

Study on the potential demand for Technology Transfer Services for companies in North-East Region of Romania

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Methodology and Results

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Objectives versus needs of SMEs

Objectives

- **Business development**
 - New **products** with new **functionalities**
 - New **clients** and new **markets**
- **Internal company development**
 - Improve **quality** of existing products
 - Reduction of **costs**

Needs

Knowledge

Contacts

Financing

Management

Equipment

Qualified
personal



How can I&TT helps? – Innovation perspective

Internal solutions

Knowledge

- R&D department
- Production

Contacts

- Marketing
- Selling

Financing

- Stakeholders
- Capital

Management

- Executive Management
- Innovation Manager

Equipment

- Production machines
- Testing equipment

Qualified personal

- Internal training
- ...

External solutions

R&D consultancy, feasibility tests, prototyping, co-creation, TO/TR, Licensing, Tech. Scouting

Matchmaking events, networking support, I-Partnership agreement

Public funding, Joint Venture

Business plan support, Management of RDI projects, IPR

Living labs, Fablabs, Manufacturing agreements (subcontracting & co-contracting)

Open Innovation Trainings

I&TT phases

Awareness raising

- Events
- Workshops
- Communication campaign
- Company visits
- Trainings

Analysis of needs

- Innovation audits
- Business consultancy
- Survey, interviews
- ...

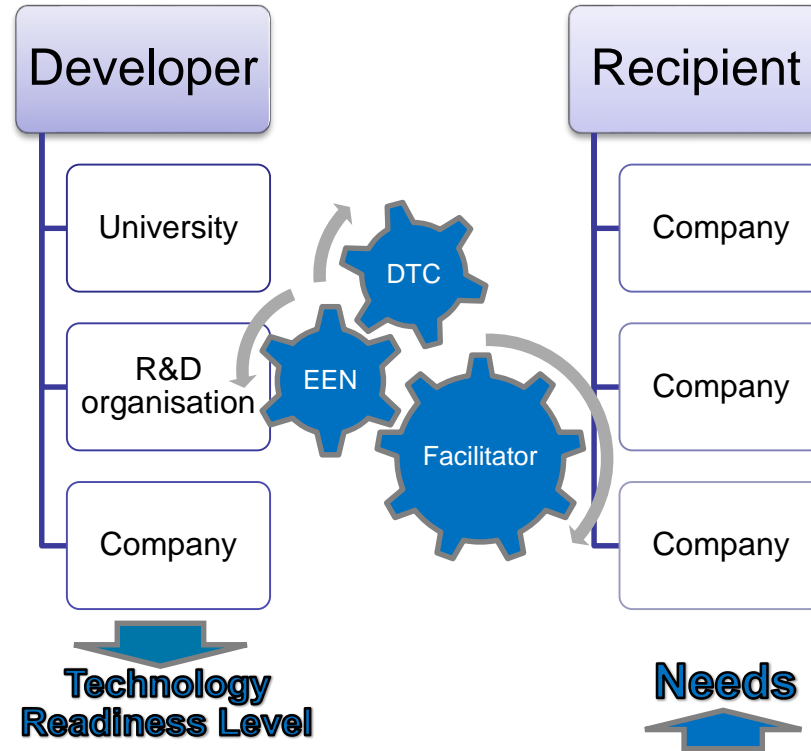
Matchmaking

- Brokerage events
- TO/TR database
- Technology scouting
- Innovation partnerships
- Platforms, networks

Implementation

- R&D consultancy, R&D contracts
- Innovation funding
- Innovation management (training, coaching, mentoring)
- Trainings
- Living labs, Fablabs

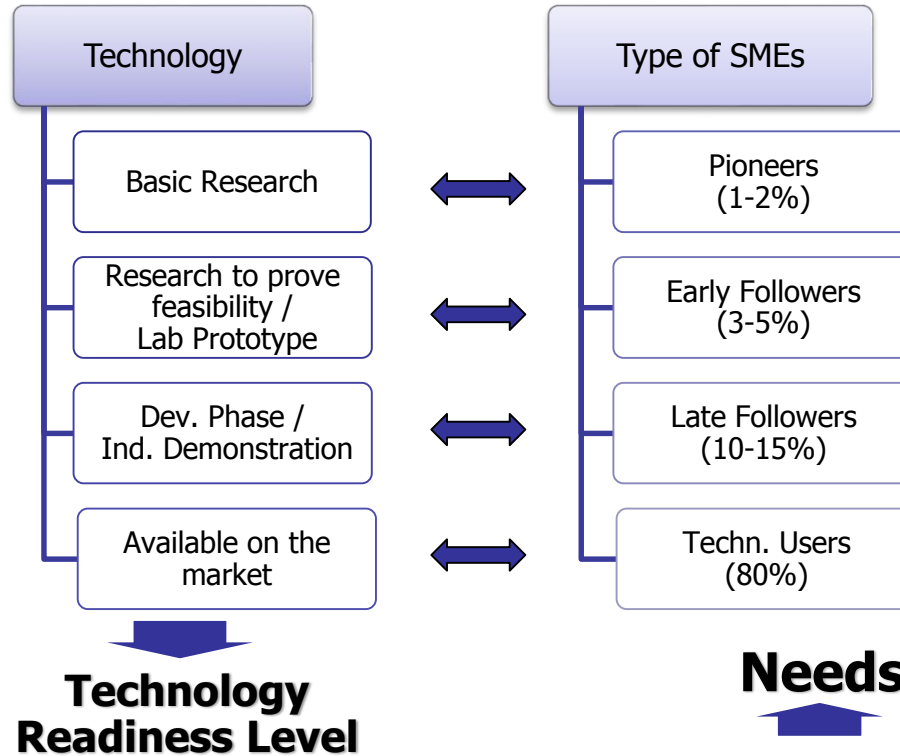
Actors



Build the bridge



Capacity of R&D organisation to transfer new knowledge



Capacity of SMEs to absorb new knowledge

What has been done ?

North-East region

1. **Survey on companies' needs** on ITT services – 780 companies (April – July 2017)
2. **Survey on TT structures** offering innovation and TT services – 10 organisations (April – July 2017)
3. **Peer review visit** – September 5th & 6th in Karlsruhe and Stuttgart Germany with 10 German TT organisations
4. **FDI workshops** – July 25th & 26th Pietra Nems

Next steps

North-East region

1. **Final analysis of the survey on companies' needs** on ITT services – 780 companies (October 2017)
2. **Final analysis of the survey on TT structures** offering innovation and TT services – 10 organisations (October 2017)
3. **FDI roadmap** – (October/November 2017)

North-East Region

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Preliminary results

North-East region

1. **Survey on companies' needs** on ITT services – 780 companies (April – July 2017)
2. **Survey on TT structures** offering innovation and TT services – 10 organisations (April – July 2017)
3. **Gap analysis**

Survey on companies' needs on I&TT services – NE region

- **Profile of companies**

- **783 companies** have participated to the survey - 96% of the companies are established companies older than 5 years – all sizes of companies are represented (<10, 10-50, 51-250 and >250 employees)
- **Economic sectors** represented: Agro-food, Bio-Tech, Environment, IT&C, Textiles & Clothing, Tourism

Objectives of companies – NE Region

Five objectives have been appointed by more than 60% of the companies.

- **Three objectives related to internal development of the companies:**
 - (i) To reduce production costs (75%)**
 - (ii) To improve the quality (68%)**
 - (iii) To reduce energy consumption (65%)**

Especially in the sectors Agro-food, BioTech and Environment the improvement of the product quality, the reduction of production costs by reducing the use of raw materials and the energy consumption is a higher priority compared to the other sectors.

The improvement of the product quality is also a stronger priority in the IT&C sector.

Objectives of companies (2) – NE Region

From a **business development** point of view, the objectives are

- (iv) **To develop the company's network (75%)**
- (v) **To reach new markets (63%)**

The objective to 'enter new markets' is of higher priority in the sectors Agro-food and Biotech compared to the other sectors (§ 3.2.1.2).

Concerning R&D activities, the objective to increase of R&D activities is especially strong in the sectors of IT&C (52%), Environment (40%) and Biotechnology (38%) compared to an average of 26% considering all sectors.

RDI Partnership – NE region

- **Only around 10% of the companies have a RDI partnership, representing 85 companies.**
 - At regional and national level mainly
 - **Only one** of these companies has cooperation at international level - **A focus on the support of international RDI contacts is necessary.**
- **In the ICT and BioTech sectors the highest percentage of companies have already partnership in the RDI domain. The lowest percentage is in the domain of Tourism.**
- **From the companies not having RDI partnerships yet, more than 46% have the interest to join RDI projects. This shows a big potential for new partnerships and the necessity to have support organisations which help to initiate and organise the matchmaking between offer and demand in the domain of new technologies and innovation for companies.**

Survey on companies' needs on I&TT services – NE region

- **Demand for I&TT services – 3 groups**
 1. The main support services needed from more than 40% of companies are in the domain of the ***recruitment of technology qualified personnel, innovation financing, business support and databases.***
 2. Around 25%-30% of the companies are looking for support for ***research contract, innovation management, brokerage events, technology assessment*** and *contacts for innovation partnership.*
 3. Only 17% need support for IPR issues or other types of services (11%).

The strong demand in the first group for technology qualified personnel, innovation financing and business support is even higher in the sectors **environment, agro-food, biotech and IT&C.**

Survey on companies' needs on I&TT services – NE region (2)

Possible Answer to the Demand for I&TT services in 1st group

- This strong and diversified demand can be answered in a first step by **specific RDI consultancy projects**, which are flexible and adapted to the specific need of the company.
- Although this type of services is offered by all the RDI organisations in the region, the demand from the company is still high. This reveals an **existing gap**.
- This situation can be improved by **two type of measures**:
 - a focus on awareness, analysis of needs and matchmaking phases is necessary
 - also more dedicated resources should be available at the RDI organisations.

Survey on companies' needs on I&TT services – NE region (3)

Possible answer to the demand for I&TT services in 2nd group

- **A gap can also be observed in the 2nd group of services. Especially middle size companies with 51-250 employees have a stronger demand compared to the other categories for support services of the 2nd group in the following domains:**
 - **Research contract** (43% compared to an average of 31%)
 - **Innovation management** (41% compared to an average of 31%)
 - **Brokerage events** (41% compared to an average of 29%)
 - **Technology assessment** (33% compared to the other categories)

This shows that middle size companies with 51-250 employees should be considered as a major target group.

Survey on companies' needs on I&TT services – NE Region (4)

- **Focus on specific economic sectors** - environment, agro-food, biotech and IT&C
 - **Research contract** - environment, agro-food and ICT (40%-43% compared to an average of 31%)
 - **Innovation management** - environment, agro-food and ICT (39%-47% compared to an average of 31%)
 - **Brokerage events** - environment, agro-food and biotech (40%-42% compared to an average of 29%)
 - **Technology assessment** – ICT, environment (38%-44% compared to the other categories)

Survey on companies' needs on I&TT services - NE Region (5)

- **Long term vision on innovation**
 - **Product innovation**
 - 54% of the enterprises have a long term vision on product innovation
 - The demand for **product innovation** is especially strong in the sectors **Agro-food** (70%), **Biotech** (75%) and **Textiles & Clothing** (76%)
 - **Service innovation**
 - The vision concerning **service innovation** is strongly present compared to product innovation or R&D activities. Nearly 68% of the companies declare to have a long term vision for innovative services.
 - Especially in the domain of **Tourism, IT&C and Environment**
 - Focus on **micro-enterprises** (<10 employees) with **nearly 80%**
 - **R&D activities**
 - 40% of the companies have a long term vision on R&D activities, which is less than for the two other domains, but still shows a strong potential corresponding to approx. **300 enterprises**
 - This especially the case in the sectors IT&C (56%), Biotech (50%) and Environment (49%)

Survey on companies' needs on I&TT services - NE Region (6)

- **Main drivers and barriers to use new technologies and R&D knowledge in products or services**
 - **Drivers**
 - Increase performance of existing products / services (67%) – especially in the sectors Textiles & Clothing
 - Increase productivity and competitiveness (67%)
 - Reduce manufacturing costs (63%) – especially in the sectors biotech and environment
 - **Barriers**
 - Equipment costs (63%),
 - Qualified staff costs (45%)
 - Raw material costs (35%)
- This shows the **necessity to have test facilities and FabLabs with shared infrastructures and qualified personnel as service platforms** which can be contracted by the companies. An Individual company cannot afford the necessary investment. The financial risk is too high.

I&TT services offered by RDI organisation - NE Region

- **10 RDI organisations:** 3 universities, 7 research organisations, from which 1 define itself as an SME
- The highest number of research organisations are active in the sectors **agro-food, biotechnology** and **environment**. They have expertise in the following technological fields: advanced materials, nanotechnologies and industrial biotechnology.
- Their activities covers different **Technology Readiness Level (TRL)**. They are mainly active in the range of TRL1 to TRL4 covering fundamental research, proof of concept and validation in the lab. Very few organisations are active in TRL 5 to TRL 7 and none of them in TRL 8 and TRL 9.
- Companies are looking for support in high TRL, like TRL 5 to TRL 9 dedicated to validation, demonstration and qualification of technologies and systems in an industrial or operational environment. **This shows a gap in the offer of I&TT services.**

I&TT services offered by RDI organisation (2) - NE Region

- **All** I&TT organisations of the NE region which have participated to the survey propose services in the domain of ***Scientific & technological Advice/Expertise/Consultancy***.

Around **50%** of the organisations offer services for:

- **Company visits**
- **Innovation partnership agreements**
- **Proof of concept / Lab testing of basic experimental set-up/ Characterisation**
- **Component/ process development & testing**
- **Project management of Research and Innovation projects**

Between **30% and 40%** offer services for:

- **Awareness raising events**
- **Feasibility Study / initial design / Simulation**
- **Prototyping (integrated system/ sub-system) development & testing**
- **IPR & Knowledge Management support**
- **Co-creation services**

Less than 30% offer services for:

- **Innovation audit**
- **Matchmaking events, brokerage events**
- **Networking support**
- **Living Labs and FabLabs / Pilot line/ demonstration line/ pre-series fabrication**
- **Product validation / certification**
- **Business plan support**

I&TT services offered by RDI organisation (3) - NE Region

A deficit of services is especially high in the two last categories of services.

On the other side these services like matchmaking events, brokerage events, networking support and Living Labs and FabLabs /Pilot line/demonstration line/ pre-series fabrication or Product validation / certification are very important for companies.

Deficit of services in the I&TT phases in NE region

Awareness raising

- Events
- Workshops
- Communication campaign
- Company visits
- Trainings

Analysis of needs

- Innovation audits
- Business consultancy
- Survey, interviews
- ...

Matchmaking

- Brokerage events
- TO/TR database
- Technology scouting
- Innovation partnerships
- Platforms, networks

Implementation

- R&D consultancy, R&D contracts
- Innovation funding
- Innovation management (training, coaching, mentoring)
- Trainings
- Living labs, Fablabs
- Product validation / certification
- Co-creation
- Feasibility study, Prototyping

Deficit of services in the I&TT phases in NE region (2)

The **awareness raising** phase is not sufficiently developed. The companies need more information and an overview of the services offered, **especially SMEs**

The services of **innovation audits** to analyse the specific needs of the companies is missing.

More **matchmaking events** and support for **new contacts** in different networks are necessary to be more extended.

In the **implementation phase services** on product validation & certification, feasibility study & prototyping and co-creation in the frame of FabLabs or Living Labs should be further developed.

Gap analysis

Gap analysis (1) – NE Region

Three objectives related to **internal development** of the companies:

- (i) To reduce production costs (75%)
- (ii) To improve the quality (68%)
- (iii) To reduce energy consumption (65%)

The objectives related to the *internal development* can be addressed mainly by **process innovations**. The following I&TT services in the categories “*Knowledge*” and “*Equipment*” can support them:

- *R&D consultancy* and *simulation* on quality improvement and smart production e.g. to reduce production time and energy consumption
- *Process development and testing*
- *Living labs, Fablabs* to test the quality and the new production steps

How can I&TT helps? – Innovation perspective

Internal solutions

Knowledge

- R&D department
- Production

Contacts

- Marketing
- Selling

Financing

- Stakeholders
- Capital

Management

- Executive Management
- Innovation Manager

Equipment

- Production machines
- Testing equipment

Qualified personal

- Internal training
- ...

External solutions

R&D consultancy, feasibility tests, prototyping, co-creation, TO/TR, Licensing, Tech. Scouting

Matchmaking events, networking support, I-Partnership agreement

Public funding, Joint Venture

Business plan support, Management of RDI projects, IPR

Living labs, Fablabs, Manufacturing agreements (subcontracting & co-contracting)

Open Innovation Trainings

Gap analysis (2) – NE Region

Two objectives related to **business development** of the companies:

- (i) To reduce production costs (75%)
- (ii) To improve the quality (68%)
- (iii) To reduce energy consumption (65%)

The objectives related to the *business development* can be addressed mainly by I&TT services in the categories “*Contact*”:

- *Awareness raising events*
- *Matchmaking events, brokerage events*
- *Networking support*
- *Innovation Partnership Agreement*

How can I&TT helps? – Innovation perspective

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Knowledge

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