

## E1.4.2

# Technology transference model guidelines for TURBO-SUDOE: External Guide

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## 1. TECH TRANSFER MODEL: OPEN INNOVATION 2.0

Currently the model adopted from most of innovation environments is still focused on an Open Innovation 1.0 framework, based on collaborative innovation between industry and research. The new model that should be implemented is focused on creating an entire ecosystem of networks working together in order to create innovation beyond industry needs.

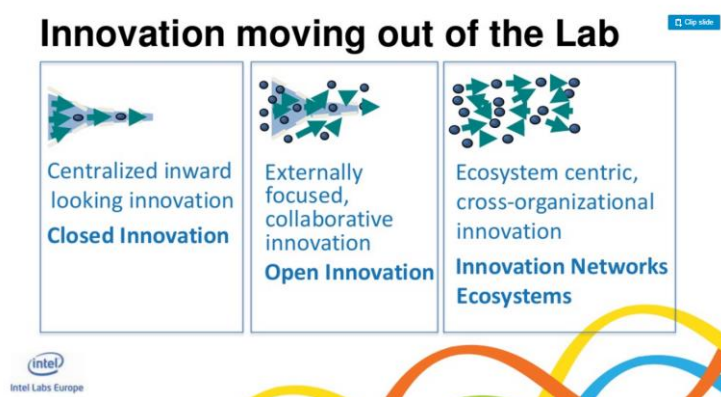
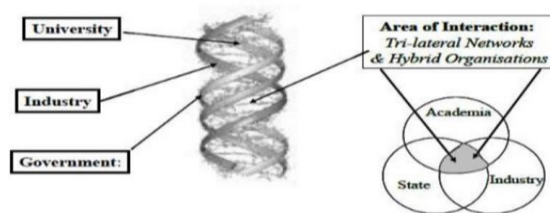


Fig. 1. Evolution of the innovation models. (Martin Curley VP Intel Labs).<sup>1</sup>

The Open Innovation 1.0 framework is based on a triple helix involving Academia, Government and Industry.

## Triple Helix Innovation



Source: Henry Etzkowicz

Fig. 2. Innovation model based on triple helix. (Martin Curley VP Intel Labs).<sup>1</sup>

The open innovation 2.0 framework proposes an ecosystem centric innovation based on a quadruple helix: Academia, Industry Government + Citizens

<sup>1</sup> Open Innovation 2.0: A New Paradigm, Martin Curley and Bror Salmelin

The effectiveness of the dynamics of Open Innovation 2.0 builds on the success of the collaborative R&D projects between companies incorporated in ecosystems where active participation are not only by producers (companies and technology generators) but also by users and consumers. The transposition of this term in the world of technology management perfectly suits to define a collaborative (and competitive) networking environment that integrates businesses, public research, governments, citizens, users. Central elements for the success of Open Innovation 2.0 ecosystems are the principles of inter-organizational collaboration, co-creation and sharing of value.

## 2. THE ROLE OF THE TRANSFERENCE BROKER

In order to implement the Open innovation 2.0 model, a role is needed: the Transference BROKER (Tbroker). The transference broker will be the catalyst for the execution of the model in charge to implement or participate in proper actions in order to implement the model. This manual presents the basic actions to be carried out to “build” a transference broker profile.

The transference broker, (TB) is foreseen to have a new role which brings together the activities of a technology broker and of a knowledge broker. The TB apart from find a solution for specific business problems, will gather and transfer information and knowledge to foster novel solutions for the whole environment composed by the OFFER (generator of knowledge and technologies such as universities, technology centers, research centers, etc.) and the DEMAND (receptors of technologies, knowledge and solutions such as companies, industry associations, administrations, etc.).

The transference broker has to gain a central role in order to create an open innovation environment where the innovation and the transference of innovations into the market will take into account the specific business context and the respective needs, and as well the societal challenges and requests, which are due to bring business opportunities to ensure the competitiveness of the companies.

The main function of the transference broker is:

- Understand, identify and define business priorities and societal needs from the DEMAND of a certain environment/sector in order to create a portfolio of technology areas of interest and the specific needs of each area. High relevance should be given to societal needs that can represent great business opportunities too.
- Understand, gather and prioritize technical and scientific results from the OFFER of a certain environment/sector in order to extrapolate the better available solutions to turn them into business and societal opportunities.

- Match the portfolios (needs and results), prioritizing the opportunities and design a plan to develop this opportunities in order to facilitate the transfer from the OFFER to the DEMAND (including all the specific actions to be carried out, the best transfer strategy, the financing, etc.).
- Create or improve a solid network between the OFFER and the DEMAND environments, creating opportunities of connection between both (such as specific events, workshops, roundtables, webinars, etc.). The transference broker should be the catalyst of this network.

For this reason it is critical that the transference broker can be able to understand and establish a straight interconnection with:

- Technology: Technology generators such as universities, technology centers and public or private research groups.
- Business: companies, business organization, marketing and business development personnel.
- Society: governments, administrations and citizens.

Thus, for the TB is foreseen the following profile:

- ❑ A high and skilled scientific background who can understand research results and interact with researchers as «peers».
- ❑ Be aware of the needs for business development with market oriented approach and preferably industry experience.
- ❑ Be able to provide legal advisors/people with legal and IP matters experience.
- ❑ Have soft skills to negotiate, facilitate, interact with different types of stakeholders (researchers, industry ,investors, governments, citizens).

To meet this profile it is requested that the transference broker is a person with experience in R&D and innovation projects and with some experience in technology transfer services and protocols related to IP management. Finally, according to a “pull model”, it has to have experience in the business and administration environment.

The guide aims to present the main steps related to:

- **The selection of the transference brokers.**
- **How to implement their training.**
- **How to implement a pilot project to build the TB profile.**

The definition and construction of a transference broker profile should imply the collaboration between players of the OFFER environment (universities, technology and research centers), players from the DEMAND (companies, industry associations, administrations) etc., and at least one partner, a broker, expert in the TECHNOLOGY and KNOWLEDGE transfer.

A specific project collaboration has to be set between players from the OFFER and Players from the DEMAND. The project collaboration should be focused on the creation of a transference broker profile for a specific sector.

The transference broker will be recruited by the OFFER partners (recruiting partners) of the collaborative project and should spend a period of training on the DEMAND premises to finally help to build a strong transference network between the OFFER and the DEMAND of that specific sector.

For this reason the selection process of the transference broker is mainly on the responsibility of the OFFER partners with the collaboration of the DEMAND partners in the training and pilot test of the transference broker profile.

### **1.1 Selection of the Transference Brokers. Main phases**

The Transference Brokers selection process will be managed by the partners from the OFFER, with the participation in the evaluation of the profiles of the partners from the DEMAND.

A complete application guide has to be prepared containing:

- Eligibility requirements
- Application process
- Eligibility and evaluation criteria
- Evaluation process
- FAQ document has to be prepared

The complete process will be built following different steps:

- Selection of the eligibility criteria
- Selection procedure
- Open call

### **1.2 Selection of the eligibility and evaluation criteria**

Candidates' eligibility criteria, and evaluation criteria for selection (profile requirements to be selected) have to be defined. All the partners which belong to the OFFER are due to participate in this activity and they must establish the eligibility criteria along the different meetings, set for this purpose. The partners have to define the application

form, the valuable criteria of the TB profile in terms of CV and experience, as well as the scoring scales for each of the defined criteria.

Regarding the profile of the Transference broker, it should be a profile with, at least, the following general expertise:

- Some experience in research, development of new products, development of new processes, have been involved in innovation projects among his/her career, preferably as a project manager in the covered business areas by TurboSUDOE.
- Experienced/knowledge about business environment of its sector: preferably have worked in/with companies of the sector, knowing how the value chain of the sector operates.
- Knowledge about role of administrations in the sector development, incentives offered, etc.
- Some experience in technology transfer and processes.
- Some expertise in main tools related to technology transfer activities.

According to this general expertise, it must be set at least three criteria for each general expertise.

### 1.3 Selection procedure

The selection procedure will follow two main phases:

- **Screening of eligibility:** it will consist on the evaluation of the eligibility based on the curricula and the information received according to the selection criteria. A score will be assigned.
- **Interviews:** based on personal interviews of the candidates.

The selection process might involve **one or two committees**:

- **The Evaluation Committee:** with one representative/partner related to each sector from the OFFER, the DEMAND and the TECHNOLOGY TRANSFER.  
**Role:** It is responsible for the first phase (screening of eligibility). The role of the evaluation committee is the review all the applications received, evaluate the candidates and make a recommendation (ranked list) to the Selection Committee of each recruiting partner.
- **The Selection Committee:** made of the all OFFER partners representatives that are going to recruit the transference brokers. Each recruiting partner will constitute its own Selection Committee to select one TB. The selection committee has to be constructed according to the internal rules of each OFFER partner.

**Role:** It is responsible for the official first evaluation ranking (taking in consideration the Evaluation Committee recommendation) and for the second phase (the interviews). The role of the selection committee is to take the final decision on the recruitment of the transference brokers.

In case the option is just for the creation of the Selection committee then it should include also members from the DEMAND.

### 1.3.1 Information to be delivered by the candidate

This information includes a comprehensive **CV of the candidate and a specific form with questions regarding skills and experience of the candidates, which must be filled in**. The questions will address:

- Academic qualifications.
- Experience in R&D and Innovation.
- Experience in Technology Transfer.
- Experience on the sector Industry.
- Relevant complementary training on technology transfer area.

### 1.3.2 Screening of eligibility and suitability

On the 1<sup>st</sup> evaluation phase, the Evaluation Committees evaluates the eligibility and how the candidate fits into the requested profile based on the information provided. As a result a first evaluation ranking has to be presented and supported by the minutes of the final decision meeting, with a clear reference to the criteria that have been used.

Each criteria should be weighted differently according to its importance in order to meet the intended profile. A clear score scale has to be established, preferably from 0 to 5 for each one of the criteria.

The Evaluation Committee, after reviewing all the applications received, makes a recommendation (ranked list) to the Selection Committee of each recruiting partner. In case just one committee is appointed there is no need for this step and this will be the task of the Selection committee.

The Selection Committee will present the official first evaluation ranking (taking in consideration the Evaluation Committee recommendation and its own evaluation), supported by the minutes of the final decision meeting.

**The candidates with the best curricular evaluation will pass to the 2<sup>nd</sup> phase of evaluation, the interview.**



### 1.3.3 Interviews

Interviews will be carried out on the premises of the recruiting partner from the OFFER in the Selection Committee. The interview is intended to complement the evaluation of the candidate's knowledge on the following domains:

- General knowledge about the recruiting partner.
- General knowledge on the regional, national and international business environment of the sector.
- Knowledge about entrepreneurship, technology transfer and intellectual property.
- Knowledge about Regional, National, European and international R&D and Innovation funding programs.
- Candidate's motivation, dynamism and strategic vision.
- Spoken and written communication skills in English and in the recruiting partner's language.
- Organization and ability to structure an idea regarding the skills requested and envisaged for this topic.

**Each criteria should be weighted differently according to its importance in order to match the envisaged profile.**

### 1.3.4 Decision on the selected candidates: Consensus Meeting

On a **Consensus Meeting**, the Committee (or committees in case two are constituted) decide on the selected candidates. The selected candidates are proposed by each recruiting partner, according to the final evaluation ranking elaborated.

### 1.3.5 Communication of the results

Each of the recruiting partners from the OFFER has the responsibility to communicate the results and the final ranking of the applicants. In the same communication, the selected applicant will be invited to sign the contract and to join the training period. In case of rejection of the offer, to be officially communicated to the Committee by the applicant, the next applicant of the ranking list will be invited.

### 1.3.6 Open call

The open call will be addressed to TB, but will also be disseminated in order to attract potential R&D groups and companies apart from the ones chosen internally by the consortium in order to carry out the pilot activity. The dissemination of the call to other R&D groups and companies guarantees the possibility of opening new transfer routes to TB.

The OFFER partners are responsible for the communication and diffusion of the calls, according to its internal and national rules as they are going to recruit the TBs.

In order to ensure the dissemination of the calls to a wide audience, each partner involved in the building of the transference broker profiles (OFFER and DEMAND) should also publicize it through:

- Specific webpage created in order to disseminate the existence of a transference broker profile recruitment.
- Own websites of the partners.
- Own social media pages (Facebook, LinkedIn, etc...).
- Associated partners.
- Other institutions working on Technology Transfer (Universities, Technological Centers, other R&D entities, TT Associations (ASTP-PROTON, TII, etc.)).
- Publications related to the Cooperation and Technology Transfer activities.
- Others.

The candidate dossier with the definition of the common procedures and rules for the candidates' selection will be available on the specific webpage and all the specific calls prepared by each recruiting partner will be also available on this website.

The call intends to attract and consolidate a network of potential groups and interested companies. The interested groups and companies will not participate in the open call, but a contact form can be enabled and collected to express their interest.

### **3. TRANSFERENCE BROKERS TRAINING**

The Transference brokers Training process will be managed by the partners from the OFFER and the TECHNOLOGY TRANSFER expert. This process will be built through different steps:

- Training material design.
- Training
- Interaction with operative environments.
- Coaching

### 3.1 Training Material design

The material for the training of the transference broker should be created jointly by all the partners with the coordination and supervision of the TECHNOLOGY TRANSFER partner. This partner is responsible to elaborate, with the inputs from all the partners, the training package: training material, case studies, exercises, best practices examples, schedule, organization, etc.

And it will be responsible to send the material to the Transference Brokers one month before the course, in order to level knowledge and understanding in key areas.

The Key areas to be considered are, at least:

- Evaluation of technologies and innovations
- Management of technology portfolios
- Management of business and societal needs
- IP strategy
- IP economic valuation
- Transference strategy
- Building a network
- Marketing for innovative technologies
- New Business models
- Negotiation strategy

### 3.2 Training phases

At the initial stage of their appointments, the TB will receive specific training in technology transfer through two complementary approaches:

***a) Practical or hands-on training at the main host institutions (i.e. recruiting partners):***

The TB needs to learn about:

- The technology transfer activities of the recruiting partners: competences and processes, usual practices, main difficulties and competitive advantages)
- The socio-economic environment.

***B) Formal, on-site workshops:***

The TECHNOLOGY TRANSFER partner will be in charge of the training. This training will have main blocks corresponding to the key areas identified. Moreover, a section dedicated to “training of trainers” will be presented in order to TB learn how to train the personnel of knowledge centers and companies in which TB will work.

The TECHNOLOGY TRANSFER partner will be responsible of all logistics activities necessary for this training, such as the course agenda, local training, training modules and details of the logistics of the course to communicate to the Transference Brokers.

### **C) TB meetings:**

Meetings have to be organized between the TB during the training phase in order to share practices, results and to organize and plan internal workshops and event attendance, etc.

## **3.3 Interaction with the environments**

Each partner will bring interested groups from its region, made up of contacts from the business sector and the knowledge sector (universities, research centers), in order to create a network of synergies between stakeholders, a shared portfolio that collect the demand and the technology offer of each partner environment, joint project proposals and identified public / private financing.

The data has to be distributed to the Transference Brokers by the TECHNOLOGY TRANSFER partner: a list of stakeholder, portfolio of technologies and joint opportunities will be assigned to each TB, the proper contacts will be provided by the partners.

The TB will be responsible for:

- Maintaining the connection between all stakeholders.
- Carry on with the opportunities of technology transfer and collaboration identified by the partners.
- Maintain regular meetings (at least once per month) with each stakeholder in order to identify and update them on existing opportunities of technology and knowledge transfer.
- Identify new opportunities and to carry out all the actions related to these.

The TB broker will be supported by the partners's technology transfer offices. This phase will be reinforced by brokerage activities, such as events and workshops events to facilitate interaction with operating environments carried out by TB and all the partners.

### 3.4 Coaching

In this phase, by the OFFER partners and the TECHNOLOGY TRANSFER partner, it will be evaluated if the TB-operating environment is most suitable and a coach from the partners will be assigned.

#### Analysis of the fit and the coaching needs

During the Phase 1 of the pilot activity:

- It has to be carried out a **TB meeting**.
- **Interviews** have to be carried out with each TB to analyze the progress and results obtained by the TBs according to the expected technology transfer activities.
- Moreover a **report** template can be prepared for TB to detect the barriers and difficulties encountered in evaluating both the match and the pilot in phase 1.

#### Implementation of the Coaching

The results of the previous phase (meetings, interviews and reports on barriers) has to be analyzed and discussed in a meeting among all the partners identifying the role and competences of the COACHES according to weaknesses, barriers or areas that need to be improved.

The coaches can be hired externally if needed and will be assigned to each TB (1 per TB). The coaches will follow the TBs in the pilot action through regular meetings and reviewing the job carried out by the TBs.

## 4. PILOT ACTIVITY MAIN GENERAL IMPLEMENTATION STEPS

In this Pilot activity the main objective is to demonstrate the efficiency of the model.

This process will be built through different steps:

- Pilot phase 1
- Evaluation of phase 1
- Pilot phase 2
- Monitoring of indicators

#### 4.1 Pilot phase 1

The TBs hired by the OFFER partners will start working during 6 months in each environment with specific research groups. Each TB is expected to endogenize the main technologies and available knowledge from each of the research centers (Offer) that have potential to be transferred to the demanding environments. It is expected that each TB identifies a technologies with direct application on collaborative projects likely to create an added value in the value chain and be commercially explored. In this phase the collaboration will be foster to find synergies with other DEMAND partners of the project and to prepare the next step. The TB has to develop a match between offer and demand towards strategic road maps.

Each TB will integrate a working group that will be formed by at least one member of the research group (offer), one member of the demand group and a coach/external expert that will be hired by each offer member and which will receive specific training and orientation from the TECHNOLOGY TRANSFER partner.

The TB's have to be in constant contact with the members of the network. It is expected that each TB enlarges the network by contacting new demanding companies, prepare brokerage events, disseminate information, aiming the generation of new collaborations.

#### 4.2 Evaluation of phase 1

The Pilot phase aims to assure that the technology transference for the market is effective, and so each group should be able to design a road map concerning the pilot experiences of each technology transference environment.

The objective of this intermediate evaluation phase is to determine whether the specific roadmaps established at the beginning of the pilot phase are adequate, and review them, if needed, to improve them.

Each working group, coordinated by the Committee member will evaluate the pilot phase. The vision and experience of the coach/external expert of each TB, that has a specific knowledge of the sector, will be fundamental.

After the evaluation, each TB, supported by the working group, will choose the demanding environment to work during Pilot Phase 2 for 4 months.

The working groups, the pilot phase experience and the road-maps are essential for the demonstration of the sustainability of the model of technology transference.

### 4.3 Pilot phase 2

In Pilot phase 2, the TB shall be working in the DEMAND environment during 4 months, returning afterwards to the initial (OFFER) environment (for 2 months at least).

It is expected that previously to this period, the DEMAND partners have already defined and identified the main technological cluster needs, to ensure that each TB may develop their work. Each TB will collect information about the sector needs, market trends, technology demands, always with the aim to assure an effective technology transference process.

After the 4 months period in the DEMAND environment, the TB returns to the OFFER environment for at least 2 months. During this period the TB should be able to bring all the acquired know-how, share it with each working group, and analyze it, so that the elaboration of the FINAL ROADMAP may be improved in all aspects.

### 4.4 Monitoring of indicators

During pilot phase 1 and 2 predefined indicators will be continuously monitored to assure the success of the pilot experience. The TB, helped by its coach/external expert and activity group will be responsible for the monitoring process.

This task consists of a specific evaluation of all the technical activities and methodologies. It will also provide important information on weaknesses and strengths of the project.