

The impact of Public-Private partnerships in Innovation: The PPRN Malaysia

Diego Comin

General Overview

Most governments in the world are very keen on fostering innovation. To this end they focus almost exclusively in subsidizing research and development (R&D) expenditures typically through tax credits. However, there is evidence that R&D subsidies may not be the most effective way to bring new technologies to companies. Often governments complain that R&D subsidies do not raise private R&D significantly. This suggests that what prevents most companies in most countries from innovating is not the price of innovation. Instead, it seems more reasonable to conjecture that what prevents these companies from innovating is their lack of technological knowledge. Companies that want to implement or develop a new technology and lack the knowledge to do that by themselves have a hard time finding where to acquire that knowledge. This is the result of at least two frictions. First, a pure matching friction. Companies do not know where to look for the knowledge. Second, a contractual friction due to the complexity of enforcing contracts on the products and services that needs to be provided and that prevents parties from, ex-post, holding up each other.

The PPRN

To overcome these frictions, the Malaysian government has created a public platform that matches companies with researchers from universities. The goal of the Public-Private Research Network (PPRN) is to match companies that have technological problems with researchers that can potentially resolve them. In particular, it provides solutions to problems that involve developing a new product or process or adapting a generic product or process to their needs. A second goal of the PPRN is to monitor the terms and execution of the contract, as well as to ensure a fluid communication that maximizes the chances that the researchers develop the technology sought by the company while receiving the agreed compensation.

The PPRN works as follows. When a company has a technological problem, it submits it to the PPRN. The PPRN analyzes the problem and sends a request for proposals to various researchers and research institutes that can potentially solve it. After reviewing the proposals, the PPRN and the company decide which of the solutions provides the highest value for money. The selected research team, the company and the PPRN sign a best intent contract that specifies the budget, duration and IP ownership of the outcomes. Projects typically last from 3 months to a year.

One virtue of the PPRN is the channel by which it brings technological knowledge to the market. Usually, knowledge is brought to the market by researchers. To monetize it, they have to take their applied research and develop new product and services, market them and often manage the resulting companies. Being successful at commercializing products requires skills that are different in nature to research as well as knowledge about what the market demands. That is the reason why this channel to bring technological knowledge to the market fails most of the time. The PPRN avoids this problem by bringing to researchers problems that the market demands. In this way, researchers do not need to guess where is market demand and can focus on their research.

The Randomized Control Trial

The PPRN is interested in evaluating whether the current design solves the two frictions identified above. To this end, it has expressed interest in participating in a randomized control trial (RCT).

During 2015, the PPRN intends to accept 1100 applications from companies that face technological problems and that qualify for the treatment. Of these, 200 companies will be randomly selected to participate in the RCT. The sample of 200 companies will be randomly split in two groups. The first group of 100 companies will be matched with the appropriate researchers and undergo the standard program by the PPRN. The second group of 100 companies will be the control group. These companies will not be matched with researchers and not be treated.

For both treated and untreated projects, we will measure whether the technological problem has been solved 6 months and one year after the company applied to the PPRN. We will also measure the evolution of sales, productivity and sales from the product or services linked to the project. Finally, we will measure the evolution of innovation activity in the company both in terms of R&D expenditures and patent applications.

Goals of the Project

This project has at least two possible impacts. First, the project will enrich the academic literature on innovation and growth. In particular, I will write academic papers that describe the findings of the RCT with respect to, at least, two questions: i) the importance of matching frictions in the conduit of R&D activities; ii) the impact on company performance of the PPRN.

Second, the proposal will increase our understanding on the role that direct government involvement in R&D may have in fostering innovation, and productivity and output growth. Therefore, it can inform US innovation agencies about new ways to achieve their mission.