

The "Fuzzy Back-End" of Collaborative R&D Projects

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In a recently accomplished research project (www.innovationimpact.org), itself a collaborative effort, we analyzed, among many other things, qualitative data on the final phase of publicly funded collaborative research projects (under the EU FP5 and FP6 frameworks). Interviews were conducted in 70 organizations - companies, research institutes and universities.

Concerning dissemination, opinions among interviewees ranged from "a core activity" (by definition in the research organizations) or "very important for image building" (among larger companies) or still "an opportunity to make ourselves known" (among SMEs), to "an activity without substance" or "a half-hearted and insufficient effort to reach a market" (firm examples irrespective of size). Hence, interviewees in general had opinions about the issue of dissemination, while in terms of continuing the project beyond the formal deadline and the end of the public funds the picture was quite blurred. In the absence of a formalized post project evaluation with the objective of analysing and thinking over the pros and cons of the project (which is a rule in larger firms when it come to commercial R&D projects), it seems that what actually happens after the moment that "the project just ends" is quite random.

Some partners might decide to form a 'couple' for exploiting further some of the results without necessarily informing the other partners, let alone the EU about this. In other cases, partners seem to roll the ball between them, expecting that the other part will take the next step towards some kind of suite of the project efforts; "now we wait for them to come back with some ideas for how to take this further" as one interview expressed it. It also happens that EU project 'n' generates the conditions for a proposal for EU project 'n+1', which, if leading to accumulated knowledge or a further exploitation of the results, can be seen as the most positive outcome of a project. In other cases still, a project result might be exploited by one partner together with some other organization who was not part of the initial project. If perceived a little bit as a 'failure' from the perspective of the project consortium e.g., the other partners were not interested or competent enough to take the step towards commercialization, it could in practice be even a greater success due to a still broader dissemination of the project results seen from an external perspective.

The above shows that one indeed can talk about a "fuzzy back-end" of the EU funded RTD projects, paraphrasing the more established concept of the "fuzzy front-end" of R&D and New Product Development¹. The problem is that the "back-end fuzz" is about confusion concerning the exploitation of the results and not about a breeding ground for creativity as it is in the front-end. In some instances, interviewees blamed the rules of the funding instruments for allowing for too much of free interpretation of what a successful end-of-project phase means, and for allowing for legal problems to surface too easily. The back-end fuzz is also a major reason behind the fact that even well-managed projects might 'stumble' towards the end and therefore fail to produce any significant innovation impact. Legal issues can create last minute conflicts about exploitation rights for instance, if the rules of the instrument and the agreed procedures prove insufficient when the bottomline is about who will make a profit from the project output. In other instances, the lack of understanding or anticipation of regulatory issues can lead to the outcomes remaining on the shelf in spite of clear initial goals for commercialization and satisfactory technology and knowledge results. Another example of the back-end fuzz can be if a product innovation fails because when commercialization is engaged, partners realize that other supporting technology or system components needed as complements for the use of the innovation produced are missing in the targeted market.

Based on the above, the critical threshold that has to be overcome, before the project consortium splits, is to substantially plan for how to take the outcome further, including taking it towards commercialization. Unfortunately, many projects end up in a kind of dead-end with respect to commercialization, as companies sometimes find themselves in a position that one interviewee summarized as follows "As a profit-making company we have to master the entire chain of research, development and commercialization. But when it comes to EU projects, we can only open up the development part [for competitive reasons]. Then, as the technology is often cutting edge, we end up doing some quite limited testing and concluding that it might be commercialisable later but neither we nor the labs developing the technology are in a position to take it any further. Then the project ends".

The solution for many company interviewees would be to assist the research institutions in creating spin-offs for exploiting the project findings. On the other hand, research organizations roll the ball back to the companies, saying that exploitation is not the role of the ROs. Hence, our research identified a true gap between an inability of companies to commercialise the project output due to a lack of full R&D chain control, and an incapacity or even strategic misalignment from the side of the research organizations to enter into spin-off or spin-out activities. Especially the spin-off activity can be a problem in some university labs, where the spin-off activity remains a grey zone with respect to the regulatory frameworks in each country.

The potentially most relevant and logical bridge over this gap might be the SME. An SME could possibly more easily integrate the scientific and the applied part, from its more focused and less scale dependent development path compared to the large company. The SME could also be a test bench for both the labs and the larger company, of course not without commercial risk. The risk factor is an important issue that was referred to by SMEs that had taken on this bridging role. From their perspective and in their turn, they call upon the larger companies to commit to the risk sharing mechanism in the EU collaborative projects for example by providing access to specific internal resources, act as pilot market (i.e., customer) for the new product/process/service, or even support financially a spin-off activity. Many of the Research Organizations cases also have developed specific collaboration structures with SMEs. Hence, it seems that there is a dynamism created in the sense of bridging the gap, even though from the perspective of many SMEs things are moving quite slowly.

¹Notion coined by Smith, P.G. & Reinertsen, D.G. (1991), *Developing Products in Half the Time*. New York: Van Nostrand Reinhold. See also, e.g., Reid, S.E. & de Brentani, U. (2004), "The Fuzzy Front End of New Product Development for Discontinuous Innovations: A Theoretical Model", *Journal of Product Innovation Management*, 21 (3), 170184.