BEST PRACTICE REPORT

Innovation transfer in the medical sector from clinics to companies (InTraMed C2C)

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Summary	The best practice report shows all improved products and processes and raises awareness amongst the target group.

As shown and described in detail within the *Pilot Actions* (4.2) and the *Implementation* (4.3) the overall implementation of the project results does not result in one overall solution and guideline for other regions or countries. Reasons are the heterogeneous situations in the participating countries and regions regarding the networks (SMEs, hospitals etc.), the health care systems within the political infrastructure, the financial resources for realising innovations and other boundary conditions like handling IPR in hospitals (innovations are based on ideas and inventions in hospitals).

The following best practice reports show some very promising examples for realising the basic project idea, i. e. to transfer innovations from hospitals to the industry, resp. SMEs. These examples might be transferred to other regions or countries by modifying or adapting some features to the situation in the target region or target country. But also the other examples of implementing the project idea, shown and described for example in the *Deployment strategy for Central Europe* (4.3.6), could be used as best practices for others. The selection of the most suitable example depends highly on the situation of the target region or country as described above.

REPORT

GOOD PRACTICES

within

„Innovation transfer in the medical sector from clinics to companies (InTraMed-C2C)" Project

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MTTCTP Ltd.

INTRODUCTION

The InTraMed-C2C Project was the first in the history of the John Paul II Hospital in Krakow endevour entirely devoted to the strengthening of relationships between representatives of hospitals/clinics and small&medium enterprises. This is supposed to be translated into the development of innovativeness in both sectors, as well as the improvement of the quality and effectiveness of activities in the field of commercialization and medical technology transfer. This in turn will help develop regular ties between science and business in the area of life science in Malopolska.

The evaluation of the implemented project activities shows that the goals set up 4 years ago have been reached, and in some areas even significantly extended.

The present report contains the most important achievements of the Project, which may serve as an example to follow by other regions in Poland and in the EU. Of interest are unique processes and systemic solutions which provide a basis for increasing the number and quality of innovation projects realized by Partners of the John Paul II Hospital in Krakow, ending in practical implementation that provides measurable benefits to all the engaged parties.

What is of utmost importance, the Project originated an innovation ecosystem in the medical sector in Malopolska, after establishing and developing the cooperation between physicians, SMEs and business-related institutions, cooperation platforms, including industrial clusters.

Below there are the most important activities that provided positive outcomes i.e. project goal achievement exceeding the expectations.

1 THE CHARACTER AND ROLE OF THE LOCAL STEERING GROUP

The Local Steering Group (LSG) was established with an aim to develop innovativeness, improve effectiveness of commercialization and technology transfer and to develop ties between the medical sector (hospitals, clinics, medical universities) and business (mainly SMEs) in the region of Malopolska.

It is especially interesting that nine people who are **manageres and experts** in the field of knowledge transfer, commercialization and innovative project funding accepted an invitation to work in the LSG.

The LSG consisted of representatives of the management of the John Paul II Hospital in Krakow and innovative life science enterprises, representatives of science- and business-

related institutions (including the Center for Medical Technology Transfer, Cluster Life Science Krakow and Life Science Technology Park in Krakow) and investment funds (seed capital) investing in the medical and biotechnology sector.

The composition of the group assured not only efficient realization of project tasks but also provided a **potential for actual marketing of innovation implementation** in the medical sector in the entire cycle of commercialization. The presence of representatives of two technology transfer centers assured the availability of patent officers and business analysts who verified intellectual property and economic potential of inventions submitted to the Hospital. The representative of the Technology Park assured access to a modern laboratory. Director of the Cluster Life Science was responsible for contacting potential contractors (partners of the Cluster and cooperating institutions), and representatives of the investment fund MedFUND for availability of financial resources maximally 200 000 Euros for the best business ideas.

The structure and activity of the Group will be **maintained after Project termination**, which guarantees continuation of its positive effects. It is planned to include other partners in the LSG to increase its potential.

The LSG will continue to play a role of an **interdisciplinary think-tank** in the area of medicine and life science. Increased efficacy of commercialization processes and development of abilities to cooperate with institutions functioning on target markets will be a measure of the LSG effectiveness.

All the members of the LSG gave their consent to carry out the following activities:

a. Providing opinion and evaluating project concepts and projects implemenetd in the area of medicine and life sciences
b. Promoting innovators and assuring access to resources
c. Cooperation for preparation and implementation of projects aiming at promotion and development of innovativeness in the area of medicine
d. Cooperation for development of methods and tools, creation and implementation of projects promoting innovativeness as well as knowledge and technology transfer
e. Creating, developing and implementing standards and best practices in the area of communication, information and cooperation regarding commercialization of innovative projects
f. Promoting innovativeness and implementing in their own institutions activities defined within the InTraMed Project

It is also planned to coordinate the LSG activities with those of the Innovation Team of Cluster LifeScience Krakow and the Innovative Hospital Group, as described below.

2 THE ROLE OF CLUSTER LIFE SCIENCE KRAKOW IN MAINTAINING THE EFFECTS OF INTRAMEDC2C PROJECT

Cluster Life Science was a very important component increasing the effectiveness of activities undertaken within the Project and providing the opportunity for their dissemination. The decision to cooperate with the Cluster at the beginning of the Project was the right one as it revealed the potential of the medical sector in the development of the Malopolska Bio-Region represented by the Cluster.

A good practice in this area is undoubtedly the creation of the **Innovative Hospital Group** (in accordance with par. 2.10 of Cluster regulations) with the main task to initiate and implement interdisciplinary development projects aiming at putting into hospital practice innovative technologies, goods and services, processes and business models.

Cluster Life Science Krakow was established in 2006 as an initiative of regional companies and institutions united by a vision of developing innovativeness in the sector of biotechnology, pharmacy, medicine, food production and other areas of life sciences.

Cluster Life Science consists of over 70 institutions representing various areas of activity in the region:

- Companies from the sector of biotechnology, pharmacy, medicine, food and environment protection
- Universities – schools of higher education and other teaching institutions
- Research institutes
- **Hospitals and other healthcare institutions**
- Consulting companies and other business-related organizations
- Local government

Cluster activities include mainly promotion and support of innovativeness in the area of life sciences. Cluster offers a possibility of establishing contacts, facilitates access to knowledge and research teams. It supports entrepreneurship, and cooperation between enterprises and academia. Cluster LifeScience also promotes the Malopolska Bio-Region and individual activity of its members on the national and international level. In order to facilitate access to and exchange of information the Cluster organizes monthly “Cluster Club Meetings” and annual LifeScience Open Space conferences.

As a result of the InTraMed-C2C Project the medical sector has been included in the priorities of Cluster development showing its unlimited potential. As a consequence the Innovative Hospital Group was established in 2010. One of the Group Leaders is Director of the John Paul II Hospital in Krakow who has the competencies for direct cooperation with Cluster Board and representing the Group in content-related matters.

The general aim of the Innovative Hospital Group is to stimulate cooperation between science, healthcare and business, to promote entrepreneurship and innovativeness in the area of hospital care/health care, and to lobby for progress in medicine (on the Cluster forum and local government level).

Over almost 3 years of its presence the Innovative Hospital group, as a result of the InTraMed-C2C Project, had organized several dozen professional and club meetings addressing innovation in medicine, had been represented on several conferences, also on the international level, and actively participated in the implementation of other Cluster projects. One of them was "**Cluster LifeScience Krakow – capacity building cooperation within networks of bio-regions in Europe**". The project is implemented jointly with international partners: SKEMA Buisness School, France; GENOPOL, France; BioCon Valley, Germany; Biotechnology Cluster Aragoni (BIOARATEC), Spain; Latvian Biotechnology Association (LBA), Latvia; Midlothian Council, Scotland. The main assumption was to improve capacities of Cluster and its partners (including the John Paul II Hospital in Krakow) to undertake and implement international joint projects, addressing mainly novel technological and systemic solutions. The participation of Hospital Director and Chairman of the Center for Medical Technology Transfer facilitated establishing valuable contacts and learning many interesting solutions which may significantly increase functional innovativeness of hospitals in Malopolska.

3 THE ROLE OF THE MEDICAL TECHNOLOGY TRANSFER CENTER AND TECHNOLOGY PARK LTD.

The Medical Technology Transfer Center and Technology Park Ltd. (MTTCTP) was established in 2007 by the John Paul II Hospital in Krakow. Its mission is to commercialize inventions and research results obtained by research institutes and JBRs, support innovations and cooperate with industry, especially medical and pharmaceutical.

MTTCTP is also a response to the needs both of research institutions and industry in the area of initiation and coaching of cooperation between the two sectors. This concerns mainly those institutions which do not have their own centers of technology transfer dedicated to cooperation with business.

The participation of MTTCTP representatives in the implementation of the InTraMed-C2C Project (especially in the LSG activities and organization of innovation workshop) improved the quality of activities (mainly with respect to analysis of intellectual property and commercialization of inventions), and generated the effect of scale through supporting the InTraMed-C2C Project with individual projects for the medical sector.

The cooperation resulted in a **cycle of joint courses** for medical personnel regarding innovativeness, intellectual property management, cooperation with companies as well as providing private and public funds for interesting ideas.

Inspired by the InTraMed-C2C team, MTTCTP organized **two consultation points** for the employees of the John Paul II Hospital in Krakow regarding entrepreneurship, intellectual property, funding and commercialization. MTTCTP also offered consultations of patent officers and lawyers. This support was possible from public funds of the Polish government.

In cooperation with Hospital representatives (including the Managing Team of the InTraMed-C2C Project) we prepared **Guidelines on managing intellectual property** at John Paul II Hospital in Krakow and Information on IP protection and management. It is the first comprehensive regulation which may be implemented in the medical sector in Poland. The

Guidelines contain recommendations on intellectual goods, protection process, ways and procedures of commercialization, including spin-off companies. The implementation of the Guidelines will support putting into practice the principles of managing intellectual property from its submission, through verification to commercialization. The implementation of the Guidelines will serve as a basis for the implementation of similar procedures in other hospitals and R&D institutions.

The cooperation between the John Paul II Hospital in Kraków and the MTTCTP within the InTraMed-C2C Project resulted in the establishing of services provided by the Company to hospitals/clinics and enterprises in Malopolska:

- Promotion of intellectual potential of hospitals and innovative enterprises in the area of life sciences, and facilitating cooperation between the sector of medicine, science and industry;
- Coaching of commercialization of innovative solutions in the medical sector;
- Technological analysis in the medical sector;
- Consultations regarding management of intellectual property, including formulation of internal regulations on IP protection and use in hospitals;
- Support in procuring funds for innovative projects including EU funds, government grants and private capital ((seed/venture capital, business angels).

It is also of importance that close cooperation of the InTraMed-C2C Project Team with the Board of the MTTCTP resulted in dissemination of the Project. There was also improved access to intellectual capital and innovations due to cooperation with the **Innovation Team of Cluster LifeScience**. The John Paul II Hospital through the MTTCTP became the first medical partner of the group and since 2011 has participated in the following tasks:

- Searching, selecting and making available information on R&D activities and offers to cooperate,
- Cooperation with business, especially establishing contacts and active promotion of Hospital potential,
- Preparation and implementation of joint projects aiming at promotion and development of innovativeness and intersector cooperation,
- Development of methods and tools in the area of innovation modeling,
- Formulation, improvement and implementation of standards and best practices in the area of communication, information and cooperation regarding commercialization.

The participation of representatives of the John Paul II Hospital and MTTCTP resulted in the inclusion of medical innovations on the list of priority activities of the Team and facilitated the application for European funds aiming at the development of international cooperation in the medical sector (within the Regional Operational Programme for Malopolska 2007-2013 submitted in March 2013).

4 THE FORMULA AND CONTENT OF INNOVATION WORKSHOP

The innovation workshop was a significant step in the process of raising the awareness of the medical personnel and business representatives regarding the potential of cooperation. Until now the cooperation of hospitals and companies has focused on the implementation of ready made products offered by the enterprises. The Managing Team of the InTraMed-C2C Project decided to reverse the scheme and show that intersector cooperation in the phase of technological process and even product concept significantly increases the effectiveness of further activities.

The acceleration of economic growth in the country should be based on the creation of conditions that stimulate the development of knowledge and mechanisms of its transfer to industry. One of the key components increasing the competitiveness of the economy is its innovativeness defined as continuous launching of new, improved products (goods and services), novel processes and systemic changes (organizational, marketing). Of major importance is the cooperation between enterprises and research institutions which may result in new technologies and novel products. In Poland knowledge and technology transfer has always been associated with cooperation between research institutes and enterprises. The InTraMed-C2C Project showed that hospitals can also be solid partners for industry. Its role may not only be a product receiver, but it may also serve as an important link in the process of technology, production and testing.

The standard process of technology transfer should consist of several phases:

- Research including the building of a model and prototype (system) or verification of a given technology process,
- Identifying utilitarian and economic features of new products or novel technology processes,
- Assuring intellectual property (determined by legal and real situation of the invention),
- Market analysis,
- Selecting the best way of implementing innovations and finding a business partner,
- Establishing financial and legal standards for enterprises and partners, including hospitals (terms and conditions),
- Starting the production,
- Deriving benefit from process implementation.

Because of the lack of best practices, the above mentioned issues in the area of medical innovations were only a theory at the onset of the Project.

The innovation workshop changed the situation leading to establishing a specific **model of managing innovatiove ideas**:

- motivational programme was established within the InTraMed-C2C Project which positively affected the way of perceiving the cooperation between hospitals and enterprises among workshop attendants;
- basic principles of the process of innovation management in hospitals were formulated and served as a basis for establishing internal regulations of intellectual property management. This was possible due to the participation of a representative of the MTTCTP (technology broker);
- samples of confidentiality agreements were prepared and tested increasing the level of confidence of workshop participants.

The cycle of innovation workshop facilitated the formulation of **premises of hospital innovation model**, summarized below:

The model cycle of innovation commercialization should start with a submission of an invention (interesting solution for improvement) to an appropriate organizational unit (identified by a director; it was the MTTCTP in our Hospital). The MTTCTP prepared confidential invention disclosure forms in which the inventor described the invention and its use. The next stage includes verification of its market potential in order to find an enterprise that would be interested in cooperation or to establish a spin-off company serving as a bridge to the market. The steps undertaken should also show that a given solution will find a consumer and will be competitive compared with similar products on the market. Simultaneously with studying business possibilities of the innovation its capacity for legal protection should be verified. A decision to submit the innovation for protection is the first critical moment on the way to technology implementation and frequently determines further steps. A lack of protection does not correspond to termination of commercialization but it will certainly have an impact on its effectiveness and valuation of know-how. This stage also requires a business plan which will include detailed feasibility study of the innovation taking into account marketing and financial projections. The last stage of successful commercialization is to acquire income from the implemented product. In case of launching the innovation, profits should balance current costs and make up for investments, but first of all they should meet the expectations regarding the rate of return.

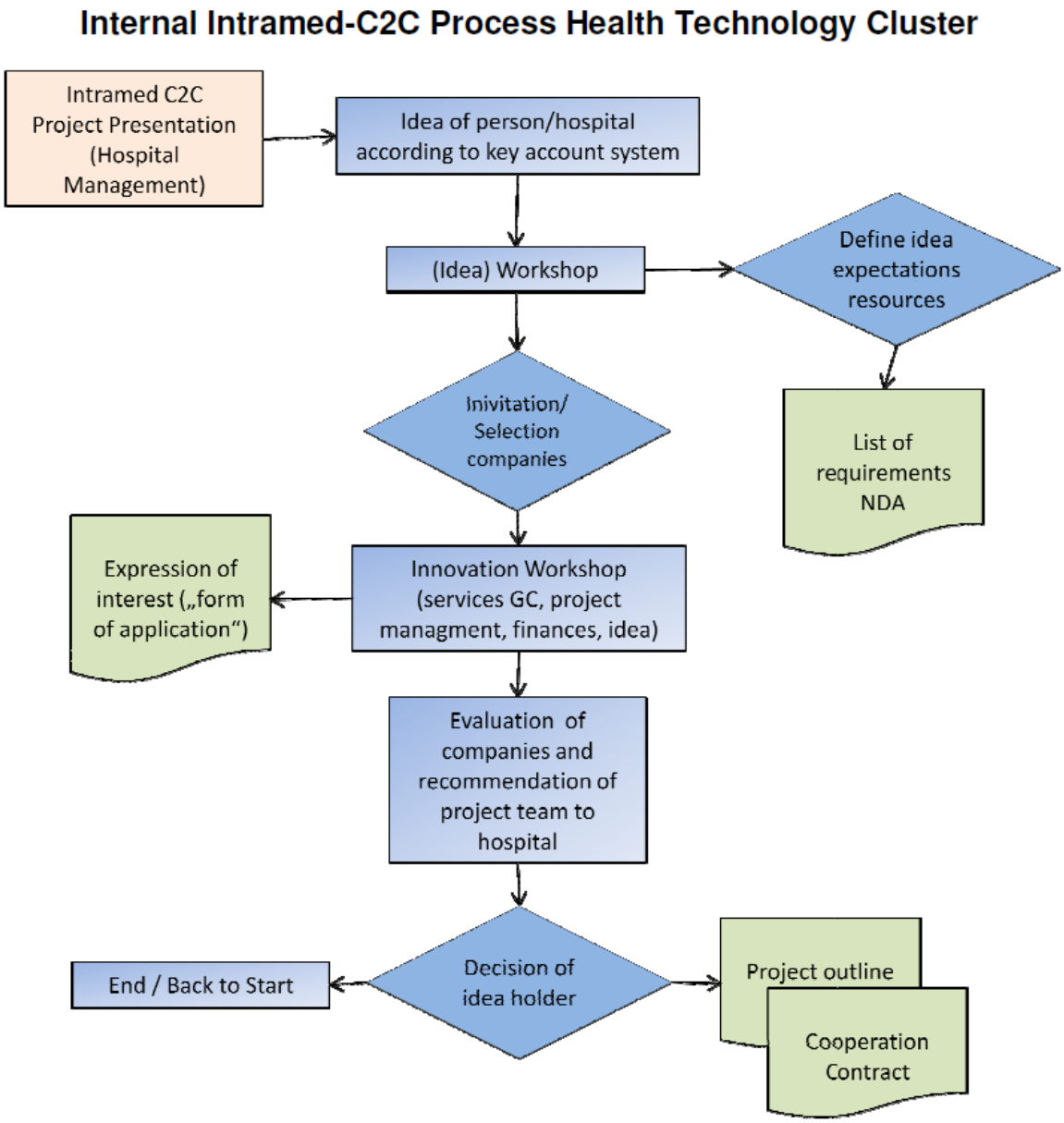
To understand the significance of innovation commercialization it is important to explain the role of intellectual capital known also as non-financial capital in the valuation of an organization. It represents a hidden link between its market value and accounting value. The valuation of the organization is directly related to the valuation of its innovativeness which may be generated in cooperation with the medical sector regarding the implementation of innovative products or processes. The understanding of these issues is also a basis for the cooperation between medical personnel/hospitals and investors (seed funds/venture capital) which locate their capital in innovative solutions.

Polish law does not precisely define intellectual property rights of hospital employees, therefore of major importance is hospital management support for innovativeness of the whole organizatation and its employees. The inspiring atmosphere is a prerequisite for success. A step forward may be the implementation of internal regulations regarding turnover

and launching of interesting ideas together with hospital offers (including sharing of property rights and income).

The implementation of the InTraMed-C2C Project resulted in the building of a model for supporting innovation at John Paul II Hospital in Krakow. The model may be successfully implemented in other healthcare institutions in Poland.

Austria (Clusterland Upper-Austria)



In Austria, the idea of an employee in general belongs to the employer, which is in this case the hospital. Furthermore, the implementation of an idea is not the daily work of a hospital and therefore it is not within the resources. These reasons require an official approval of the managing board of the hospital. Thus the process starts with a presentation of the Intramed-C2C approach and its benefits for the hospital. This presentation was done by the Cluster Manager of the Health Technology Cluster.

Once the managing board approved the Intramed-C2C process, hospital staff could be approached directly by the project managers of the Health Technology Cluster according to

the key account system, which divided hospital staff into three groups: physicians, nursing staff and technical staff.

Once an idea was identified, the holder of the idea and a project manager of the Health Technology Cluster further defined the idea within a list of requirements and determined the following steps. Expectations, goals and legal issues are discussed within this idea workshop. The NDA (Non-disclosure agreement) is an important part of this meeting.

The idea workshop is followed by an innovation workshop. Not only hospital staff but also selected companies are invited to this innovation workshop. During this workshop the holder of the idea did a presentation on the idea and companies were able to ask questions. The Health Technology Cluster was responsible for the organisation and administration of the workshop. Also, the services of the Health Technology Cluster and the procedure of Intramed-C2C were presented.

Each company was asked to fill out a form of application in order to express their interest in the project. Based on this form, the companies were evaluated using the following criteria: willingness to cooperate, expectations and goals, infrastructure and know-how in the field of interest and the willingness to invest. The decision which companies are part of the project consortium however is up to the hospital. As soon as the project partners are defined, a project outline and cooperation contract is drawn.

List of requirements

Product requirements

Title of project:	
Contract person:	
Current Situation: (~½ page)	*Available technology? Which tools or products are currently used? And why are these products inapplicable?* *(You may provide a picture)*
Requirements: (~ ¼ page)	*Requirements that need to be fulfilled and "nice-to-have"*
Product benefits:	*Additional advantages?*
Cost of product:	*How much are the customers willing to pay for the product?* *How much is the currently used product?*
Target group:	*Potential customer of the product?*

Project Outline

The project outline is used to evaluate the companies according to their compentences, interest and intention

Specification of project	
Project Titel:	Functional wagon
Project start:	
Duration of project:	
Estimated project budget	Labor cost: Investment cost: External Expertise: R&D Institutions:
Your input: (max. ½ page) - Concept of product – solution proposal? - You competences / special know-how? - Which role is applicable: Project partner, external expert, service provider or project coordinator?	
Describe the project benefit for your company? (max. ¼ page)	

Name, Legal Status and number of employees	
Name	
Legal Status	
Number of employees	

Identified R&D project/ideas of UD which were presented at the different pilot innovation workshops, regional workshops and follow up meetings:

Title of the innovation/R&D project	Name of the researcher/clinician
Eardrop preparation containing adenosine	Sándor Sipka István Sziklai
Generation of iPS cells from fibroblasts	Zoltán Simándi
Preparation of neuronal stem cells for pharmacological investigations	Zoltán Simándi
The pharmacological effect of 4-thio pyrimidines	János Aradi
Proteomics Service Laboratory	Éva Csősz
Imaging research possibilities in the Medical and Health Science Centre of the University of Debrecen	Ervin Berényi
Vascular biological capacity and myocardial physiologic capacity	Attila Tóth
Molecular pharmacological investigation of voltage-gated ion channels	György Panyi
The role of the ion channel Kv1.3 in T-cell activation	György Panyi
Polymer Chemistry and Nanotechnology Service Laboratory	Sándor Kéki
Molecule bank	Tamás Patonay
Drug combination for obese individuals to enhance their involvement in sport activities	László Simon
The progression of hypercholesterolemia and its effects on the cardiovascular system	Árpád Tósaki
Protein phosphatases in endothelial barrier regulation	Anita Boratkó
The potential ways of utilization of silica based aerogels	István Lázár
Presentation of medical technology tools	Zoltán Csernátony
Histaminase containing dietary supplement	Sándor Sipka
Mini PET CT-KIT	Miklós Emri
Telemedicine system	Andrea Ficzere
Development of motion detection system – hinge	Judit Zsuga
Opportunities in E-Health	Krisztina Csapó

The above R&D projects were presented and discussed with experts (representatives of R&D&I companies like Richter Gedeon Plc., Magyar Telecom Plc. and Day One Capital business angel fund) at the pilot innovation workshops, regional workshops and follow up meetings.

The experts (representatives of companies) showed interest in the following projects:

- **Eardrop preparation containing adenosine** - Sándor Sipka, István Sziklai
  A company is interested in this project. After getting the results of the completed clinical studies they would like to prepare *a follow up meeting* with the participation of the colleagues of the company's business development department.

- **Imaging research possibilities in the Medical and Health Science Centre of the University of Debrecen** - Ervin Berényi
  A company is interested in this project. In order to launch *further cooperation and joint research* the colleagues of the company are going to contact the researcher.

- **Generation of iPS cells from fibroblasts**; **Preparation of neuronal stem cells for pharmacological investigations** - Zoltán Simándi
  A company is interested in this project. In order to discuss the exact aims and directions of the research study the company would like to prepare a *follow up meeting*. The colleagues of the company are going to contact the researcher.

- **Vascular biological capacity and myocardial physiologic capacity** - Attila Tóth
  The technology might be interesting for the company in the future. They asked the researcher if it is possible to get continuous feedback on the project.

- **Proteomics Service Laboratory** - Éva Csősz
  A company is interested in the presented services. They expressed that if they need such kind of services in the future they will contact the researcher.

Matching by database

During this project period we actively checked the Medical Innovation Database of the project in order to find cooperating partners (R&D&I related companies, other clinics and research institutions) for our identified innovations.

During the project so fare we identified 15 promising innovations/technologies at the Medical and Health Science Center of the University of Debrecen and 10 of them are uploaded to the mentioned Medical Innovations Database.

With the help of the database, the Lead Partner was able to find one of our innovations called *'Automatic positioning system for operating lamps'*, which is interesting for them. It means that it is interesting for Forum MedTech Pharma e.V., which is a network of key players in the healthcare industry aiming to facilitate contacts and promote cooperation between its members. The LP mentioned that there is another company called Trumpf, which is a high-tech enterprise, focuses on manufacturing technology, photonics and medical technology and it also shoes interest on this solution. We prepared a so called technology sheet for this technology. (See the sheet attached to this document.) The technology sheet was sent via e-mail to the LP, so the discussion is already started and currently we are waiting for some feedbacks.

Development of "technology sheets" as a best practice example

Within the project we developed a so called ***technology sheet,*** which can be used as a marketing tool in order to find potential utilizing partners for the different technologies/ideas.
The technology sheets are containing the following information: short description of the given technology, back ground of the research, description of the invention and the technology and the current development phase, advantages of the technology, necessary financial or other resources, next steps or business opportunities and contact information.

The electronic version of these sheets can be uploaded to the website of the TTO and paper versions can be used at different conferences, thematic events and exhibitions in order to draw attention of the target groups.

Technology sheet of the *Automatic positioning system for operating lamps* technology

Automatic positioning system for surgical lights

University of Debrecen

Researchers of the University of Debrecen have developed a hands-free positioning system which is suitable for the automatic setting of surgical lights applied in operating rooms. It enables the surgeon to set the direction and focus of the light properly without assistance or touching the lamp, which means a solution to the disadvantages of the presently used systems.

Background

The currently used surgical lighting systems have many drawbacks due to the way the lights are set, which results in lack of efficiency.
During surgery the lights are set on the basis of instructions from the surgeon. The effectiveness of adjustment depends on the quality of communication between the surgeon and the operating staff, therefore the process might be complicated and result in improper settings.
Another major drawback is that during the positioning of the conventional operating light system the lamp itself has to be touched, which leads to unwanted sterility issues.

Invention and technology

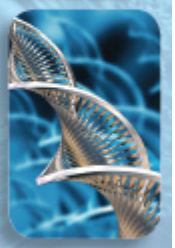
The inventors have developed a solution for the above problems by creating a hands-free, one-button, automatic positioning system with the help of which the surgeon can set the direction and focus of the light properly without requiring assistance or touching the lamp.
During operation, the surgeon wears a special headband, which is able to determine the direction the surgeon is looking at.
The positioning process is started with the help of a remote control, which the surgeon can operate with their foot.
The principle of the functioning of the system is based on a perceptive system, which sends the signs of the headband to the positioning controller, which in turn controls the engines on the outriggers of the multi-axis operating lamp.
The controller directs the light of the operating lamp, situated at the end of the outrigger system, to the area targeted by the surgeon.
In order to avoid the shadow of the head, the system follows the principle of programming beforehand (the light of the lamp is projected above the left or right shoulder).

Advantages of the technology

- Hands-free, one-button operation of the lighting system
- Faster, more effective adjustment due to automatic positioning
- Compatible with most outrigger systems currently in use
- Shadow of the head is avoided
- No sterility issues
- Priority patent application has been filed

Next steps

The University is seeking partners for the exploitation of the technology.



Medical and Health Science Center

Knowledge & Technology Transfer Office

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Best Practice Report –Medical Valley EMN e.V., Germany

Medical Valley EMN e.V. followed in total eight promising ideas from hospitals and health care providers during the implementation of InTraMed-C2C. Exemplary the proceeding towards implementation of the project “Online based modern wound treatment for diabetic foot syndrome” will be described here.

Background: The diabetic foot syndrome results directly from diabetes mellitus. The most serious foot complications in diabetes are:

- Diabetic foot ulceration. It occurs in 15% of all patients with diabetes and precedes 84% of all diabetes-related lower leg amputations.
- Diabetic foot infections
- Neuropathic osteoarthropathy of the foot

In the care process of patients with diabetic foot syndrome physicians from different backgrounds have to be involved as well as nursing staff of different nursing services. The efficient coordination from diagnosis to treatment and care is difficult in this special disease pattern as so many different technical disciplines are involved.

Idea: Dr. med Günter Kraus together with other diabetologists from the “Bavarian Foot Net e.V.” has thought about an efficient online based modern wound treatment support system where all involved physicians and care staff have access in real time to all patient related information in order to plan and execute the treatment of the diabetic foot syndrome better and faster. The whole process will be fastened through the implementation of per patient database where all information on past treatment, latest pictures of the wound etc. will be displayed in real time. Data privacy protection will be secured. Each physician has just access over a secured and stable connection to the data of its own patient. As the system is online based a harmonization with the different IT systems of each practice is not necessary. The access is planned over an app. Such an online based support system for treatment of diabetic foot syndrome is not yet implemented. It would be a novelty. The aim was to implement a prototype and test it in a clearly defined physicians network in Upper Franconia and Munich.

First contact: The first contact between Dr. Kraus and InTraMed-C2C-partner Medical Valley EMN e.V. regarding the project idea had been at the end of June 2012. The evaluation of the idea showed a huge potential. A personal meeting with Dr. Kraus was initiated where Dr. Kraus defined the requirements for support of Medical Valley EMN e.V.. Medical Valley EMN e.V. was asked to moderate the process of conceptualizing the project and to support in identifying possible financers.

Steps towards implementation: In several meetings/workshops the concept was sharpened. In mid-August 2012 the Bavarian Ministry of Health was identified as possible financer of the project implementation by Medical Valley EMN e.V.. The application for financial support by the Bavarian Ministry of Health required a certain project structure and description. Medical Valley EMN e.V. together with Dr. Kraus adopted the project concept according to these needs and finalized the project consortium. The involvement of a significant share of target group members in the test area Upper Frankonia (18 diabetologists including their local treatment and care networks) showed the relevance of the concept. The application was submitted in November 2012. The acceptance is still pending (status 31.03.2013) but it is expected to come soon. All in all the time from idea to finalizing the concept according to the requirements of possible financers was rather short. The meetings where face to face meetings between Dr. Kraus and representative of Medical Valley EMN e.V. following a clear agenda. All meetings where well prepared. The main problem regarding implementation is the long decision time on project financing by the Bavarian Ministry of Health.

Investment: The project stimulated an investment of around **525.000 €** within the Medical Valley EMN. The investment is not driven by industry but by health care professionals. Industry is just involved as suppliers of the technical basis. This highlights the relevance of the concept for the involved physicians and health care institutions.