

# Fostering Innovation in the Danube Region through Knowledge Engineering and IPR Management

## Technology Transfer and Open innovation

READING MATERIAL prepared for KNOWING HUB basic users training

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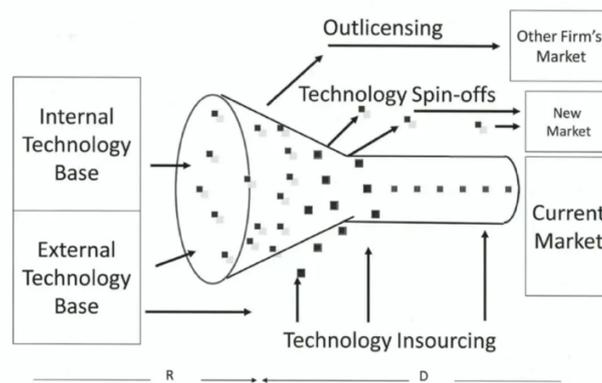
# Living in a world of Open Innovation paradigm

“The only constant in life is change” was said by Ancient Greek philosopher Heraclitus. In today's interconnected world, the change is desired to be driven since the situation otherwise seems to be ‘out of control’ (Rončević and Modic, 2012, p.313). EU for example reduces the risks by heavy investments in research and innovation through mechanisms as H2020 (see more in Jurak, 2019). The recent events in the world, the COVID-19 pandemics, and the threat of a global economic crisis did contribute to understanding and mutual agreement that innovation is a key tool to manage and control global trends. The global trends therefore are understood as omnipresent forces that stem from the past, shape the present, and will have impact the future (Singh et.al, 2009).

Following the definition, the concept of Open innovation embraces the essence of the innovation process. Chesbrough et al (2006) define open innovation as ***“the use of purposive inflows and outflows of knowledge, to accelerate internal innovation, and to expand the markets of for external use of innovation”***.

On the other hand, the Chesbrough's (ibid) definition of Open innovation is concerned with business models a firm use and can use to successfully embrace the openness of their boundaries. One of the mechanisms is most definitely IP protection. Innovations protected by IP are able to be “commercialized by the company, business models are created, and capital investments are required to create growth. The real social impact of an innovation only arrives after it is commercialized.” (Chesbrough, 2012, p. 22). The main dynamics Chesbrough is interested in are the one embracing the view of the Organization as the main generator of innovations and the organization's concern on how to commercialize the innovation in order to assure financial success to fund further development and growth.

## How Open Innovation works



Source: Chesbrough, 2012, p.23

In the above picture 1, it is visible how Chesbrough (2012) explains the dynamic relationship between market, market creation, and organizations operating in such conditions. With a strong technological base, both internal and external, the organization is able to develop their research activities with internal and external partners to assure position at the primary market, via spin-off companies the new markets are created and with engaging in out-licensing, the organization assures a share in other organizations' markets. There are three stages of Open innovation process that include: a) research, b) development and c) commercialization (Bujor and Avasilcai, 2018). For each of the initial ideas there are three mentioned stages before the invention (if research is successful if development is possible and if product is commercialized) reaches the market.

Another important aspect of Chesbrough's definition of open innovation is the two-fold nature of relationship towards innovation generation. Bujor and Avasilcai (2018) noticed the flow of innovation being: a) outside in, and b) inside out. The outside-in view focuses on processes of opening up to external sources of knowledge and information in order to increase research and innovation efficiency, where the second view allows the company to release the unused and underutilized ideas to other business for them to use better.

## What is Technology Transfer

As defined at the webpages of the European Commission, Technology transfer (TT) refers to the process of conveying results stemming from scientific and technological research to the market place and to wider society, along with associated skills and procedures, and is as such an intrinsic part of the technological innovation process.

Technology transfer is a complex process that involves many non-scientific and non-technological factors, and many different stakeholders. Good or high-quality research results are not enough for successful technology transfer; general awareness and willingness both at the level of organisations and individuals, as well as skills and capacity related to specific aspects, such as access to risk finance and intellectual property (IP) management, are also necessary components.

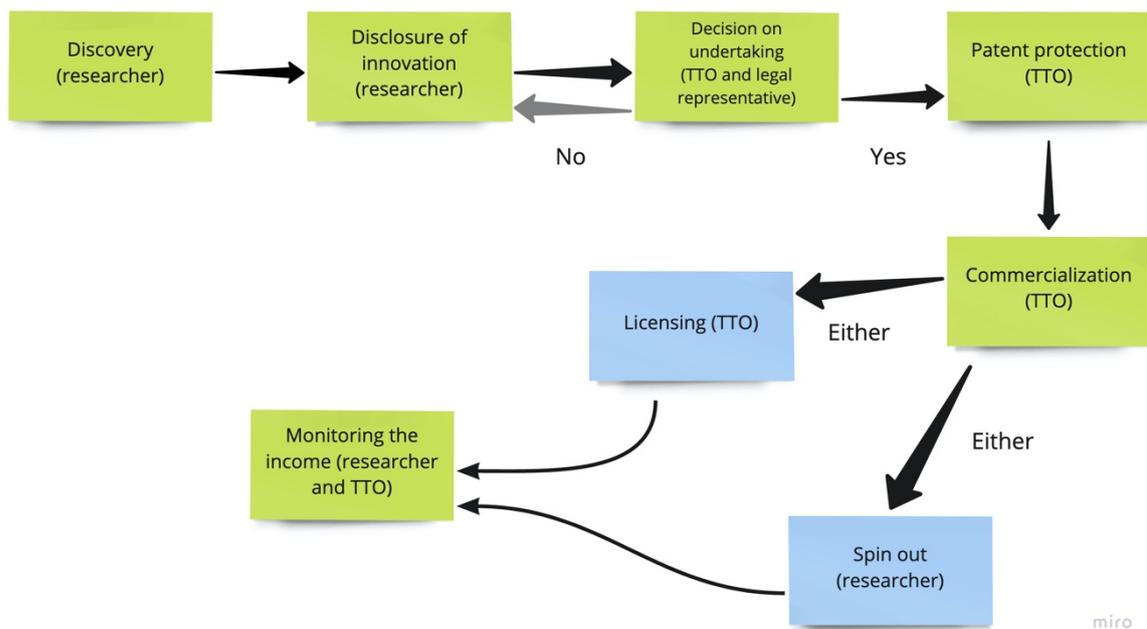
The fundamental steps of the technology transfer process are depicted in the figure below.

Technology transfer covers the complex value chain linking research to its eventual societal deployment. This begins with the discovery of novel technologies at research institutions, followed by the disclosure, evaluation, and protection of these technologies. The next steps include marketing, potential licensing agreements and the development of products based on technological inventions. The financial returns of these products can then, for instance, be used for further research.

## Technology Transfer process

In the below diagram we elaborate on how the process of Technology Transfer work. WE summarise the description as provided by Modic, Hafner and Fric (2018)

In the first phase we have a researcher with a discovery, developed until working prototype. In the second step, the researcher decided to disclose the innovation and he/she approaches the Technology Transfer officer for informative interview. The TTO officers carefully examine the patent databases (KnowING HUB for example) and market implemented solutions. If TTO officers evaluate the invention has market potential, the decision on undertaking is accepted. If innovation has market potential, the TTO files application for patent protection and decides on the commercialization of the patent. Commercialization can be done through two mechanisms, either through licensing or through spin out company. In both cases the monitoring of financial success is necessary. In case of licensing the TTO conducts the monitoring and in the second case the researcher as head of spin out monitors the income.



Source: Modic, Hafner, Fric (2018)

## Components of Good Collaboration

When discussing about open innovation and technology transfer the importance of collaboration in knowledge exchange is relevant.

Academia (represented by university or institute researchers and higher education teachers) has been living under different presumptions as business sector. Establishing collaboration relationships demands mutual understanding from both sides and below are listed some of the most important mechanisms for good collaboration. Both parties involved in establishing new collaborations are mutually responsible for success of collaboration.

In the centre of the relationships there is **respect**. Around respect there are the following components ensuring proper cooperation (as adapted from Green, 2020):

**Trust:** trust means accepting each other's given word and giving benefit of a doubt. Trust is maintained by honest and open relationship.

**Accountability:** means accepting responsibility, behaviours, and attitudes along with admitting mistakes (or being wrong).

**Safety:** refusing to intimidate or manipulate, respecting physical space, expressing self non-violently and honestly.

**Honesty:** to communicate openly and truthfully

**Support:** supporting each other's choices; being understanding; offering encouragement; listening non-judgmentally; valuing opinions

**Cooperation:** asking, not expecting; accepting change; making decisions together; being willing to compromise; seeking mutually satisfying resolutions to conflict.

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