

## Grants for collaborative R&D

Collaboration among firms and between firms and universities can help coordinate R&D agendas and avoid duplications, while exploiting synergies and complementarities to solve complex challenges by sharing skills, equipment and datasets. Collaborative R&D reduces firms' financial and technical risks, and increases spillovers, R&D commercialization, and the relevance of research carried out in public institutions.

However, there are several barriers that hamper collaboration. Some firms perceive that collaboration will not bring significant benefits and others have concerns about disclosing proprietary knowledge. In the case of collaboration with universities, there is often a mismatch between the research orientations of firms (short-term, applied R&D) and universities (long-term, basic R&D). There are also information asymmetries and transaction costs in the process of finding the right partners and negotiating collaboration agreements. These barriers provide a strong rationale for policy intervention to promote collaboration in R&D. The provision of grants for collaborative R&D is one of the main approaches for doing so.

Grants for collaborative R&D may take many different forms:

- They may focus on collaboration between specific actors, such as university-industry collaboration, collaboration between large firms and SMEs, and collaboration between local and multinational companies, etc.
- They may also focus on different types of R&D collaboration. Collaboration may be formal or informal, with the former related to equity partnerships, contracts, research projects, patent licensing, etc., and the latter associated with human capital mobility, publications, interactions in conferences and expert groups, consultations, etc. (Hagedoorn et al., 2000).

Grants may also focus on long-term or short-term projects:

- Short-term collaborations generally entail a specific R&D project with predefined results and commercial value. Grants to support these "collaborative research projects" are generally provided for one to three years and require co-financing by firms. Another alternative to foster short-term collaboration is to offer "[innovation vouchers](#) [1]" to firms (i.e. small lines of credit to purchase services from universities and public research institutes).
- Long-term R&D collaborations are more strategic and open-ended, and often result in the formation of "collaborative research centers" among partners. These centers contribute to increasing the efficiency of R&D in strategic areas through resource concentration, pooling skills and promoting research excellence. They are often located at universities and are also called "competence centers" or "centers of excellence". Public grants to support collaborative research centers ideally have a time horizon of around five to ten years, although the continuation of the grant may be subject to interim evaluations. In many such programs, public funding covers the costs for the university or public research institute, while firms pay their own costs but have more capacity to exploit the commercial returns.

Grants for collaborative R&D are awarded by innovation promotion agencies through regular tenders and peer review-based selections. The grant contract and partnership agreements generally include provisions relating to the intellectual property resulting from collaborative R&D. Given their long-term nature and the uncertainty involved in R&D projects, programs to fund collaborative R&D need to rely on ongoing monitoring and evaluation systems. Interim reviews are a useful instrument to

ensure that progress is on track and to take corrective actions when necessary, including a possible termination of the contract. Despite their advantages, monitoring and evaluation are costly and burdensome to participants, so it is important to avoid excessive bureaucracy. On the other hand, monitoring and evaluation systems should be flexible to accommodate for unexpected changes in the project's orientation as well as changes in the framework conditions. It is also critical to build feedback loops between evaluation and program design, so that appropriate reforms are introduced and subsequent calls for proposals are designed more efficiently.

Cross-country evaluations suggest that grants encourage firms to engage in more collaboration in R&D projects, both by deepening existing partnerships and initiating new ones (Cunningham and Gök, 2012). Another measure of success is in collaborations that continue beyond the participation in a public funded project. However, many of the benefits arising from collaboration are intangible and impossible to capture with simple metrics.

## References

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