

WP III – Transfer of Methodology: Knowledge for competitiveness

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FOREWORD

It's well known that the interaction process between firms, above all small and medium enterprises (SMEs), and public research centres represents one of the crucial aspects in order to strengthen the competitiveness of a territory. Less developed areas are featured by weak cooperation levels between research and firm, thus fostering and supporting interaction process is a priority for the Hybrid R&D Centres operating in these areas. In fact, in these areas interaction does not occur in a spontaneous and ongoing way because of the existence of several barriers.

These barriers are of different nature and can be linked to several factors

- a) **Companies characteristics** (lack of technological competence, low or inadequate awareness of their technological needs, difficult to monitor the progress of scientific research, scarce attention to innovation, scarce confidence in the research as possible answer to their needs, etc.);
- b) **research team characteristics** (oriented to “academic” rather than to “applied” research, scarce motivation to interaction, lack of sufficient links with the territory, etc...);
- c) **lack of a context that foster and facilitate know-how exchange** (misalignment between productive environment and know-how offer, absence of innovative productive activities, lack of adequate policies, scarce aptitude to cooperation, cultural obstacles, etc.).

In presence of such barriers interaction between firms and research teams can hardly be conceived and analysed in terms of know-how transfer from a *knowledge provider* to an *user*. According to the transfer perspective, technology and knowledge can be seen as objects that can be transferred following unidirectional top-down pattern and in ways that are independent from the context where interaction takes place. This perspective is useful to describe how interaction takes place in areas in which firms have a high awareness of their technological needs and a good knowledge of the local public research offer, which, on the other hand, is lined up and responsive to firms needs and requests. Consequently, in such areas transfer can be defined as the encounter of explicit demand and explicit offer of technology.

Adopting an alternative perspective and defining know-how as fluid of experiences, values, contextual information and facts which provide a structure to evaluate and incorporate new experiences and information, technology can be considered as a social object, developed in a specific context and influenced from needs of specific social groups and built through repeated cycles of interaction between designers and users. In this perspective, the possible transfer of research results requires that the actors involved have developed during the interaction a sufficient degree of interpretative alignment. The alignment is based on a number of shared values and on a common languages developed by a same technological community. So, transfer can be seen as a process that originates in a natural way thanks to the existence of a *common ground*, a collective *discourse* built up through time and in an ongoing evolution through which the actors create meanings and know-how, share values and languages, exchange resources and knowledge within a *dense* network of people characterized by roles and complementary expertise. In other words, the construction of a common ground depends on the establishment of a *grounded interaction processes*. We mean grounded interaction as a dynamic and ongoing interaction process that presents the following characteristics:

- a) Dynamic evolution and progressive consolidation relationship in which two or more actors are involved;

- b) Focus on the development of solutions for specific problems;
- c) Collaborative relationships in which the research team and firm work together;
- d) Gradual alignment between problem and solution;
- e) Exchange and creation of know-how rather than sole application of pre-existing knowledge;
- f) Mutual learning among involved actors.

The creation and development of grounded interaction processes require a satisfying degree of alignment between who offers research and knowledge and who needs it for making services or products. Lack of alignment causes a vicious circle: the beginning gap between actors hinders the starting of stable and ongoing interaction processes, and lack of interaction hinders the gap reduction between offer and demand of knowledge.

The main assumption made in this note is the following: if misalignment between researchers and entrepreneurs is reduced through suitable actions, intensity and quality of interaction between these actors will increase.

At this aim, it is necessary to take account of factors influencing interaction between firms and research teams, literature highlighted.

RESEARCH TEAM

Background

Belonging to research applied sector rather than a research base sector implies a positive influence on collaboration potential of interaction

Experiences of collaboration with firms

Great experiences of collaboration with firm implies a positive influence on collaboration potential of interaction.

Research finality

Perception research not only in terms of scientific accumulation and popularization but also in terms of possible application in industrial sector implies a positive influence on collaboration potential of interaction.

Work Organization

A less anxiety about carrier, publication and better time distribution among academic carrier and collaboration with firm implies a positive influence on collaboration potential of interaction.

Benefits perception

Perception of possible benefit, both in economic terms and knowledge terms, derived by a collaboration with firm implies a positive influence on collaboration potential of interaction.

Structures and resources

The presence of management transfer office or department, of technical and administrative resources, of a network among several research departments implies a positive influence on collaboration potential of interaction.

Exogenous incentive

The presence of policies which stimulate the development of interaction implies a positive influence on collaboration potential of interaction.

COMPANY

Presence of internal research team

Presence of R&D department of technologists within the firm which can interact with research team implies a positive influence on collaboration potential of interaction.

Previous experiences of collaboration with universities/research centres

Great experiences of collaboration with research centres implies a positive influence on collaboration potential of interaction.

Benefits perception

Perception of possible benefit derived by a collaboration with research centres implies a positive influence on collaboration potential of interaction.

Environmental context

Operating in a context characterized by the proximity to great research centers and to universities, in which firms are membership of a network, of a firms' cluster, of an industrial district implies a positive influence on collaboration potential of interaction.

OBJECT OF INTERACTION

Alignment between contents of research and firm needs

Alignment between the research results and the real technical needs of the firm implies a positive influence on collaboration potential of interaction.

Life cycle of research

This factor indicates the research life cycle phase: early stage, planning stage, prototyping stage, experimental stage, industrialization stage. Its positive influence depends on the kind of research's state that the firm needs.

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