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Results assessment and impact creation in collaborative research—An example from the ECOLEAD project

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Abstract

Assessing research progress and results in collaborative projects is a rather difficult subject for which there are no clear effective methods, and yet researchers are accountable to their funding sponsors. Based on some experiences with European projects, this paper contributes to the discussion of assessment methods and their limitations in the case of collaborative projects. The impact creation process is also analyzed and linked to the assessment process.

Keywords: Impact creation; Research assessment; Collaborative networks; Collaborative research

1. Introduction

During last decades a considerable investment has been made in collaborative research in Europe. As a result of the research programmes of the European Commission (EC) the pattern of the research process fundamentally moved from isolated excellence groups and large regional heterogeneity to a strong network based cooperation with higher opportunities for all independently of geographical location. The quality of most research groups clearly increased thanks to the international exposure. Much stronger links between academia and industry were established, creating a dynamic breeding environment for collaboration research.

Doing research in a collaborative framework, involving actors with very diverse goals, working methods, and cultural background brings an added dimension of complexity, in addition to the challenges of the research subject itself. The success of any collaborative project depends, to a large extent, on the effectiveness of the coordination principles and the established operational mechanisms for monitoring and assessment. This is even more delicate in the case of large collaborative projects due to the size of the consortium, comprehensive scope, and geographical and cultural diversity of partners.

When it comes to assessment of research projects, most methods and metrics were developed with the focus on activities being carried out by a single group/organization. There is a need to better understand the characteristics of the collaborative research process in order to design methods and metrics that better fit this reality. The notions of impact and effectiveness of research taking place in a distributed multi-organization context clearly need a different understanding.

This article intends to be a contribution to a better characterization of the impact creation process in collaborative research projects.

2. Evaluating research

Research is the driving force of modern society. To a great extent the quality of research determines the future. Clearly a society that aims to play a leading role needs to not only invest on research programs but to also carefully monitor progress and assess the impacts of the various research initiatives.

Evaluating research is however a difficult subject for which there are no clear effective methods, as recognized by many authors. In fact the impact of research may not

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occur until years later. This is one of the reasons R&D is often treated by companies as a "cost generating" center. The created impact also depends on a number of external factors not under control of the research community. Therefore, to evaluate an R&D initiative we should mainly measure the creation of capabilities and the capacity produced or induced by research, i.e. the potential for creating impact.

But what is the purpose of evaluating a research project? Assessment is not only a way to ensure accountability, but also an instrument to help projects keep on track. In this sense, and specially in the case of a joint investment initiative, like the EC funded projects in which resources come both from an EC grant and partners own investment, experience shows that it is very important to devise evaluation methods that are constructive rather than punitive (McEachran and Askew, 2001). In other words, research evaluation shall be a process that tries to give valuable indicators to the project coordination, namely in terms of assessment of directions and practices, and to create incentives and challenges for the participants to excel and continuously strive for innovation. A proper assessment can also be a way to identify additional added value that the researchers did not identify at first (McEachran and Askew, 2001). In this context, an evaluation process that would only convey a punitive message, even unintentionally, would be rather inappropriate and may even cause the risk of expensive disruptions and a potential unsuccessful end.

Europe continues to loose ground in comparison with the USA and Japan. In fact the 2003 edition of the European Innovation Scoreboard, confirms that—on almost all measures for which comparable data is available—the EU's innovation performance remains significantly weaker than that of the United States (Baglieri et al., 2001). This problem is not only due to the amount of the investments and directions of strategic research programs but, perhaps to a large extent, this is also due to the traditional monitoring/assessment methods being used. These methods have been, in most cases, driven by an immediate, short-term economic perspective which, very often, seems to lack attention to the research dynamics and R&D impact creation processes, and thus not in the spirit of risk taking, what is inherent in research leading to innovation.

As pointed out by Mr. Brinkhorst, the Dutch Minister of Economic Affairs, in the informal Competitiveness Council in Maastricht (Cordis, 2004): "in the USA everyone understands that when someone takes a risk, there is the possibility of failure, while in Europe if we take a risk and fail we are almost criminalized". It is interesting to note that all EC funded projects claim to be very successful. It is almost impossible to ever listen to lessons learned with some failures in these projects. We need to change the mindsets in Europe towards more innovative approaches, being able to accept and also learn from failures that are inherent to risk taking.

As presented, this forced image of "full success" is totally in disagreement with a common view of the "funneling" process represented in Fig. 1.

According to this traditional view, it requires hundreds of research projects in order to end up with one successful development which results in effective commercial exploitation. It shall, however, be noted that this view is too reductionist as it ignores and does not present a large number of other results and impacts that surrounds these efforts, e.g. the increased level of knowledge and experience, training of higher quality human resources, new ideas for other developments, creation of links among organizations, etc., which are also indirect impacts and drivers for economic development.

Furthermore, it is important to note that research often goes beyond the anticipated boundaries, resulting in new directions. In other words, not all results come from systematic planning as in traditional engineering. In research there is an element of "trial & error and unpredictability" that needs to be respected and valued.

A discussion of these issues becomes particularly relevant when Europe, through its sixth Framework Program, is focusing on larger projects, the so-called Integrated Projects, with the ambition of having a large impact on selected target areas. In the case of the Integrated Projects, which typically involve around 20 partners each and represent a substantial investment both

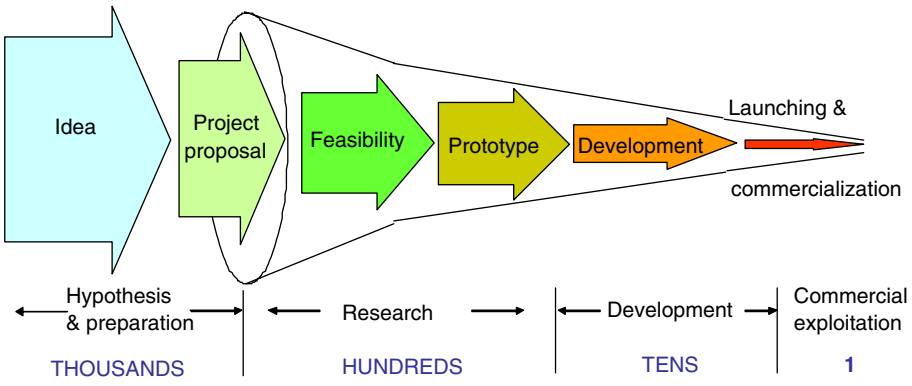

Fig. 1. From research ideas to commercial results.