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Transferring V4 expertise in knowledge/technology transfer

Exploitation of IP – Knowledge and Technology Transfer in practice

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Technology and Knowledge Transfer Overview

Technology transfer

- The **process** of sharing of skills, knowledge, technologies, methods of manufacturing, samples of manufacturing and facilities among various institutions
- **Transfer of technological innovation** from one party to another for purpose of developing and commercializing useful products
- Ensure that scientific and technological developments are **accessible to a wider range of users** who can then further develop and exploit the technology into new products, processes, applications, materials or services

Technology transfer

- From academia to industry: **benefits and challenges** for both - and for the investigator/inventor
- It is closely related to (and may arguably be considered a subset of) **knowledge transfer**

Challenge to technology transfer

- **Bayh-Dole Act** (PL 96-517, Patent and Trademark Act Amendments of 1980. U.S.)
 - Created a **uniform patent policy** among the many federal agencies funding research
 - As a result of this law, universities **retain ownership** to inventions made under federally funded research
 - In return, universities are expected **to file for patent protection** and to **ensure commercialization** upon licensing
 - Royalties from such ventures **are shared** with the inventors; a portion is provided to the University and department; and the remainder is used to support the TT process

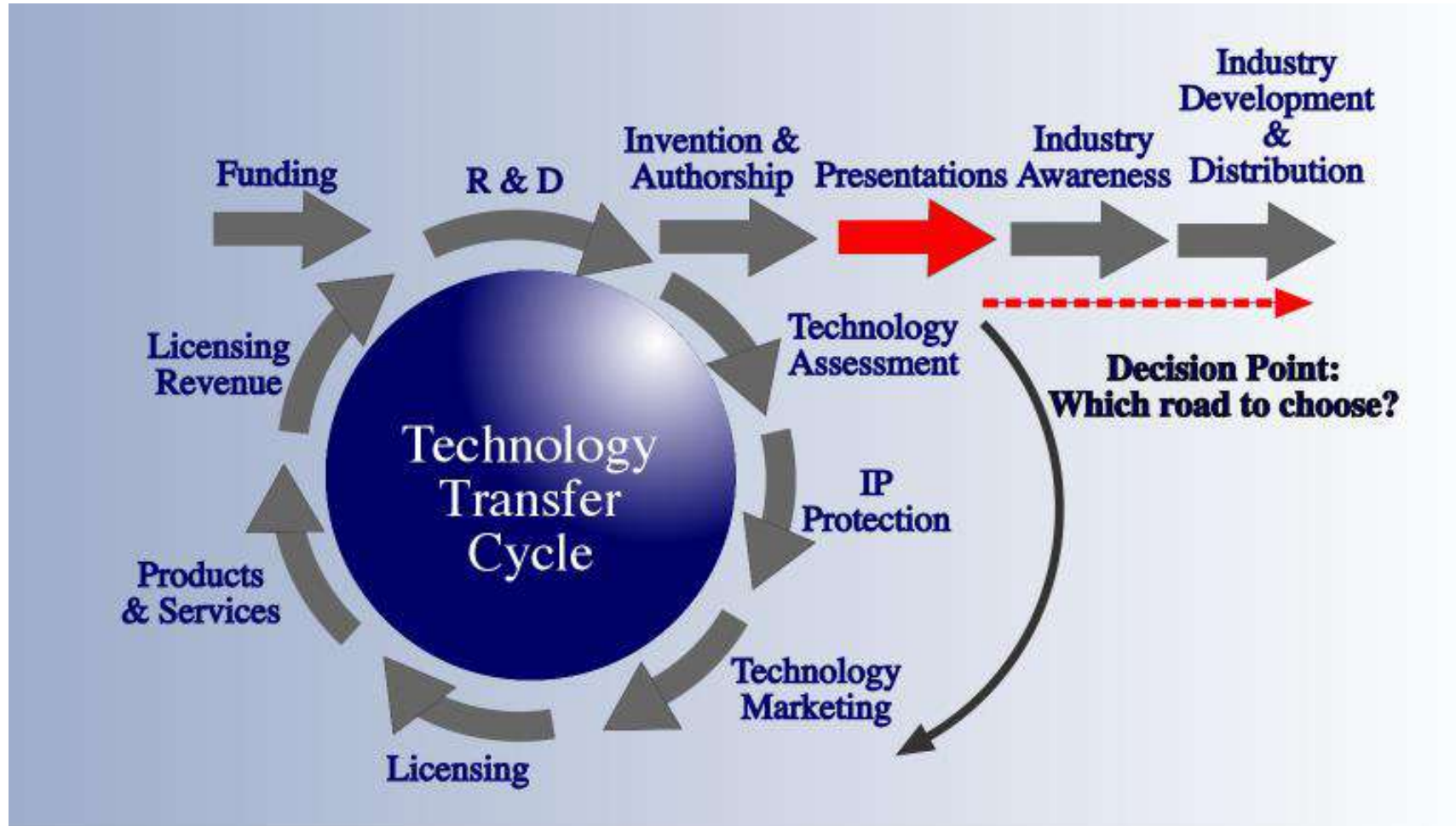
What technology is transferred?

- **Intellectual Property**
 - Inventions (usually patentable)
 - New, useful, not obvious
 - Determined by patent lawyers, patent office, courts
 - Copyrightable works -(mainly software)
 - Trademarks; trade secrets
- **Tangible** Research Property (unpatentable biological materials)
- **Intangible** Research Property (research results, know-how)

How is technology transferred?

- Informally
- Formally-agreements
 - Licenses, material transfer agreements, confidentiality agreements, research agreements
 - Negotiated by technology transfer offices/departments
 - Signed by authorized institutional representative (**investigators not authorized!**)

Different ways to handle R&D results



Transfer process

- Many companies, universities and governmental organizations now have an "**Office of Technology Transfer**" dedicated to identifying research which has potential commercial interest and strategies for how to exploit it
- For instance, a **research result may be of scientific and commercial interest**
- Patents are normally only issued for practical processes, and so someone - not necessarily the researchers - must come up with a specific practical process
- Important consideration is **commercial value**

Transfer process

- The process to commercially exploit research varies widely
- It can involve
 - **licensing agreements** or
 - setting up joint ventures and partnerships to share both the risks and rewards of bringing new technologies to market
- Other corporate vehicles, e.g. **spin-offs**, are used where the host organization does not have the necessary will, resources or skills to develop a new technology
- Often these approaches are associated with raising of venture capital

Transfer process

- Venture capital a means of funding the development process
- Technology transfer offices may work on behalf of research institutions, governments and even large multinationals
- Where start-ups and spin-outs are the clients, commercial fees are sometimes waived in lieu of an equity stake in the business
- As a result of the potential complexity of the technology transfer process, **technology transfer organizations are often multidisciplinary**, including economists, engineers, lawyers, marketers and scientists

Technology and Knowledge Transfer in Practice

Background of technology transfer - internal

- Support of university management
- Legal roles, terms and conditions within university regarding IP protection and technology transfer
- Sufficient financial resources for IP protection and all related TT activities
- Efficient and motivated staff members
- Competent executive head of TT office/department

Background of technology transfer - external

- Existence/creation/development of **Regional system of TT collaboration** (network) between universities, public sector (region, city, regional TT and innovation offices...)
 - Hard infrastructure – building-up new R&D infrastructure
 - Technology transfer, commercialization
 - Services for businesses (innovative business incubation)
 - Human resources, internationalisation, promotion, cluster development
 - Effectively support creation and development of innovative companies
- Regional financial resources (funds) TT activities (?)
- The **Regional Innovation Strategy** - i. e. RIS of the South Moravian Region in the Czech Republic

Background of technology transfer - external

- Existence/creation/development of **National system of TT collaboration and support of TT activities** (Proof of Concept, pre-seed money, spin-off creation...)
 - **Transfera.cz** - the national platform protects the interests of the Czech transfer community with the aim to promote and develop activities in the field of technology and knowledge transfer 
 - **Czech Republic Innovation Strategy 2019-2030**
 - Czech Republic - The Country For The Future
 - Support spin-off and start-up creation/ecosystem
 - Intellectual Property Protection
 - ...



Technology transfer office activities

- Has to be established **to support the collaboration** of the scientific community of university with the industry and to **boost the transfer** of research results into practise
- **First contact point** - „One stop shop“ for commercial partners in initiating collaboration, creation of long-term partnerships, promotion of IP created by researchers at the university
- **Interface** - direct collaboration with other partners in the region (and beyond) in the field of innovation (other universities or innovation centres, clusters, national ministries...)

Technology transfer office activities

- **A/ Internal technology transfer services**
 - IP protection
 - Consultancy concerning emerging IP with the individual researchers
 - Basic assessment of the IP protection for individual inventions
 - Administration of patenting and other forms of IP protection
 - IP consultancy (related to projects)
 - IP issues check and consultancy during preparation and management of projects and similar activities
 - Standard legal support (NDA's, MTA's etc.)
 - Internal TT conditions maintenance
 - Methodological leadership in TT issues within university, check of the general legislation in relation to university sublaws in the TT area

Technology transfer office activities

- **B/ Business development**

- Marketing and licensing

- Identification of licensing opportunities
 - Marketing available technologies and know-how at university

- Spin-offs and incubation

- Consultancy concerning the commercialization via new company - emerging spin-offs
 - Possible cooperation with partners on the incubation agenda

- Contract management

- Maintenance of running contracts related to know-how, licensed IP and further related issues

Technology transfer office activities

- **C/ Creating opportunities**

- Educational and training activities

- Trainings focused on TT and managerial issues offered to researchers and other employees of university (administrative, management)

- Partner matching, workshops etc.

- Special meetings devoted to networking (business breakfasts, special workshops and presentations etc.)

- Public relation (TT publicity, exhibitions etc.)

- Newsletter, web portal, leaflets
 - Fairs and exhibitions
 - Thematic cooperation with the PR department of university

Individual Process Steps of Technology Transfer Office/Department

IP protection

- **1. Consultancy concerning emerging IP with the individual researchers**
 - Opportunity identification by TT manager or inventor
 - Communication and clarification between TT manager and inventor
- **2. Basic assessment of the IP protection for individual inventions**
 - Basic evaluation of the publications
 - Solving legal issues
 - ROI administration
 - Commercial potential evaluation
 - Recommendations and conclusions

IP protection

- **3. Administration of invention reports**
 - Process initiation
 - Formal property management
 - The symbolic inventor award
- **4. Patent filling, administration and further monitoring**
 - Preparation of the patent application
 - Patent application
 - Maintenance and development of the IPR protection

Trademarks

- **5. Trademarks administration**
 - Business need arise
 - Decision about new university trademark
 - Protection process
 - Business relations
 - Department's trade marks

IP consultancy

- **6. IP issues check and consultancy during preparation and management of projects and similar activities**
 - First contact
 - Suggestion and remarks to the legal issues
- **7. Standard legal support (NDA's, MTA's etc.)**
 - Researcher's/inventor's demand
 - Working out the contract, legal consultancy

Internal TT conditions maintenance

- **8. Methodological leadership in TT issues within university, check of the general legislation in relation to university sub laws in the TT area**
 - Consultation regarding IP
 - Support in business negotiations
 - Contracts concluding
 - Participation in creating internal rules
 - Administration of contracts concluded within TT office/department
 - Project consultation regarding IP
 - Support of Proof of Concept university projects + looking for the financial resources for it

Marketing and licensing

- **9. Marketing available technologies and know-how at university**
 - Vision
 - Internal environment analysis
 - External environment analysis
 - Funding analysis
 - SWOT analysis
 - Setting up the goals and priorities
 - Plan formation
 - Monitoring, optimizing

Marketing and licensing

- **10. Identification of licensing opportunities**
 - Survey about the existing licenses
 - License offering to the companies
 - Specifying interest and the conditions for marketing
 - Negotiating the license selling conditions
 - Signing contract

Spin-offs and incubation

- **11. Consultancy concerning the commercialization via new company - emerging spin-offs**
 - Initial contact
 - Clarifications meetings
 - Spin-off document formation
 - Spin-off approval
 - Spin-off establishment
 - Continuous support

Spin-offs and incubation

- **12. Cooperation with relevant incubator**
 - Identification of the interest
 - Preliminary evaluation following basic standards
 - Formal processing
 - Identification of business opportunities within the incubators

Contract management

- **13. Maintenance of running contracts related to know-how, licensed IP and further related issues**
 - Negotiations with the inventors/researcher
 - Business negotiations
 - Contract preparation
 - Contract signing

Creating opportunities

- **14. Internal: Awareness, information regarding IPR (key-note presentations, articles...)**
 - Presentation of university IP and technology transfer activities upon request
 - TTO 's presentation of university IP and technology transfer activities
 - Presentation of university owned IP
 - TTO 's services offer presentation
 - TTO 's results and events presentation in university press

Educational and training activities

- **15. Regular teaching offered to researchers and other employees of university (administrative, management)**
 - Marketing
 - Creating the model of the course/subject
 - Internal registration of the course/educational subject
 - Organization
 - Course realization and supervision
 - Classification

Educational and training activities

- **16. Trainings focused on managerial and TT issues**
 - Marketing
 - Creating the model of the course/subject
 - Organization
 - Participants
 - Course supervision

Partner matching, workshops etc.

- **17. Special meetings devoted to networking (business breakfasts, workshops, presentations etc.)**
 - Identifying meeting opportunity
 - Discussing interest and inviting other parties
 - Specifying meeting conditions - funding
 - Promoting action
 - Preparing meeting agenda
 - Arranging and publishing meeting
 - Event performing
 - Assembling conclusion

Public relation (TT publicity, exhibitions etc.).

- **18. Newsletter, web portal of TT office/department**
 - Administrating the TTO web page
 - TTO newsletter, leaflets...
- **19. Fairs and exhibitions**
 - Identification of the opportunities
 - Internal and external environment analysis
 - Preparation and presentation of the exhibition
 - Feedback and conclusions
- **20. Thematic cooperation with the PR Office at university**
 - RMU demand for cooperation
 - Working out the material

???

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