



ELSEVIER

Research Policy 31 (2002) 437–455

research
policy

www.elsevier.com/locate/econbase

Technology and market orientation in company participation in the EU framework programme[☆]

Terttu Luukkonen

VTT Group for Technology Studies, P.O. Box 1002, Espoo 02044 VTT, Finland

Received 14 November 2000; received in revised form 30 January 2001; accepted 26 February 2001

Abstract

This paper will analyse the nature of the EU framework programme, particularly its degree of market-orientation and precompetitiveness, at the time of the fourth framework programme. The paper will show that precompetitiveness as a project or participation attribute is independent of technology or market orientation, where technology orientation means that the motive for participation in the framework programme is learning and knowledge and market orientation means that the motive is based on commercial objectives. Technology or market orientations appear almost equally as basic motivations for company participation in the programme. However, companies usually choose one of the two as their collaboration mode. The paper will further show that the framework programme participation by firms continues to be mainly precompetitive. This is due to the special circumstances and the contract principles of the framework programme. © 2002 Elsevier Science B.V. All rights reserved.

Keywords: EU framework programme; R&D management; Interfirm R&D collaboration; R&D collaboration and IPR; Telecommunication industries and EU research collaboration

1. Introduction

Originally, the EU framework programme, or rather its flagships from the second framework programme onwards, the information technology programme, ESPRIT, and its parallel programme in telecommunications, RACE¹, represented programmes that were supply- or technology-oriented: they had a mission to enhance the competitiveness of European industries by

raising their technological level. The means was collaborative R&D among European information technology firms and public sector research institutes. Joint research was expected to help companies raise their technological knowhow and solve generic research problems that had wide applications across many industrial sectors. The model was originally taken from Japan where it was perceived to be successful (Peterson and Sharp, 1998). In the very beginning, the participating firms in the collaborative programmes were major competitors (see e.g. Peterson, 1991).

Over time, there have been changes in the general objectives and in the emphasis on technology orientation. Today the framework programme encompasses a wide range of targets from cohesion and job creation to the contribution of the programmes to the implementation of the various Community policies (DNO, 1999). In the programme documents, the technology

[☆] This paper was written during my stay as a visiting research fellow at SPRU, University of Sussex, May–June, 2000.

E-mail address: terttu.luukkonen@vtt.fi (T. Luukkonen).

¹ The ESPRIT pilot phase was approved in 1982 and the first ESPRIT programme started in 1984. The definition phase of RACE started in 1985, and the first RACE programme was launched as part of the second framework programme in 1987. ESPRIT and RACE were integrated with the framework programme as of the second framework programme.

or supply orientation has given way to a greater emphasis on diffusion and demand oriented research collaboration. This means helping European companies transfer research results to marketable products and improve their business performance, thus enhancing their turnover and employment (GCE, 1994; GPI, 1995). The extent to which this has indeed happened in programme practice has been little studied.

According to the studies on the impact of the second framework programme, in the early stages, knowledge-related factors, which correspond to technology or supply orientation, motivated the participation of companies (Luukkonen, 1998; Reger and Kuhlmann, 1995). However, the extent to which the above changes in the overall policy aims have influenced the orientation of projects in terms of precompetitiveness and market orientation has not been studied. There are some recent findings indicating that firm participation in the framework programme has been somewhat more motivated by commercial objectives than before (Ohler et al., 1997; Luukkonen and Hälikkää, 2000). We still do not know whether this signals a fundamental change in the orientation of the framework programme.

2. The research problem

This paper will analyse the nature of the framework programme, particularly its degree of market-orientation and precompetitiveness, at the time of the fourth framework programme. Precompetitive research, that is research which is a few years removed from the market phase², was an important part of the original collaboration model of the framework programme. The research to be funded was expected to advance the competitiveness of European industries in general and not that of individual firms. Generic research carried out by firms and by public sector research institutes was the medium to advance this goal. This model implied that the research to be carried out was to be precompetitive. Near-market research is confidential and

advances the interests of individual firms and therefore, it could not be funded from the public purse. Given the fact that programme goals have emphasised market orientation and implementation of knowledge for economic applications, the major research question in this paper is whether this has led to near-market research at the cost of precompetitiveness.

A related question concerns the circumstances under which firms can collaborate with their competitors in EU projects, as was the starting point in the very early stages in the big information technology programmes. Even though sharing knowledge is clear in principle, in practice firms have to solve many problems related to the extent to which background and foreground knowledge is shared. There are also fears concerning knowledge leakages, and intellectual property right issues have to be solved (Luukkonen, 2000). My previous studies of EU collaboration have shown that companies have reservations about embarking upon collaborative R&D with their competitors. This paper will explore the willingness of companies to collaborate with their competitors in different types of R&D in terms of their degree of precompetitiveness versus near-market research.

The analysis of this paper is based on the underlying notion that the innovation process takes place in a complex and ever-changing environment, and therefore involves uncertainties and risks. Companies solve research and research management problems through 'trial and error', or put in another way, through 'learning' and 'experimentation' (Patel and Pavitt, 1997). In order to gain access to new knowledge they also experiment with R&D alliances with outside organisations. R&D collaborations are not a new phenomenon. However, there are indications that R&D collaboration with outside organisations, other companies and research organisations, is an increasing trend, particularly in the information and biotechnology sectors (Hagedoorn and Schakenraad, 1990). R&D collaboration has many benefits and is seen as a positive factor for the success of the innovation process: firms may achieve economies of scale, search for new market opportunities, accelerate the innovation process, achieve complementarities, and utilise spill-overs of R&D within the consortium (Freeman, 1991; Hagedoorn and Schakenraad, 1990; Teece, 1992; Sakakibara, 1997). Collaborative R&D also involves special costs, and this is why companies

² The first EU Science and Technology Indicators Report defines the term precompetitive as "RTD activities that private and public companies carry out together, before developing and selling their own product separately" (The European Report, 1994). Managers' views on what constitutes precompetitive research in practice may differ and therefore this concept should be used with caution.

متن کامل مقاله

دریافت فوری ←

ISIArticles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات