer etc

Wroclaw Medical University consists of five faculties providing education in the field of medicine:

- **Faculty of Medicine**
- **Faculty of Dentistry**
- **Faculty of Pharmacy**
- **Faculty of Health Science**

- **Faculty of Postgraduate Medical Training**

The scientific research focuses on biochemical, biophysical and biotechnological aspects of microbiology, immunology, virology, cell biology and plant physiology. conducted in other Universities:

University of Wrocław - Today the University of Wrocław is the largest university in the region and teaches over 40,000 students and around 1300 doctoral students at 10 Faculties. 9000 students graduate from the University every year. There are some faculties involved in medical research:

- Faculty of Biological Sciences
- Faculty of Biotechnology

There is a new unit of the designed to aid students in starting their own businesses by providing free entrepreneurial advice, organizing conferences, seminars, subsidizing selected investments and offering office space. University of Wrocław creates The Academic Incubator of Entrepreneurship. It cooperates with the Wrocław Technology Park, a technological centre with laboratories, office space, conference centre and modern multimedia equipment. The objective of the Technology Park is to create conditions for the use of scientific and industrial potential of Wrocław and the region and to stimulate the advanced technologies industry. The University of Wrocław is proud to be one of its shareholders.

Wrocław University of technology – Department of Biotechnology

Wrocław University of Environmental and Life Sciences

SMEs: Decision makers/ Management, R&D staff, Marketing/ Product Development.

Wrocław Medical Science and Technology Park

Wrocław Technology Park – focus small/medium innovative enterprises which are welcome to locate their businesses there. Wrocław Technology Park has launched an offer of services for entrepreneurs registered in Wrocław Technology Park

R&D services,

2. Training or consulting services within the scope of scientific research, developmental works or innovative undertakings.
3. Training or consulting services connected with formation or development of enterprises conducting scientific research, developmental works or innovative undertakings.
4. Consulting services within the scope of technologies or intellectual property rights.

Research & Development Institutions: Decision makers/ Management, R&D staff/ engineers/ technicians.

Wrocław Research Centre EIT +,

Wrocław Research Centre EIT +, is an entity aimed at integrating the research potential of the entire academic society. The Company's strategic goal is to organize and carry out interdisciplinary research activities in the field of biotechnology, medical technologies, clean power generation, information and communication technology, nanotechnology and advanced materials. These activities will be

accompanied with initiatives aimed at the commercialization of obtained results. Other important goals of the Company are advanced forms of teaching graduate and PhD students as well as training of staff for the purpose of technology transfer to industry. The use of technology development forecasts helps to focus research and commercialization efforts on selected future promising areas.

More information on: www.eitplus.com

Institute of Immunology and Experimental Therapy, Polish Academy of Sciences located in Wroclaw - Major Research Programs

Other relevant groups: health care insurance companies, health care decision maker groups and relevant political groups.

In Lower Silesia there are many leading companies and business clusters, such as:

1. e-Health Cluster,

The assurance in all-Polish scale of lucrative conditions for the transfer of knowledge and technologies in the field of Health, the creation of regional program of informatization of services in the sector of health protection

2. University Centre for Technology Transfer,

The Centre's mission is to improve the efficiency and competitiveness through innovation. We focus primarily on promoting the use of research results in modern economy, as well as creating and promoting entrepreneurship, in the broad sense. Therefore, our services are directed both to scientists and businesses (including young entrepreneurs and start-ups), scientific business consortia and R&D institutes

3. Cluster "Knowledge and Innovation Community for Information and Communication Technologies",

The main objective of the cluster "Knowledge and Innovation Community for Information and Communication Technologies" is to establish a common cooperation platform for innovative Polish and European IT & ICT Companies, institutions using IT as well as local governmental bodies and Colleges & Universities and specialized higher education institutions.

4. Consortium – Wroclaw Institute of Public Health,

Consortium was established between the: governor of Lower Silesia, Lower Silesian Voivodeship, Municipality of Wroclaw and Wroclaw Medical University in order to build partnerships and create a platform of cooperation for those carrying out tasks in the field of public health, in particular, actions are joint ventures for research and development work.

5. Pharmaceutical Production Company HASCO-LEK S.A.,

It engages in the contract manufacture and supply of soft gelatin capsules and other pharmaceutical products. It also offers contract production of other forms, such as tablets, syrups, fluids, extracts and tinctures, ointments, creams, suppositories, and powders; and GMP certified products and GLP certified analytical services.

6. Alzheimer's Treatment Centre in Scinawa

PP6: The John Paul II Hospital, Poland

Institutions

Universities

Malopolska, especially its capital the city of Krakow is one of the largest and most expansive academic centers in Poland with a number of universities for technical and humanistic studies. The most important medical schools and research institutions are as follows:

- **Jagiellonian University College of Medicine** – The Jagiellonian University is the oldest academy in Poland with a history and tradition of 600 years and a long list of contemporary achievements. The University has the highest scientific impact in Poland and its employees publish papers in prestigious international scientific journals. The University is also proud of having the largest group of grant holders of the Foundation for Polish Science in the last 4 years. The College of Medicine consists of four faculties providing education in the field of medicine:
 - o **Faculty of Medicine and the School of Medicine In English**
 - o **Faculty of Pharmacy**
 - o **Faculty of Health Science**

In the University structure there is also the **Faculty of Biochemistry, Biophysics and Biotechnology**. Scientific research focuses on biochemical, biophysical and biotechnological aspects of microbiology, immunology, virology, cell biology and plant physiology. The Faculty cooperates with many scientific centers in Poland and abroad, including recently pharmaceutical and biotechnological industry, and hospitals.

- **University of Agriculture in Krakow** - On 11th April 2008 Agricultural University changed into University of Agriculture in Krakow and is the only University of Agriculture in Poland. Current educational offer comprises 45 main fields with 45 specializations, there are about 13 thousand students enrolled at all types of studies. The University offers also 32 postgraduate programmes for Master Diploma holders. The University has the following faculties:
 - o **Biotechnology – Interfaculty Studies** including:
 Applied Biotechnology
 Biotechnological Analytics
- **AGH University of Science and Technology** - It serves the science, economy and society through educating students and the development of scientific and research staff, and conducting scientific research:
 - o **Multidisciplinary School of Engineering in Biomedicine** – the goal is higher education and integration of research work in the field of biomedical engineering. The tradition and experience of research work and education in various aspects of technical support for medicine at AGH-UST is 30 years old. The School includes:
 Faculty of Electrical Engineering, Automatics, Computer Science and Electronics
 Faculty of Materials Science and Ceramics
 Faculty of Mechanical Engineering and Robotics
 Faculty of Metals Engineering and Industrial Computer Science
 Faculty of Physics and Applied Computer Science)

Scientific research is conducted in the framework of joint projects, academic teachers with ample scientific experience in biocybernetics, biomedical engineering and related disciplines are members of the Scientific Council of the MSEB. The following projects are being implemented at present:

- Novel computerized diagnostic and, therapeutic equipment, and artificial organs
- Biomaterials and biocompatible compounds used for instance in medical implants

- Mechanical bioengineering, biotribology and bioacoustics, bioengineering constructions, implantology, orthopedics, biomedical equipment
 - Novel applications of physics in the field of biological nanomaterials
- **Krakow University of Technology** - by realizing its goals the University of Technology works towards creating a national, European and global space for research and education. It thrives towards interdisciplinary studies and research, combining technical science with mathematical, environmental, economical, legal and social sciences, using information technologies. It develops the ability to self-educate in students, giving them a good basis for work on the modern market, arising with the development of civilization:
- **Faculty of Chemical Engineering and Technology** – offers studies in biotechnology, mainly industrial biotechnology which is applied in various sectors, including Healthcare sector.
- **Scientific Consortium** – at the instigation of Anna Prokop-Staszecka MD, PhD Director of the John Paul II Hospital on 20 January 2011 the Hospital signed an agreement with six teaching and research institutions. The aim of the agreement is broad scientific collaboration, sharing experience, infrastructure, equipment and scientific output of the Parties – especially in the context of postgraduate courses in Novel Methods of Medical Diagnosis and Therapy scheduled for the academic year 2011/2012. The following Parties signed the agreement:
- AGH University of science and technology in Krakow
 - Henryk Niewodniczanski Institute of Nuclear Physics of the Polish Academy of Sciences
 - Institute of Tuberculosis and Lung Diseases – Rabka-Zdroj Branch
 - Institute of Zootechnics – National Research Institute
 - Krakow University of Technology
 - University of Agriculture in Krakow

The project is realized under the patronage of the Marshal's Office of Malopolska and Governor of Malopolska.

Cluster initiatives

In Malopolska province there are three clusters which focus on cooperation between healthcare institutions and industry. They are:

- **The Medicine of Poland Southern-East Cluster** – is formed by 45 partners from the Province of Malopolska, Silesia, Podkarpackie, Swietokrzyskie and Lubelskie. The group includes enterprises in the field of healthcare and medical tourism, research institutes, manufacturers of medical equipment and software, spas, wellness centers, cosmetic centers, IT companies, consulting companies, tourist companies, marketing agencies, PR agencies and local government agencies. The goal of the cluster is to establish coordinated health care, comprehensive medical services and medical tourism services using the most advanced and innovative technology.
- **The Interregional Cluster of Innovative Technologies „MINATECH“** – is the common initiative of the Province of Malopolska, Podkarpackie, Silesia and Swietokrzyskie regarding innovative technologies in the field of microtechnology, nanotechnology and biomedical engineering to concentrate the potential for accelerating the development of modern technologies and their implementation in everyday practice. The Cluster promotes rationalization of intellectual and material

potential through building an environment of cooperation between universities, research institutes, local governments, enterprises, development agencies, associations and foundations and through increasing competence of partner regions. Partners are local governments, universities, enterprises and business related institutions.

- **The Cluster LifeScience Krakow** – of 57 partners 30 represent companies in the field of life science (biotechnology, pharmacy, medicine, nutrition and environment), consulting firms and other local government entities. The Cluster carries out its activities in three areas:
 - Building a network of collaborators to assure effective ties and making use of the existing potential in the market: people, companies, universities, research institutes, business related institutions, local and regional governments
 - Supporting entrepreneurship and innovation and building an environment of effective commercialization of R&D results
 - Pooling and developing resources and competences to assure more effective use of existing resources and chances of evolving innovative and knowledge-based economy

Business related institutions

Apart from clusters there are also business related institutions which cooperate with hospitals in Malopolska:

- **The Medical Technology Transfer Center and the Technology Park Ltd.** – was established in 2007 by the John Paul II Hospital in Krakow having 100% of the share capital of the Center. The company was a response to demand formulated by the scientific and research circles and by industry in order to initiate and coordinate cooperation of both sectors. The John Paul II Hospital in Krakow is the first institution of the health sector in Poland that has established a company of this type. The scope of activity is as follows:
 - commercialize inventions and research results obtained by science and research institutes
 - promote their intellectual and infrastructural potential
 - support innovations and cooperate with industry, especially medical and pharmaceutical
 - generate research and translate its results into technological innovations to provide medical services
 - protect intellectual property, coordinate commercialization of innovations and support to obtain funding for innovative projects

The strategic goal of the Center is to establish a technological and scientific basis i.e. Technology Park being part of the John Paul II Hospital in Krakow to facilitate knowledge and technology transfer between research institutes and industry. The Center developed also internal regulations for the management of intellectual property at John Paul II in Krakow. It is the first instance of intellectual property regulations in a healthcare institution in Poland. The process of implementation will end in March 2011. The Center for Medical Technology Transfer Technology Park Ltd. has obtained external funds as part of the project “Innovations – Hospital – Business – implementation of comprehensive intellectual property management regulations at John Paul II Hospital in Krakow” supported by the Ministry of Science and Higher Education under the headline “Creator of innovation – academic innovation support”. At present the Center is carrying out several projects funded by the European Social Fund helping people improve their knowledge of academic

entrepreneurship, commercialization, financing innovations, protection of intellectual property, promoting science.

- **The Jagiellonian University Center for Innovation, Technology Transfer and Development of the Jagiellonian University** – based on a great intellectual potential of the University. The scope of activities is as follows:
 - Commercialization of research results
 - Building an environment of cooperation between the sector of business and science
 - Promotion of innovation and related issues
 - Intellectual property management (patents, internal regulations)Excellent technical resources and experienced teams provide the milieu for undertaking unique tasks and projects.
- **The Krakow Technology Park** – the main actors are the Krakow University of Technology, AGH University of Science and Technology and the Jagiellonian University. The main goals are as follows:
 - Development of advanced technology industry making use of R&D potential of universities and research institutions in Krakow
 - Creating an economic, infrastructural and organizational environment for national and foreign investors who declare to use and develop R&D potential of Krakow, especially in the field of advanced technologies
- **The Jagiellonian Center of Innovation Ltd.** – a university company established in 2004 which manages the LifeScience Park in Krakow. It aims at:
 - Improving cooperation between companies and institutions in the field of life science in the country and Malopolska Province
 - Providing services based on resources of the Jagiellonian University
 - Participating in capital investments (innovative projects and companies)
 - Promoting Krakow as a site for developing life science in the field of biotechnology, biomedicine, chemistry, pharmacology, biophysics, physics and environment

The Jagiellonian Center of Innovation Ltd. has established a daughter company - **JCI Venture Ltd.** which serves as the seed capital fund for high risk projects in the field of life science in their first phase of development. The goal of the company is to establish 11 innovative entities which will use the model of R&D commercialization.

- **The Malopolska Agency for Regional Development S.A. (MARR)** – was established in 1993 to support entrepreneurship in the region. As an institution it underwent modification to become a Regional Funding Institution and since 2001 it has been responsible for promotion and management of EU resources. Since January 2010 the MARR has been implementing capital investment projects – MedFund. This capital fund is used for commercialization of scientific results in the field of medicine. It will support technology transfer from R&D entities to companies established with the help of MedFund. The Project is addressed to companies which apply modern solutions and manufacture products or provide specialist services in the field of medicine, pharmacy, rehabilitation, sports or leisure. The Project will end in December 2013.
- **Technology Transfer Center – Krakow University of Technology** – established in 1997 it promotes innovation in the region through combining business and science. It implements international projects aimed at the development of science and the enhanced competitiveness of Polish enterprises. It facilitates contact between technology-related enterprises and research institutions, establishing partnerships,

and providing advice to organizations that have applied for financing from Framework Programmes and Structural Funds. TTC promotes information exchange and the international transfer of innovative solutions in all scientific domains and industries. We inform about legal protection of intellectual and industrial property. Our offer is meant for SMEs and research institutions. Within the Enterprise Europe Network (EEN) the TTC is a coordinator of the Southern Poland Consortium, whereas on the national level it implements the POIG 5.2 activity: Support of business-related institutions offering innovative services and their networks of transregional significance.

Companies

The LifeScience Cluster involves the most expansive enterprises in the medical sector such as:

- **Apipol- Kraków Sp. z o.o.** - is a company with many years' tradition, which produces and processes bees products. Modern biotechnologies are used by APIPOL-KRAKÓW in a complex system of apiary economy for the production of high quality food and products with healing properties. This system called the APIPOL SYSTEM allows for effective and economic apiary production. We offer honey, royal jelly, bee products, apitherapy, propolis, bee cement, herbal honey, bee pollen and other products.
- **Barwa Ltd.** - A manufacturing company established in 1949 is engaged in the production of specialized and general-purpose toilet soaps, and cosmetics and cleaning materials, based on the latest trends and innovations in cosmetology. All products contain selected high quality natural components.
- **BioCentrum Ltd.** - A private spin-off type biotechnological company. It is a research and development company in the field of virulence factors of bacteria as potential therapeutic products and antibacterial peptides as potential antibiotics. The company acts as an agent between parties ordering research and development projects and implementation works and their contractors bridging the gap between university researchers and industrial companies from the pharmaceutical sector. The company is involved with laboratory production of mouse monoclonal antibodies, sequencing, amino acid analysis, purification and 2D electrophoresis of proteins.
- **BIOSPEKT** –provides advanced solutions in the field of environmental analytics, education and scientific counseling. It cooperates with the most prominent scientists from the Institute of Environmental Science at Jagiellonian University having access to laboratories and equipment of the III University Campus. The company's areas of interest include:
 - chemical analytics (determination of elemental concentrations)
 - sewage treatment plants consulting (microbial analyses and courses)
 - mycology (fungi air and building monitoring)
 - environment valorization
 - R&D in the field of life science
- **BioTe21 Adam Master** – Our strategic aim is to create a technological and scientific resource base facilitating the development of useful bioinformatic projects as well as elaboration and implementation of new biotechnologies with particular consideration

of applications in molecular medicine. Within the basic activity of our laboratory we offer the following services: DNA synthesis and sequencing, genetic engineering and genetic identification including paternity testing. BioTe21 is also interested in searching for application and implementation of scientific discoveries in biotechnology and medicine based on rudimentary studies of genome, transcriptome and proteome.

- **Jan Bobr Memorial Centre for Microbiological and Vaccine Research Ltd.** – we perform microbiological analysis of diagnostic material from the airways, genitor-urinary tract, skin changes (abscesses, furuncles, acne, etc.), surgical wounds and others. Microbiological analysis depending on the material type is performed for the presence of aerobic and anaerobic bacteria, fungi, dermatophytes etc. Depending on the etiological factor we use classical methods (culture, isolation and identification) or commercial growth-culture kits for serology, biochemistry and genetic probe.
- **ChemTech-ProSynTech** – it is an innovative engineering microenterprise. The entire production profile of the company has been developed as a result of research, followed by successive implementations. Long-lasting production for the leather industry allowed us to recognize fundamental needs of domestic leather manufacturers and to identify problems created by this sector for the natural environment, which resulted finally in the elaboration of modern technology for recycling.
- **Eco Plant Household Ltd.** – it is a factory of plant extracts for cosmetic and pharmaceutical industry. The company also carries out biotechnology studies.
- **FARMINA Ltd.** – manufactures pharmaceuticals in compliance with international high quality standards. The company also carries out research to establish and manufacture new pharmaceuticals. The company uses new technological and pharmaceutical solutions in its laboratories.
- **FQS Poland Ltd.** – FQS Poland was established to serve as an Fujitsu Kyushu Systems Limited (FJQS) European center for research and development of scientific software. It is our intention to provide premier products and services consistent with the existing Fujitsu portfolio for the worldwide market and facilitate transfer of European technologies to Japan and vice versa.
- **iMed24 S.A.** – belongs to the Comarch Capital Group. The company produces software for physician's offices, outpatient departments and healthcare networks. The iMed24 system facilitates patient documentation (also entirely in the electronic form using free of charge electronic signatures), patient management in outpatient departments (registration, info line, call-center, settlements, analysis), creating medical packages and settling accounts with contractors, physicians, insurers and National Health Fund, handling fiscal equipment.
- **INNOWACJA POLSKA Sp. z o.o. EC Grupa** – is a leading consulting and R&D company providing services based on the newest technology and qualified personnel. Its mission is to develop and transfer new technologies to manufacturing industry, providing step change improvement in competitive advantage for industry as a whole. Through the high technological potential, knowledge, experience, and the network of collaborating partners, it can broadcast very secure links between the scientific word and SMEs in Poland and abroad.
- **Institute of Biotechnology, Sera and Vaccines BIOMED S.A.** – is an expansive Polish pharmaceutical company in the field of biotechnology with long-standing

experience (since 1945). It produces food supplements, vaccines, allergens, diagnostic preparations, media and indices. BIOMED continuously improves its products in compliance with quality and market requirements. It implements new technologies, cooperates with Polish scientific centers, carrying out joint research.

- **Krakow Cardiovascular Research Institute Ltd.** – is an organization to carry out commissioned clinical studies. It specializes in research into the mechanisms of cardiovascular disease, but it has ample experience in other medical specialties. KCRI has its own laboratory for analysis of angiographic, MR and IVUS images, and ECG tracings.
- **MDS Pharma Services Poland Ltd.** – is part of MDS Pharma Services international concern, which in turn is a member of the global MDS Inc. corporation. It provides comprehensive services at various stages of research and development processes with regard to medicinal products. The company has become one of the lead CRO companies.
- **MRI Tech** – The company develops and manufactures low field magnetic resonance imaging (MRI) systems for clinical applications. It cooperates with the Institute for Biodiagnostics of National Research Council in Canada and AGH University of Science and Technology in Krakow strengthening its innovative and creative potential.
- **Oncogene Diagnostics Ltd.** – deals with molecular biology, molecular diagnostics and research. The company is the founder and administrator of a new biotechnology site www.dolinabiotechnologiczna.pl.
- **PLIVA Kraków** – is a European manufacturer of generic drugs and member of the Barr Pharmaceuticals, Inc. Group, the global pharmaceutical company functioning in more than 30 countries. The Barr Group also deals with biomedical research, manufacture of modern drug carriers, and innovative pharmaceutically active substances.
- **ScholaGene - Experts in BioScience** – the strategic aim of the company is to create the know-how resource, associating experts in various fields of Life Science cluster. In that manner, we consolidate unique expertise and skills of our experts, linked with major academic societies and industrial companies in Europe.
- **Selvita Ltd.** – is an innovative Polish company providing products and solutions for the Life Sciences Industry. We employ a world-class team of dedicated medicine, chemistry, pharma, molecular biology, biotechnology and information technology professionals and enjoy a very good cooperation with leading Polish, European and U.S. universities and research institutes. Its mission is to deliver comprehensive solutions to the customers from Life Sciences industry targeted at lowering the cost of introducing innovative therapeutic compounds to the market.
- **Silvermedia** – has a range of e-health information management solutions. Unique solutions in healthcare IT promote medical data management from data collection to analysis. The system facilitates the use of mobile devices on all stages and supports the functioning of healthcare institutions in the field of telemedicine, telecare and monitoring the quality of therapy. Each system is fully customizable for client's specialist requirements.

- **Trigendo Ltd.** – an innovative Polish capital company targeted to production and clinical evaluation of selected chemical compounds in coffee. The company conducts chemical, biochemical and pharmacological research to produce new compounds counteracting endothelial dysfunction.

PP8: Regional Development Agency of Gorenjska, Slovenija

COMPANIES

- **ISKRATEL**

Iskratele develops integrated telecommunications solutions for the information society. With 60 years of experience in telecommunications it ranks among the world's most important high-tech companies.

The company's basic activity is the development of complete solutions for fixed and mobile telephony, convergence networks, next generation networks, and the network management required for the communication needs of the future information society. Apart from its core activity of providing complete end-to-end (E2E – End to End) telecommunications solutions, the company's business philosophy includes collaboration with its partners, and offering support services – network design, training, after-sales support and consulting.

Iskratele's presence in more than 30 different countries ensures the full compatibility of its network solutions, while Iskratele's innovative solutions provide a range of business benefits that increase carrier revenues.

- **Iskra MEDICAL**

This company is a leading manufacturer of devices for physiotherapy, rehabilitation, and cosmetics.

Currently, their production assortment includes the electrotherapy, ultrasound, vacuum, laser, pressure, magneto, intense pulse light, and radio frequency equipment, but they constantly continue to broaden their family of quality medical in cosmetic products. The starting point in development of a new product is to study the intended purpose of the device what is frequently done in cooperation with clinics.

- **Optotek Medical**

Optotek specializes in developing innovative optical and laser solutions and technologies for applications in medicine and life environmental. Our strong interaction between research, engineering and marketing enables us to develop new products to meet the emerging needs of the market place. Optotek established long-term cooperation with Clinical Center Ljubljana.

R&D INSTITUTES

- **Institut Jozef Stefan with its chemistry and biochemistry departments**

The Jožef Stefan Institute is the leading Slovenian research organization. It is responsible for a broad spectrum of basic and applied research in the fields of natural sciences and technology. The staff of around 850 specializes in research in physics, chemistry and biochemistry, electronics and information science, nuclear technology, energy utilization and environmental science.

- **R&D Institute Iskra Techno**

Iskra Techno, R & D Institute is a private non - for profit research and development institute established by 7 companies (SMEs) and University of Maribor, Faculty of Electrical Engineering and Computer Science in year 2000. The aim of its activities is transferring knowledge from research and development organization to industry. The aforementioned assistance is provided through joint research projects, easier and more importantly more effective access to national and international grants, easier access to measuring equipment,(The Institute poses own Laboratory for special measurements), joint market approach, providing information about development and current events.

FACULTIES and SCHOOLS

- **Faculty of Electrical Engineering University of Ljubljana**

Research work at the Faculty of Electrical Engineering operates in 9 major fields, which are fully covered by 287 registered researchers and 31 technical collaborators working in 26 research groups. These fields are: electrical energy, electric machines and power electronics, electronics, microelectronics, bio-cybernetics and biomedicine, measuring systems, automation and cybernetics, robotics and telecommunications.

- **Nursing school Jesenice**

NJ's Research Institute brings together researchers who aim to meet the following goals:

- develop and implement scientific research work at the College for the National Research and Development Programme of Slovenia;
- apply for and carry out research projects (basic, applied and clinical research projects) in Slovenia (Slovenian Research Agency - ARRS, Ministry of Higher Education, Science, and Technology - MVZT, Ministry of Health, and the Health Insurance Institute of Slovenia) and abroad (EU tenders);
- actively promote the participation of first and second cycle students in College research work;
- publish research results;
- foster the implementation of research results in the clinical setting;
- inform the public of research results; etc.

Research is an extremely important aspect of health care and nursing. As an integral element of the health care system, nursing should be based on research results, with research activities becoming incorporated into the work of every RN and other highly skilled health care professionals. Nursing practice should be based on research results obtained by nurse researchers. The International Council of Nurses (ICN) stresses that research leads to better knowledge on how to maintain health and ensure the wellbeing of the population.

- **Medical faculty University of Ljubljana**

At the Medical faculty there are 841 employees: 223 high school teachers, 80 assistants, 83 researchers, 56 young researchers and 399 technical and administrative workers. Department for technical medical activity consists of Institute for microbiology and immunology, Institute for pathology and of Institute for judicial medicine. Within the department for technical medical activity there are also systematized certain centres and labs for technical medical activity.

Pedagogic and scientific work is being performed in university departments and institutes and in certain centres and labs within the specific institute of the faculty.

- **Faculty of Organizational Sciences**

At the Faculty of Organizational Sciences, research activities are of extraordinary importance as they complement and upgrade the educational activities. Most of all, they are connected through including students in research activities. Research at the Faculty has been organized within the framework of the Institute for Organization and Management, which comprises the Research Centre, the Centre for Education and Counselling and the Moderna organizacija publishing house. For the most part, research activities take place in the form of research and development projects; they are executed within independent laboratories and in cooperation with the economy. National projects are financed from the state budget or from the economy, while international projects are mostly financed from the European Union funds for different research and development programmes. An important component of the research work is the presentation of research results and achievements. Researchers present their achievements in the form of contributions to domestic and international conferences or in scientific and professional journals.

Research Subjects at the Faculty of Organizational Sciences

- Organization and management;
- Human resource and educational systems;
- Business and work systems;
- Informatics and information systems;
- Decision-making theory and the support systems for decision-making;
- eCommerce;
- Project management;
- Modernizing business processes;
- Multimedia systems and
- Ecological Management

Also important to mention is Slovenian biomedicine technologic platform for innovative and supporting technologies in medicine **I-TECHMED**. Their main goal is the establishment of a technological platform for innovative and supporting technologies in medicine on a national and European level. TP consists of about 60 members from industry, SMEs, and academic institutions. Among them is the majority of the partners included in the Intramed project.

In the future clinics will try to develop or upgrade their already existing cooperation with above mentioned institutions and companies, also within the project INTRAMED. The achievement of INTRAMED goals will translate into some important changes of the current situation; especially in the field of clinics' organizational culture so that R&D results would be implemented by the business on a wide scale.

The objectives of the Intramed project will enhance the present level of cooperation between clinics and economy sector in the Gorenjska region. The results of the project in the form of guidelines and transfer of good practices in the innovation effort (from more advanced EU regions) will build a solid foundation and spring board for innovation in clinics.

PP9: CVVI - Centre for research, innovation and regional development, Czech Republic

In the course of conducting the IntraMED-C2C project activities almost one hundred subjects belonging to the target groups defined by the project were addressed.

Among these addresses following actors are deemed to be the key players with respect to the project concept and goals. The actors listed are mainly situated in the chosen region (The Capital city of Prague and the Central Bohemia Region), however some of them exceeds its borders due to the partially limited representativeness with respect to all target groups of the project.

The listed actors are meant to be examples of key players not comprehensive sum of the relevant actors. Further

The persons contacted in hospitals were predominantly employees of the economic section within the hospitals' organizational structure. In the SMEs sector mostly marketing and product developments staff was addressed.

Hospitals:

Faculty Hospital Motol¹

Faculty Hospital Na Bulovce

Central Military Hospital Prague

General Faculty Hospital in Prague

Five Regional Hospitals of the Central Bohemia region situated in Příbram, Kladno, Kolín, Mladá Boleslav and Benešov

- **private health care institutions**
 - Santé
 - Comfort Care
 - Centre of clinical immunology

SMEs

TESCO SW

Inlab medical s.r.o.

Mediset Chironax

Oxytechnic, s.r.o.

BTL

Compek Medical Services

S.A.B. Impex, s.r.o.

Kardio Line

Ars Audio, spol. s r.o.

ASYS IJD, spol. s r.o.

¹ In general, faculty hospitals in the Czech Republic are considered as R&D institutions; however, they are still hospitals in principle.

R&D institutions and universities

Institute of post-gradual education in the health sector (IPVZ)

Institute of clinical and experimental medicine (IKEM)

Institute of experimental medicine by the Academy of Sciences of the Czech Republic
First, Second and Third Faculty of Medicine of the Charles University in Prague

Clusters²

MedChemBio

Nanomedic

CzechBio – association of Czech biotechnological companies

The Czech Nanotechnology Cluster

Other relevant groups

Ministry of Health of the Czech Republic

Všeobecná zdravotní pojišťovna ČR – VZP (General health insurance company of the Czech Republic)

Regional government of the Central Bohemia Region

PP10: Budapest University, Biomedical Engineering Knowledge Centre, Hungary

Analysis of key players to innovation transfer in Hungary

Our investigation of key players was made in several area:

- Universities
- Clinics
- Innovation/Technology Transfer Offices
- Enterprises

Clinics and universities

There are 40 inpatient care institute (hospitals and clinics) in our region. The greatest Hungarian university, 9 national institutes, 17 larger and 13 smaller hospitals care the third of the Hungarian population regularly, but clinics of the university and the national institutes are responsible caring greater population.

I case of handling innovation there is an extreme situation: we have 5-6 institutes with excellent practice of innovation, but the rest is in the other side. Some from the first group:

- In Semmelweis University (SE) there is a dedicated unit called Semmelweis Innovations, which is responsible to search, support innovations in medical field. It coordinates the Hungarian SMCs in order to make common applications to several program calls in Europe.
- Most of the national institutes keep close to international scientific forums and events. In result of it firms all over the world taking part in those forums and events as well

² The listed clusters are not situated within the chosen region. Since the medical clusters are not that plentiful in the Czech Republic, CVVI decided to address them notwithstanding their location.

can joint to innovations come from the institutional scientific research. E.g. National Institute of Neurosurgery has the following fields of research:

- In neurovascular therapy: using instruments leaded into the blood-vessel in cerebrum
- Minimal invasive therapy: correction the degenerative backbone diseases using minimal invasive techniques
- Neuro-pacemaker therapy: therapy for chronic pain using implanted or outer stimulators

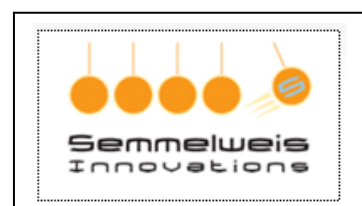
In “Gottsegen György” National Institute for Cardiology:

- Developing new instruments and its controlling software corresponding the care: measuring and transmitting vital parameters, handling emergency situation
 - Visualisation of information: displays using in operating rooms controlled by head and hand moving or voice,
 - displaying the patient’s vital parameters measured during operation in chronological order
 - Identification: trailing devices and persons using RF ID technology
- Bethesda Children Hospital:
 - Hospital management: VoIP communication in the hospital, video-conferencing between the two departments settled in different geographical place
 - Hospital-wide Wi-Fi service supporting patient administration inside the bed using mobile devices
 - On-line services: special internet services solve connection between children patients and their parents;
 - We have to mention some hospitals which have innovation practice too: Semmelweis University Heart Center, Uzsoki Hospital, Szt. Imre Hospital, Szt. István and Szt. László Hospital.

Innovation transfer offices

Semmelweis Innovations

(An innovation transfer office)



<http://semmelweisinnovations.com>

Semmelweis Innovations is the coordinator of those projects and enterprises which by being tied to Semmelweis University facilitate the innovation processes. Semmelweis Innovations is a group of ventures and projects which - in connection with Semmelweis University - wishes to facilitate innovation processes.

The organization actively searches for promising research results and helps in gaining intellectual property protection, in utilizing inventions, in maintaining industry relationships and in forming spin-offs. Semmelweis Innovations also operates the Technology Transfer Office (TTO) and gives professional support to the Semmelweis International BioEntrepreneurship Program and to the Trimaran Business Shaping Program.

The base concept for operations in the organization is modularity that fits the actual number of projects. While an average TTO operates with 7,5 full-time equivalent (FTE) workforce (ASTP Survey, 2006), Semmelweis Innovations is a system made of part-time staff and outside consultants besides few administrative workers. The technology managers are research personnel and PhD students who work part-time to complete TTO tasks, to maintain relationships and provide technology analysis. Their numbers can be flexibly changed (1FTE / 4 active projects) and their participation means that the TTO is present in every research department. The educational activities are usually conducted by external professionals, but the know-how is the intellectual property of the TTO. This assures the quality of the syllabus, but assures that it can be used at several places parallel. The business development department is operated as a company with two employees, which offers its service to external clients.

This structure assures flexibility that fits the project number, therefore making the cost manageable for every university. The business development company and the university usually doesn't get shares in spin-offs, therefore helping the flexibility and competitiveness. The spin-off receives the incubation service at a reduced cost (usually with grants involved) and negotiates a unique contract about future revenue sharing with the university.

The Semmelweis Innovations surveyed 200 innovative projects from January 2008 to December 2010, out of which 150 received one or more services. The projects that used the services and were able to grow, supported 3,6FTE employees after the business development. Semmelweis Innovations also participated in training 140 students in PhD courses, interns or other short courses in the last three years. 90% of the alumni managed to get a position at the desired innovation management field and 47% received higher salaries after the training. 23% of them also launched their own businesses while only 1% of the students of the same year attending different courses did the same. The organization also launched the first semester of the Semmelweis International BioEntrepreneurship Program, in which 18 students are participating.

The laboratories of the university will be entered into a database including their most important tasks, equipment, applied technologies and free services they have to offer. In this university database industrial partners can search for service providers and services free of charge. TTO assures quality work and payment for both parties.

Basic types of industrial-university relationships:

- Collaboration research: industrial partner finances a University research program or a specified task by itself or as part of a grant consortium, which will be carried out by the University and industrial partner together, using well defined division of labor (basic- and applied research).
- Payed research: industrial partner finances a specified task which will be carried out by University (applied research).

- Sponsored research: industrial partner donates funds for a University research program where outcome cannot be predefined (basic research).

Semmelweis Innovations Cluster



The Semmelweis Innovations Cluster is a cooperation of companies and organization in order to facilitate the transfer of research projects into the industry. The Cluster goal is to help research projects stemming from either academic or professional background through the complete innovation phase so they benefit the industry.

The focus of the Cluster is mainly in biotechnology, although other areas where innovation is a key issue are also supported. The currently Cluster consist of 20 organizations coming mainly from two fields: some are biotech research companies while others offer services covering various business development tasks.

The areas of the cooperation cover the following:

- Research and development projects involving a number of companies: the Cluster helps in generating projects, in finding partners and in harnessing results
- Business development: members of the Cluster share experience about their ventures and offer some professional services like IP management, coaching, incubation etc.
- Representation of the companies and professional lobby: joining voices of the members of the Cluster helps in achieving common goals
- Technology transfer: the Cluster maintains a technology portfolio which includes individual technologies of the members that can reach potential customers

The Cluster organizes many events throughout the year which involves its members and groups of other organizations or groups of professionals. These events range from investor events to events providing information about grant processes or events discussing a certain professional field (e.g. bioinformatics).

Mobilitás és Multimédia Klaszter (Mobility and multimedia cluster)

<http://www.mmklaszter.com/>



Introduction, objectives

The Mobility and Multimedia Cluster (MMCluster) was founded in 2007 to unite the research and development competencies of Hungarian mobile and multimedia technology actors and – based on these competences – to support the (global) market introduction of Hungarian inventions. A high priority objective of MMCluster is to inspire mobile technology and new media innovation and to support through innovation management, business planning and resource allocation the national and international market introduction and utilization of world-class developments of cluster members. As of today MMCluster has become one of the largest cooperation in Hungary, having a total of 69 members – among them large

telecommunication and information technology companies, small- and medium-sized enterprises focused on info-communication innovation and universities maintaining research centres. The MMCluster is an open organization; new members can join through a multi-step process which reveals to innovation potential of the to-be member.

MMCluster is consciously building its relationship with such clusters, for which info-communication technologies are becoming ever more important in increasing their competitiveness. As a result, MMCluster has established strategic cooperation with decisive clusters in the healthcare, vehicle and logistics sectors.

Main focus areas: mobile technology applications, multimedia content provisioning, applications related to intelligent and safe traffic, ICT solutions supporting daily activities and health, green IT solutions.

Cluster projects/products under implementation/preparation

MMCluster has revealed over 250 project ideas and initiated 40 projects since its foundation. It has started a total of 14 international and domestic research and development projects and secured funding of 12 million Euros for these. In the prototype competition of MM Cluster, 26 prototypes of start-up companies and academic researchers have been introduced in front of executives of multinational companies in Hungary and agreements have been signed between parties for 4 prototypes to help them overcome market entry barriers. MMCluster has so far created work for over 100 professionals.

Project topics include:

- · Development of a sensor solution embedded in jewel that measures vital signs;
- · Development of a contact-free payment solution;
- · 'Living History' or decreasing the digital divide for the elderly;
- · Development of a streaming-like mobile-multimedia service;
- · System enabling the remote monitoring of secure living for elderly;
- · Solution assisting the shopping activity of elderly;
- · Next generation cloud-computing platform;
- · Context based intelligent mobile applications;
- · Modeling media consumption habits;
- · Developing 3D media interfaces and content provisioning solutions.

Major companies in the cluster

- Magyar Telekom Plc., Nav N Go Ltd., AITIA International Inc., Carnation Inc., Innomed
- Medical Co., Gravity R&D Ltd., Montana Inc., HomeSys Media Plc., iPONT International Ltd.

Cluster management organization:

Mobility and Multimedia Coordination Office Nonprofit Ltd.

Website: www.mmklaszter.com

E-mail: info@mmklaszter.com

Magyar Innovációs Szövetség

(Hungarian Association for Innovation)

<http://www.innovacio.hu>



The Hungarian Association for Innovation as a professional and employer's business federation focuses its activities on the economy stimulating role of innovation. It was established by 30 member institutes in 1990. The Association intends to promote the creation, spread, transfer, adoption and the practical utilization of intellectual products so that the performance and the income generating potential of the companies and the Hungarian economy should be increased, by making use of innovation the modernization and the development of economy as a result of it should be accelerated.

The objective of the Hungarian Association for Innovation is that in the course of research, development and design the ambition of permanent renewal should be a genuine resource for the Hungarian economy. In the interest of it the Association contributes to

- creating representation for the member companies' interest that is effective, both from a professional and an economic point of view,
- increasing the number and value of intellectual products created and utilized in Hungary,
- having intellectual products, primarily the results of domestic innovation realized as products to a greater extent,
- helping technology transfer to contribute to the improvement of economic results; using a financing system as an incentive for creating innovative results,
- having those who create and utilize the results of innovation protected and supported by legal regulations,
- allowing outstanding innovative achievements to have wide-ranging recognition.

Nemzeti Innovációs Hivatal

(National Innovation Office)

<http://www.nih.gov.hu>



The National Innovation Office (NIH) is the research, development and innovation organization of the Hungarian Government. It provides professional support for private and government initiatives aiming to exploit and promote the market access of national R&D results. To this end it has a team of analysts and information management experts. NIH supports national and international cooperation, and incents the formation of innovation networks. The National Innovation Office represents Hungary at the EU and at international organisations in issues relating to research and innovation.

NIH plays a key role in elaborating and implementing Hungary's science-, technology- and innovation policies. The predecessor of NIH (National Office for Research and Technology – NKTH) was founded in 2004. The Office is a public body with full powers and independent budget, it is supervised by the Ministry for National Economy.

NKTH provides support for the creation, dissemination and exploitation of new scientific results and technologies, it also promotes the harmonic development of Hungarian national

innovation system and fosters Hungarian participation and better representation thereof in international networks of science, technology and innovation. To provide financing for the above activities, the government created the Research and Technology Innovation Fund which is managed by NIH. Apart from small enterprises, all companies must pay at least 0.25% of their turnover into the Fund. The central budget transfers an equivalent contribution into the Fund. The aim and task of NIH is to pump that public funding back into Hungarian economy by supporting research, development and innovation (R&D&I) activities primarily through its system of calls for proposals.

Science, Technology and Innovation (STI) strategy (2007-2013) and Implementation Plan of the Hungarian Government

The government adopted its mid-term STI-strategy for the period between 2007-2013 on 28 March 2007, which was incorporated in Government Resolution 1023/2007. (IV. 5.)

Strategic Objectives

The general objective of the strategy is to make Hungary's economy driven by knowledge and innovation on the mid-term, and to ensure that Hungarian companies display competitive products and services on the international market.

Mid-term objectives:

- To expand research and development activities of enterprises.
- To create internationally renowned R&D and innovation centres and research universities.
- To increase the research, development and innovation (R&D&I) capacity of regions.
- To create a market of knowledge based on competition and the recognition of performance through the globalization and industrialization of generating and disseminating new knowledge.
- To carry out giant scientific investments complying with policy priorities, primarily in regional centres and development clusters, and also to decrease regional discrepancies (improve regional cohesion).
- To increase the annual R&D spending dynamically, primarily as a result of an increase in enterprise spending.

Principles of the Strategy

Principles of implementing strategic objectives

- Concentrating material and intellectual resources, and optimizing application.
- Improved social and economic exploitation of R&D results.
- Strengthening regional innovation.

Strategic Priorities

The following priorities are set forth by the strategy:

- Promoting the culture of exploitation and appreciation of scientific research results.
- Setting up a quality-, performance- and exploitation-driven, efficient national innovation system.
- Developing creative, innovative and appreciated workforce, complying with the demands of knowledge-based economy and society.
- Creating an economic and legal background that stimulates the generation and exploitation of knowledge.
- Promoting Hungarian enterprises, products and services which are competitive on the global market.

Indicators

The strategy sets forth indicators with target values and detailed requirements concerning institutions carrying out and coordinating research activities on the national and regional level, human resources, social environment, entrepreneurial innovation exploiting results, international cooperation as well as the financial and legal background.

Background of the Strategy

The STI strategy was compiled in accordance with the objectives of the National Concept of Development Policy (OFK), the National Action Plan (NAP) and the "New Hungary" National Development Plan (UMFT), it is based on a situation assessment.

Implementation Plan of the Strategy

Operative objectives, detailed tasks and the phases of strategy implementation are included in the implementation plan of the STI strategy. The document, containing almost one hundred tasks, sets forth specific implementation programmes, the funds and phases thereof, the changes in the government's management structure, amendments to the legal framework of technology and innovation as well as the importance and role of STI policy in government activities.

Magyar Medikai Gyártók és Szolgáltatók Klaszter (Cluster of Hungarian Medical Service Providers and Manufacturers)

<http://www.mediklaszter.eu>



In 1994 small and medium enterprises developing, manufacturing and distributing hospital and medical devices and providing services established Hungarian Association of Medical Manufacturers and Service Providers (Magyar Medikai Gyártók és Szolgáltatók Egyesülete) (currently having 60 members) that has been enhancing the cooperation, communication and lobby force of the companies concerned. MediCluster was created in 2006 by those members of the Association that had been cooperating for several years. MediCluster is a network of business companies, institutes that develop, manufacture, distribute Hungarian medical devices, products and provide services on a profit-oriented or non-profit basis, or perform activities and/or provide professional-scientific support related to the above. Cluster is the business cooperation of equal, cooperating parties trusting each other. Organisations in MediCluster (29 members at present) are leading players of Hungarian medical technology industry. Business activities of the companies include the development, production, distribution and support of medical equipments that help to provide the society with high quality health services available for everyone. In 2007 annual net income of MediCluster was 11,5 billion HUF.

On July 21, 2008, OMEGA INVEST Klaszter Menedzsment Kft., a management organisation commissioned by MediCluster members submitted a successful application for the title 'Accredited Innovation Clusters'. As a result, Hungarian Medical Cluster received the title 'Accredited Innovation Cluster of New Hungary Development Plan, Pole Programme' on September 10, 2008.

In the next 3 years, 3 innovative development projects will be performed by the Cluster (Development of Export-Promoting Incubator House, Laser Development Project and Project for the Development of Hospital Services).

Total cost of these 3 projects will be approximately 5 billion HUF (including a requested support of approx. 2 billion HUF).

Informatikai Vállalkozások Szövetsége (Hungarian Association of Information Technology Companies) <http://www.ivsz.hu/>



INFORMATIKAI VÁLLALKOZÁSOK SZÖVETSÉGE

IVSZ: an NGO organization is a strong and effective lobbying force as well as an intellectual think tank of the Hungarian IT and Telecom companies

IVSZ has been in operation for more than 18 years, we have more than 300 members. The range is very wide: besides all major multinational and telco companies one can find the largest Hungarian ICT enterprises as well as local SMEs.

The main aim of IVSZ is to achieve such an internationally integrated innovative Hungarian infocommunications industry which can be highly competitive on the global market as well as able to be the priority sector of Hungarian economy.

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IVSZ is a catalyst carrier of Hungarian IT industry, by its high professional as well as ethical standards contributes to strengthen a modern and competitive e-economy and society. Its mission statement is to positively influence the development of the Hungarian IT society by identifying and developing breakout-points and doing a massive lobby activity.

IVSZ besides being the consulting partner of local government and public administration has a widespread international connection which enables IVSZ to give an effective support and representation of interest of its members both locally and internationally within the Union: IVSZ is also represented in the association of the biggest IT organisation of the EU (DIGITALEUROPE).

Main activities:

- strong and dedicated industry lobby force
- intellectual IT think tank
- interest representation of IT industry
- industry development

- market expansion-business development
- market surveys
- R&D innovation
- SMB support
- firm PR and marketing activity
- wide range of services to members

BME Technológia és Tudástranszfer Iroda

(Knowledge and Technology Transfer Office of Budapest University of Technology, <http://www.tti.bme.hu/>)



The office was founded on 1st January 201 from the sources of the SROP – Social Renewal Operative Program of EU.

The Social Renewal Operational Programme contributes to the achievement of the expansion of employment and the promotion of permanent growth (the overall objectives of the NHDP) primarily through the development of human resources and by measures aimed at the supply side of the labour market. The possibilities inherent in available labour supply cannot be exploited unless job-seeking.

4th priority axes of the OP: Developing the content and organisation of higher education to create a knowledge- based economy

- Improving the quality of tertiary education in accordance with lifelong learning
- Expansion of the capacities of R&D&I&E of tertiary education, thus supporting the enhancement of institutional cooperation with businesses.

At each Hungarian universities – from the sources of SROP – a knowledge transfer office has been established.

PP11: University of Debrecen, Hungary

I. Preliminary, objectives and methodology of the analysis

The University of Debrecen Knowledge and Technology Transfer Office initiated a market research project to examine the innovation activity of the Region Észak-Alföld, as well as the cooperation between clinics, hospitals, SME's of the health care sector and other actors of healthcare business sector. The aim was to survey the innovation activity of the region and the opportunities of utilizing these innovations.

During the project, we examined four groups that are active in the healthcare sector:

- clinical and hospital decision-makers (20 people)
- small and medium enterprises in the healthcare sector (SMEs) (20 people)
- independent research institutes (3 people)
- clusters (2 people)

In the sample, the participants of the clinical and business sector had similar weights, whereas we interviewed two clusters and three research institutes. During our research project, we wanted to explore the cooperation between these actors in relation to development activities, as well as the problems they faced during cooperation. As a matter of course, we were also curious about what respondents consider to be the solutions for the difficulties they encountered during their research and development activities. During our research, we also examined the motivations of these actors to perform research and development activities and their marketing, whereas we also surveyed the advantages and disadvantages they attribute to such activities.

II. Research methodology:

- telephone interviews in the region
- sample number: 45 people
- field work of the research project: March 2011

III. Research results:

1. Research and development activity in the region

During the survey about innovation transfer, we came to a conclusion that respondents are basically interested in research and development activities, but they still run into several difficulties that entirely or partially upset the establishment of such cooperation.

It is especially important to clarify the main areas which they focus on during their innovation activities and to get to know how typical it is that these innovations are utilized. Of innovation activities, special emphasis was laid on **trying out and testing medical instruments (44%)**. In addition, providing innovative services and the development of new procedures and examination processes were also frequently mentioned. Mentions focused on these three areas in the case of all four groups. **More than 60% of those who perform innovation activities also utilize their own innovations.** The developed diagnostic methods had the highest ratio of marketing, 81% of these were marketed, whereas the new therapeutic equipment were utilized to the lowest proportion, only 17% of these were used. The difference between the examined groups is shown by the fact that **the ratio of clinical decision-makers who said that they would market their innovations was 56% and this proportion was 63% among SMEs.** Clusters did not market innovations at all, whereas research institutes utilized half of their innovations.

2. Cooperation, problems during cooperation and their solutions

During the analysis of cooperation, we strived to dig deep and touch upon the exploration of motives, obstacles and solutions in addition to partners themselves. Altogether, it can be stated that the aims of cooperation between hospitals and the SME's of the health care sector are the **utilization of professional knowledge (64%), common problem solution (60%) and the integration of knowledge and technologies (51%)**. It is rather meaningful that when we asked respondents to specify one factor that motivates them the most, the most frequently mentioned aspect was the utilization of financial resources.

70% of hospital and clinical decision-makers said that they were in cooperation with external organizations, by which they meant the SME's of the health care sector and

research institutes. In most cases, cooperation was established with pharmaceutical producers (64%), therapeutic equipment manufacturers (50%) and university research companies (50%).

Based on the obtained results, it was shown that the purpose of cooperation is mainly to try out medications and new therapeutic equipment. Most cooperation in the clinical sector have been active for 11-20 years. Furthermore, the cooperation tends to have been initiated by mainly the other party or the two parties together.

The examinations also covered the **cooperation of the SME's of the health care sector. 65% of them are in cooperation with clinics, research institutes or other relevant organizations.** Small and medium enterprises are in cooperation mainly with clinics/hospitals (62%). Most of the cooperation are not older than five years.

The initiator role also changed in the case of enterprises, since the ratios of initiation by enterprises and the two parties together are both significant.

The activity of research institutes and clusters pointed towards cooperation. Clusters entered into professional cooperation mainly with hospitals and university-owned companies/spin-off companies, whereas research institutes started cooperation with diagnostic companies, hospitals and other research institutes.

The obstacles and problems faced during cooperation are explored below, whereas we also try to provide a view on how respondents think these problems can be solved. During the **cooperation** of clinical and hospital decision-makers **with the business sector**, the most frequently mentioned problem was the lack of financial resources (77%). In addition, the insufficient number of project/tender application opportunities (59%) and the fact that there is not enough time and energy to explore existing opportunities (55%) were also "popular". As for **cooperation in the clinical sector**, the most expressed obstacle was also the lack of financial resources (65%), but the fact that the range of potential cooperative partners is unknown (65%) also has a significant role in hindering cooperation.

The solution of problems that arose during **cooperation with the business sector** was considered to be the increase of the number of project/tender application opportunities and employees. In addition, there were several proposals in relation to the establishment of a specific forum or an intermediate organization that could provide help in informing parties and exploring opportunities. Furthermore, they also considered it to be important to motivate the market sector. Creation of financial resources, organization of conferences, workshops and improvement of communication were all possible solutions that were brought up in relation to the **cooperation with the clinical sector**. Furthermore, other opinions pointed out that a different approach would be needed, openness should be more stressed and employees should be motivated financially.

3. Innovation activity and the appraisal of its utilization

This section aims to determine how important the research and development activity and the activity of utilizing R&D results are for respondents and we also explore the factors that motivate respondents.

Basically respondents were characterized by openness and positive attitude towards the issue. Nevertheless, the results we obtained showed that one fifth of them do not pay attention to motivating employees in order to improve their positive approach to innovation activities. Employees who take part in research projects are mainly motivated by **further education programs, scholarships (31%) and bonuses (27%)**. Furthermore, innovation-related competitions and prizes were also mentioned in a smaller proportion. Several respondents mentioned non-financial incentives such as participation in congresses and conferences, individually tailored sectors of activity or means of providing sense of success.

When analyzing the breakdown by examined groups, there is no significant difference in comparison with the average results.

Clinical and hospital decision-makers pointed out **quality improvement (65%)**, the establishment of own internal activities (55%) and the achievement and publication of

new scientific findings (55%) as the purpose of research and development and the activity referring to utilize its results. In the case of the business sector, the main objectives were **quality improvement (70%)** and the establishment of resources for new innovations (65%). All three representatives of research institutes considered the achievement and publication of new scientific findings to be the primary motivation factor in innovation activities.

Hospital and clinical decision-makers used their own innovations mainly for internal purposes, whereas SMEs also laid emphasis on marketing in addition to internal use. Research institutes also made use of both alternatives, whereas one cluster used innovation solely for internal purposes and the other one used it for marketing aims only.

4. Future conceptions

Three quarters of respondents plan to carry out innovation activities in the future, 60% of whom also plan to utilize these innovations. 90% of hospital decision-makers plan future R&D activities and nearly half of them wish to market these. As for small and medium enterprises, the ratio of utilizing innovations is similar, but the remaining proportion of respondents does not plan to carry out such activities in the future. Each independent research institute plans to carry out innovation transfer-related activities, whereas clusters have conceptions only about the development of innovations. Those taking part in the research think that the development of their future innovation activities would be positively influenced by their participation in related further education programs and workshops.

Our research results showed that healthcare actors are open and they show interest in innovative activities and the utilization of these activities, but there are still numerous obstacles in the way of implementation. The most important thing would be to inform the affected parties in the proper way and to hire employees or operate an intermediate organizations which help the sector's players in making contact and finding unexploited opportunities. It is important to emphasize that researchers do not necessarily access information related to cooperation and the utilization of research results; therefore, providing such information would definitely help them in their work. In addition, the increase of market sector activity would also be of great help for such investments. Above all, the main aspects are openness, improvement of the general approach and the establishment of financial resources.

PP12: Medical Valley EMN e.V., Germany

The Medical Valley is home to high class research institutions, world leading medical technology companies, innovative StartUps and Spin-Offs and an excellent clinical infrastructure. This combination together with thematic networks, the involvement of health care insurance companies and health care decision making groups on project basis makes the Medical Valley EMN to one of the Worlds' leading medical technology clusters/areas.

Companies:

The Medical Valley EMN is an industry driven cluster with Siemens AG (Sector Healthcare) as global player standing in the centre. In total approx. 180 dedicated medical technology **companies** are located in the Medical Valley EMN. Among those are global players like the already mentioned Siemens AG, but in majority research driven SMEs that are market leaders in their fields, as well as OEMs, StartUps and Spin-Offs from different fields within

medical technology. In following medical product categories Medical Valley EMN has a leading position:

- Imaging diagnostics (CT, MRT, interventional imaging)
- Therapy Systems (refractive laser surgery, lithotripsy, endoscopy)
- Tele Care (Sensors, medical information systems, homecare, tele-rehab, monitoring)
- High tech implants (pacemaker, revision implants)

In the following just a few key companies in the Medical Valley should be mentioned:

- Siemens AG (Sector Healthcare)
- Biotronik
- Heitec
- Corscience GmbH & Co. KG
- Sasse Electronics
- Vierling
- ASTRUM IT
- Infoteam
- sepp.med gmbh
- softgate GmbH
- Wavelight
- Human Optics
- A.R.C. Laser
- Bio-Gate
- Peter Brehm GmbH
- Tutogen

Research/Science:

A total number of 20 high class **research institutions** are also located in the Medical Valley EMN, both universities and extra-faculty research institutions.

The Friedrich-Alexander University Erlangen-Nuremberg (FAU) performs high class research and teaching on technical and medical technology topics. The relevant faculties are the technical faculty and the medical faculty. A current list of chairs follows below in order to show key players in R&D.

Technical Faculty of FAU

Department of Electrical, Electronic and Communication Engineering

Department of Chemical and Bioengineering

Department of Materials Science and Engineering

Department of Mechanical Engineering

Department of Computer Science

Medical Faculty of FAU

Department	Chair	Head of Chair
Department of Medical Informatics, Biometry and Epidemiology	Chair of Biometry and Epidemiology	Prof. Dr. Gefeller
	Chair of Medical Informatics	Prof. Dr. Prokosch
Department of Anatomy	Chair of Anatomy I	Prof. Dr. Neuhuber
	Chair of Anatomy II	Prof. Dr. Paulsen
Department of Physiology and	Chair of Physiology	Prof. Dr. Alzheimer

Pathophysiology		
Department of Cellular and Molecular Physiology	Chair of Physiology	Prof. Dr. Korbmacher
Department of Biochemistry	Chair of Biochemistry I	Prof. Dr. Becker
	Chair of Biochemistry II	Prof. Dr. Wegner
Department of the History and Ethics of Medicine	Chair of the History of Medicine	Prof. Dr. Leven
Department of Forensic Medicine	Chair of Forensic Medicine	Prof. Dr. Betz
Department of Experimental and Clinical Pharmacology and Toxicology	Chair of Toxicology and Pharmacology	Prof. Dr. Brune
	Chair of Pharmacology and Toxicology	Prof. Dr. Ludwig
	Chair of Clinical Pharmacology and Clinical Toxicology	Prof. Dr. Fromm
Occupational Social and Environmental Medicine and Policlinic	Chair of Occupational and Social Medicine	Prof. Dr. Drexler
Institute for Biomedicine of Aging	Chair of Internal Medicine (Geriatrics)	Prof. Dr. Sieber
Nikolaus-Fiebiger-Center of Molecular Medicine (NFZ)	Chair of Molecular Medicine I (Connective Tissue Research)	Prof. Dr. von der Mark
	Chair of Molecular Medicine II (Tumor Research)	Prof. Dr. Behrens
Orthopaedic Department at the Waldkrankenhaus St. Marien Erlangen, Orthopaedic Clinic and Policlinic	Chair of Orthopaedic Medicine and Orthopaedic Surgery	Prof. Dr. Forst
	Division of Orthopaedic Rheumatology	Prof. Dr. Swoboda
Chair directly linked to the Faculty of Medicine	Chair of Medical Physics	Prof. Dr. Kalender

The FAU owned Knowledge and Technology Transfer Unit (wtt) is responsible for supporting innovation and accompanying spin-offs from the FAU and the University Hospital Erlangen.

The **University Bayreuth** has a strong advanced material faculty. It completes the competencies in advanced material science in the Medical Valley.

The **Georg-Simon-Ohm University of Applied Sciences** in Nuremberg researches on medical technology related topics, i.e. imaging. It also has installed a Center for Interdisciplinary Health Improvement (CIG).

The **University of Applied Sciences** Ansbach has installed medical technology studies for engineers.

Extra-faculty research institutions

In total around 20 extra faculty research institutions are located in Medical Valley EMN, including

- Max Planck Institute for the Science of Light
- The Fraunhofer Institute for Integrated Circuits IIS
- Fraunhofer Institute for Integrated Systems and Device Technology
- Bavarian Laser Centre (blz)

Efficient infrastructure for clinical trials and evaluation has been implemented. The Fraunhofer IIS owned **METEAN** and Siemens owned **Imaging Science Institute (ISI)** have

been implemented as public private partnerships and are located at the University Hospital Erlangen.

Clusters, Networks, etc.:

The cluster management for the medical technology cluster Medical Valley EMN lies under the responsibility of the Medical Valley EMN e.V. The Medical Valley EMN e.V. has installed close cooperation with networks, business development units, investors and health care insurance companies like

- **Forum MedTech Pharma e.V.** – over-regional medical technology network
- **Bavarian Medical Technology Cluster** – Bavaria wide medical technology cluster
- **IZMP** – incubator for startups and spin-offs from the medical technology field
- **Netzwerk Nordbayern** – runs a successful business plan competition and
- **medTECH Capital Fonds** – Regional funds investing in medical technology companies
- **SBK, TK, DAK, AOK** – contact with regional offices of health care insurance companies