

Knowledge transfer and applicable tools

Vadim Iatchevici, IPR Helpdesk
Ambassador, Moldova

Albena Vutsova, professor, Bulgaria

Table of contents

- Knowledge transfer – introduction
- Identification of needs and open dialog between research and industry
- Knowledge transfer tools
- Management of knowledge transfer process



Knowledge transfer – introduction

Knowledge transfer - definition:

- **Process of accumulation, collecting and sharing:**
 - Knowledge
 - Skills
 - Competence
- **Multi steps process facilitating transfer of:**
 - Information
 - Technological methods
 - Results
 - Products
 - Practical tools

From research to the industry



Knowledge transfer cycle



Knowledge Transfer?

Technology transfer is part of knowledge transfer – developing practical application of research results

Realization:

- Formal transfer of the rights to use and commercialise research product
- Innovative products resulting from research

Typical Activities

Includes commercial and non commercial activities through:

- Licensing
- Consultancies
- Publications
- Spin-off creation
- Research collaboration
- Mobility exchange

Technology Transfer ?

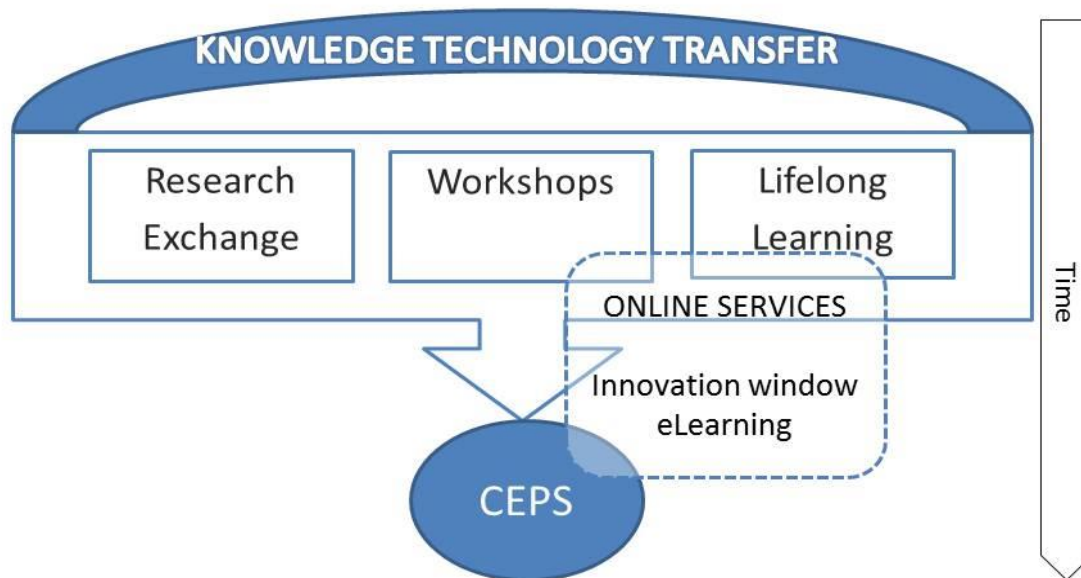
Technology transfer is the movement of early stage technologies and ideas from researchers to the private or public sector.

From AUTM's* web site: "*Technology transfer* is the process of transferring scientific findings from one organization to another for the purpose of further development and commercialization."

* *AUTM = Association of University Technology Managers*©



Knowledge Technology Transfer



Need of knowledge transfer – WHY? I

- Industry and SMEs are client of the research activities
- Non-implemented research product in the practice - waste of time and money
- Research results can be utilized in industry for creation of new products; processes; services; systems; markets and thus raising economic and financial capacity of given entity or branch

Need of knowledge transfer – WHY? II

- Large companies are able to manage innovation process by themselves. But they need and use external ideas
- SMEs – needs targeted support – WHY? - because they are different in behavior; level of expertise and knowledge; management capacity; ability of networking

Knowledge transfer - essence

- KT - multi step process
- Unsolved problem or bottleneck can compromise overall process effectiveness
- Ongoing exchange of knowledge, information and skills
- Raising awareness of the industry towards research achievements

Knowledge transfer - barriers

- Lack of trust
- Lack of information
- Lack of specific skills
- Limited resources
- Bad calculation of time needed
- Legal obstacles
- Customer responsiveness

Knowledge transfer and innovation I

- Raising knowledge and competence - reflect positively upon innovation capacity
- Higher innovation capacity is linked to expectation for profitability and business growth
- KT could influence on intensity of innovation activities

Knowledge transfer and innovation II

- Transferred knowledge could lead to innovative solution
- Transferred knowledge can be adapted to specific requirements and/or facilitate users
- Transferred knowledge must integrate into technology and systems of other users
- Transferred knowledge should upgrade existing knowledge or incorporate in it

Knowledge transfer and innovation III

- Important aim - to identify industry needs
- Industry needs for innovation are:
- Known - enterprise's demands pull for innovation
- Hidden - innovation related to technology push external to the company

Knowledge transfer and innovation IV

Identifying industry needs - possible approaches:

- Extracting typical problems
- Outlining the main market trends and challenges for given sector
- Defining practical solution in possible area of interest

Knowledge transfer and innovation V

Ways for identifying industry needs:

- Various discussions
- Industry panels and focus groups
- Best practice guides
- Small seminars with practical targets
- Working relationships between knowledge providers and knowledge consumers

NB: Role of mediators is important for effective TT

Knowledge transfer and innovation VI

Role of mediators:

- Possible support for better knowledge about market
- Bettering communication skills
- Reducing time and efforts of the product user by:
 - Reducing technical risk
 - Reducing financial risk
 - Reducing market risk

Knowledge transfer and innovation VII

TTOs Innovation Activities:

- Guiding and assisting in the filing of new invention disclosures and patents
- Conducting activities oriented towards generating, assimilating, and harnessing the results of research and innovation in the economic and social sphere
- Advising researchers and students in the field of IP
- Conducting seminars in the IP field and copyright for various stakeholders
- Development / improvement of university policies in the field of IP

Technology transfer and research based knowledge implementation I

- Research based knowledge – the scope of knowledge; skills and methods generated through scientific finding
- Implementing research based knowledge - process of transferring research products from RO to the company in order to be reached realization of something new in the company - for instance - new products/services, processes, system

TOOLS:

Sharing knowledge:

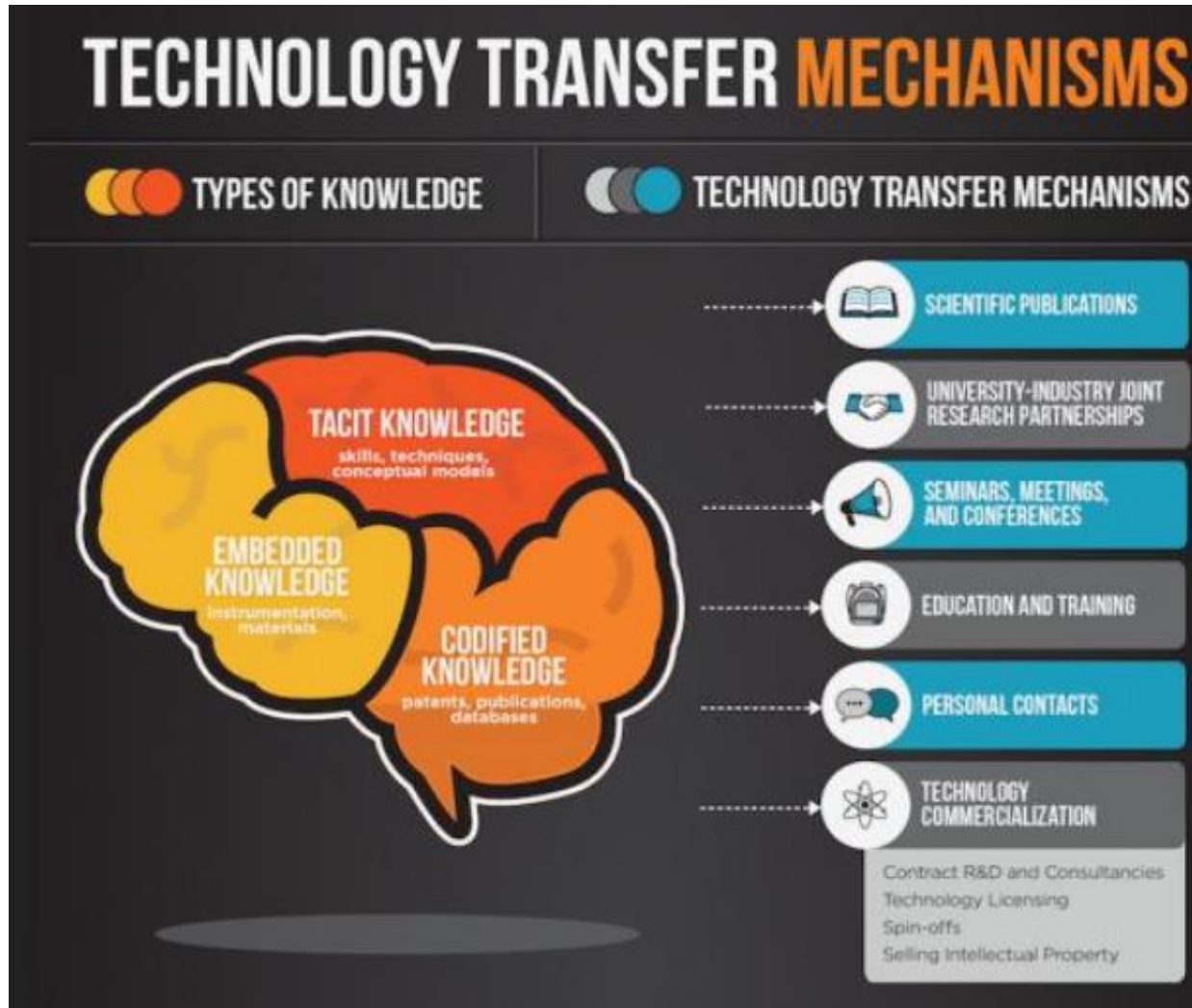
- Transferring of pure knowledge and technical expertise
- Incorporating new technology in the production process

Learning process – on personal and/or organizational level

Technology transfer and research based knowledge implementation II

Role of TTO in research organization:

- Establishing relationships with firms and community actors;
- Generating new funding support from sponsored research or consulting opportunities;
- Providing assistance on all areas related to entrepreneurship and intellectual property (IP);
- Facilitating the formation of university-connected companies utilizing PRO's technology (start-up) and/or university people (spin-off) to enhance prospects of further development; and
- generating net royalties for the PRO and collaborating partners.



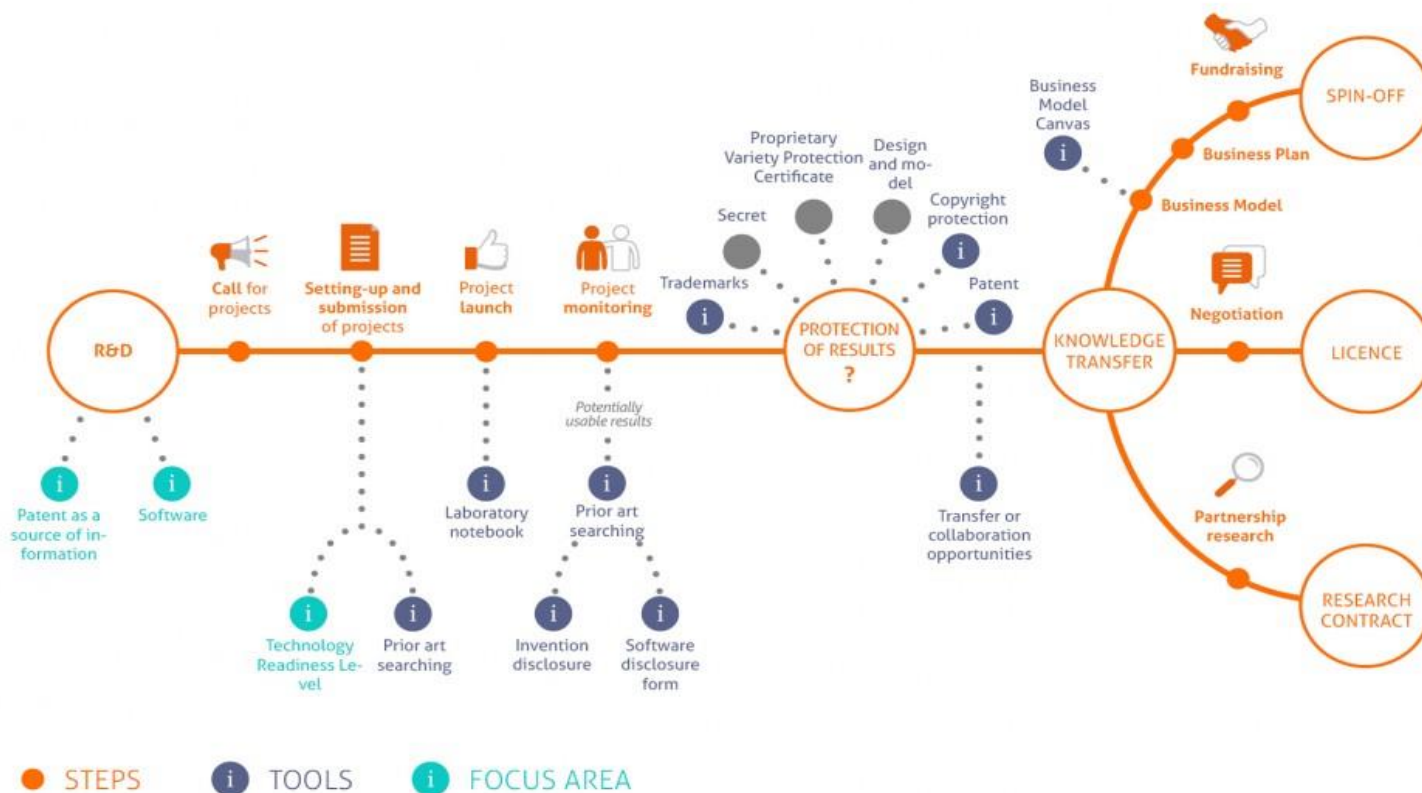
Technology transfer and innovation management

- Innovation relies on open and close innovation approaches
- Innovation relies on collaboration and interactive learning
- Commercialization can be resumed as incorporating innovation intensity and level of innovation output
- Using external knowledge and expertise - complement the internal knowledge

Technology transfer - TOOLS I

- Knowledge transfer is supposed to create awareness of research results for the industry by different tools
- Tools are based on applying one or several kind of methods
- Collective techniques are also applicable

Knowledge transfer steps and tools



Technology transfer - TOOLS II

Transfer of Knowledge also is:

- Learning of industry personnel
- Learning of experts, researchers, etc.
- Learning of mediators
- Implementing knowledge in practice

TOOLS to support industry I

- Meetings, conferences, seminars with targeted presentations
- Study visits
- Coaching
- Providing various kinds of thematic materials - posters; booklets; leaflets
- Brokerage events
- Web based platforms

TOOLS to support industry II

- Training courses
- Demonstrating events
- Networking with Ros
- Consultancies
- Staff exchange and mobilities
- E-learning courses

TOOLS to support experts, researchers

- Scientific articles
- Books
- Targeted conferences - presentations
- Industry placements
- Apprenticeships
- Experts' visits

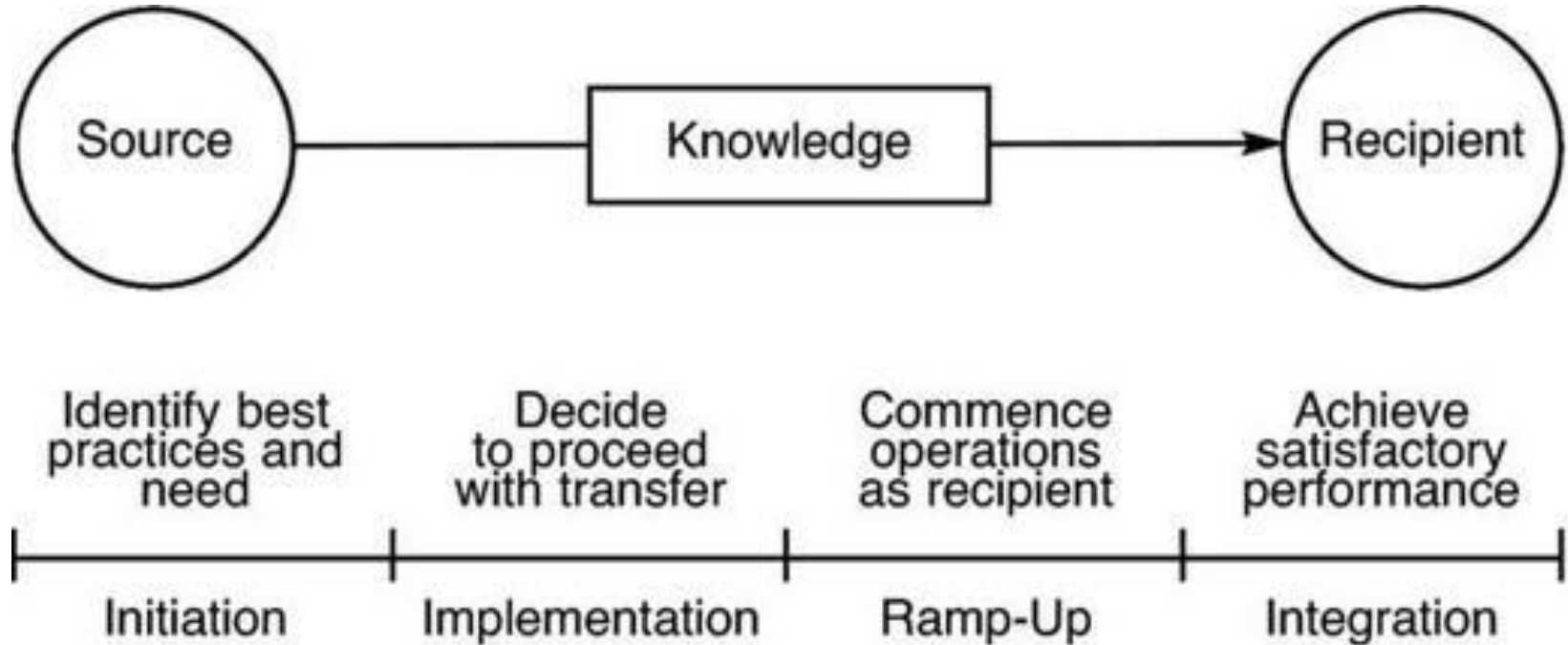
Managing knowledge transfer process

For achieving effective knowledge transfer is needed:

- Demonstration of benefits, due to the using of public money for research
- Recognition and mutual contribution of the partners
- Better understanding of both parties requirements
- Shared responsibility, costs and benefits



Knowledge transfer process



Complementarity support for industry I

- Implementation of:
 - Know-how
 - Technology
 - Expertise
- Applying innovative solution
- Applying organizational solution, incl. business planning
- Fostering commercial benefits

Complementarity support for industry II

Identification of:

- Required product volume and turnover
- Possible market share/market penetration
- Product or process properties
- Business impact
- Success criteria

What is important for effective realization of TT and KT I

- Ownership of the transferred project
- Incentive for actors in knowledge/technology transfer
- Management of conflict of interest
- Monitoring of knowledge transfer process
- Availability of adequate resources
- Performance indicators of KT

What is important for effective realization of TT and KT II

Proper protection of IPR:

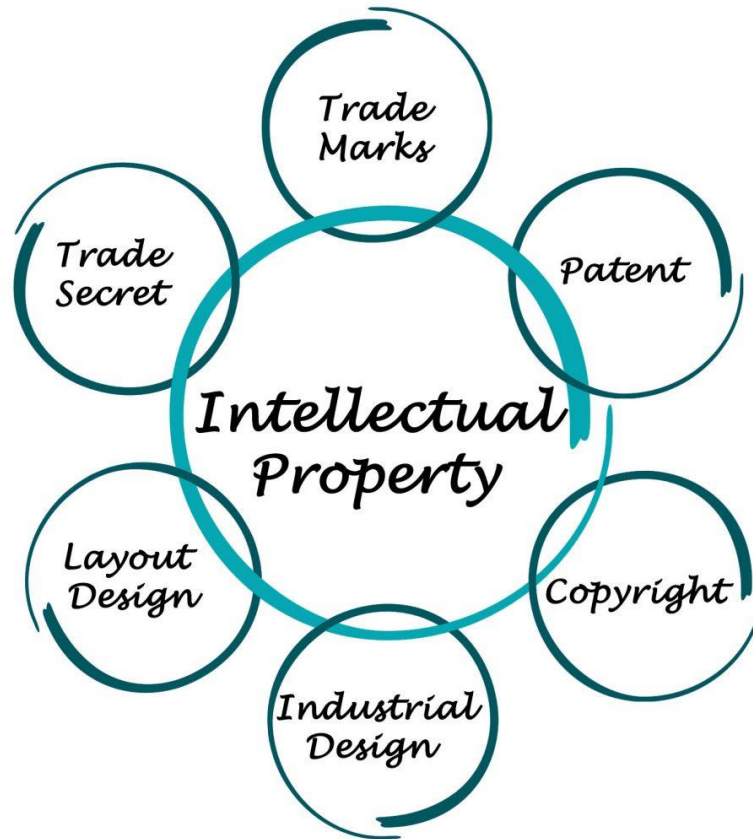
- Patent - gives the owners exclusive rights
- Utility model - allows the right holder to prevent others from the commercial use
- Trade secret - confidential business information (providing competitive edge) can be considered as a trade secret
- Industrial design – protection of ornamental or aesthetic features

What is important for effective realization of TT and KT III

Proper protection of IPR:

- Copyright – protection of original works of art, music, etc.
- Geographical indications - raised in relation to food products (3 applicable systems):
 - Protection designation of Origin PDO
 - Protection geographical indication PGI
 - Traditional specialty guarantee - TSG

Intellectual property



What is important for effective realization of TT and KT IV

- Protection of IPR via:
 - Special legislation
 - Various types of agreements
- Ownership can belong to:
 - Funding organization
 - Research organization and/or researchers
 - Shared

Thank you for you attention!

vadim.iatchevici@gmail.com

avutsova@yahoo.com