

Joint R&D projects: Experiences in the context of European technology policy

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Abstract

Joint R&D projects have emerged as a significant model for the development of research and technological activities. Our study examines, through an exploratory analysis, the typology of joint R&D projects and the characteristics of R&D networks in which the projects are developed. In addition, the interrelation between the R&D projects in the context of European Technology Policy is analysed. Findings from survey data collected on joint R&D projects carried out in the context of European Framework Programmes indicate that three groups of R&D projects can be identified (invention, innovation and diffusion projects), and that each of these projects is managed inside the R&D network with a different degree of structuring and external opening. The analysis of interrelations between R&D projects also shows a low, non-linear and non-progressive interrelation. This conclusion is an important question to bear in mind in the design of scientific and technological policies.

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1. Introduction

Research and development (R&D) collaboration has been widely promoted lasting recent years as a means for improving industrial competitiveness, reducing technological gaps among countries and regions, strengthening the scientific base of the system through the establishment of close relationships among economic actors, and influencing technical change.

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Table 1
Budget of framework programmes (Million ECU)

Programme	Years	Budget
1st F.P.	1984–1987	3750
2nd F.P.	1987–1990	5396
3rd F.P.	1990–1994	8825
4th F.P.	1994–1998	13,215
5th F.P.	1998–2002	14,960*
6th F.P.	2002–2006	16,270*

* Million euro.

The EU Framework Programmes funded by the European Commission have played an important role in setting favourable conditions for the enlargement of R&D co-operation by the development of European joint projects [1]. The budget of Framework Programmes (see Table 1) covered all the research and technological development activities during the reference period.

Our paper tries to provide answers to several questions on joint R&D projects developed within the framework of European Science and Technology (S&T) Policy.

The first question will be to identify the typology of joint R&D projects. This typology is determined by the technological process (R&D process), in terms of activities, stages and partners that participate in the implementation of these kinds of projects.

Generally, the development of a joint R&D project is supported on a (organizational) structure—the R&D network—whose objective is to organize the technological activities within the project. The characteristics of R&D networks will be studied for each typology of project previously identified according to their structuring degree (from an organizational perspective) and openness degree (from the viewpoint of external technological sources).

The second question raised in our study is whether some interrelation exists between the different technological joint R&D projects identified previously in the exploratory analysis. The interrelation will be studied firstly from a static point of view and secondly, we will study it from a dynamic viewpoint.

An extensive body of literature has mushroomed around collaborative research on the context of the National Co-operative Research Act [2–4], on Japanese government research consortia [5,6] and on sponsored research networks from European Framework Programmes [7,8]. This research has predominantly focused on the context of the creation of the network—the main structural form to carry out joint projects—the member's motivation or the benefits obtained as well as pointing out the active role for promoting industry–university–government co-operation from the different administrations.

Although there is a general emphasis on R&D networks [9–11], there are very few references to the specific nature of the projects developed in terms of results, activities, sequence of process and agents into a joint project.

Research work carried out specifically on R&D processes also tends to focus on explaining the multiplicity of factors and agents which take part in the process and the complex set of linkages and flow between those agents and institutions [12].

The limitation of these efforts is that they do not generalise beyond the facts of the case. Hence, our objective is to show the interactions between the different kinds of R&D projects linking them with the main objectives of the projects.

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