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from SCIENCE to BUSINESS

How Firms Create Value by partnering with Universities

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CHAPTER 6

Best practices for firm–university partnerships

In the previous chapters, we have seen the various ways by which firms enter into collaborations with universities, in an attempt to boost their competitiveness. Let us now look, in this chapter, at what additional helpful steps are required in order to put this complex process effectively into practice within firms; we then look at some framework conditions and or policy issues, which have not been discussed yet.

Then, turning to the macro level, we will compare Europe with the USA. Their performances are similar in the area of knowledge and technology transfer. China, India and Japan are forging ahead, often following their own paths. Finally, the case of Switzerland is discussed, as this country is often shown as an example for its performance in knowledge and technology transfer.

General prerequisites for firms

In order for firms to engage effectively with universities, a prerequisite is for the firm to be clear about its business developments needs. The next stage is to be aware of what developments need to be carried out in-house and what should be undertaken with external partners. As indicated earlier, the tendency is for increased collaborations. Examples of criteria for this choice are:

- How critical is to have full control of the development?
- The time horizon.
- Is the project more a capacity-building exercise?
- How specific is the development? A scenario involving planning based on geopolitical or societal trends may usually be

conveniently outsourced. Some issues are industry-wide, such as, for example toxicological studies of fine particles emitted by diesel engines. These must be done jointly by the manufacturers of diesel engines.

- What are the returns (cost and risk-sharing, but also climbing a learning curve faster) of going outside?

These criteria are specific to the firm at a given time and must be revisited occasionally. Once this map is drawn up, then the question is: what projects are most suitable for partnering with universities? Finally, what university is most fitted for a given project? Is this university available, contractually and in terms of workload? How customer-friendly is the university, its policies and its KTT office?

A second prerequisite for the firm is the attitude of its staff. An open mind and high curiosity are a must, but they do not come that naturally. There is the general tendency in organizations to be inward-oriented and to consider that the internal resources of the firm are preferable, because they are rooted in the 'culture' of the firm. This is what is described as the 'not invented here' (NIH) syndrome. This can also be accompanied by the fear of discovering that outside resources may be better than anticipated. Technical experts, in particular, tend to have an 'expert syndrome', which make them believe in their superior competence. A well-designed and implemented management development course may act as a powerful agent of change to modify these perceptions and make the staff much more outward-oriented, proactive and curious regarding what goes on outside the firm.

A cosmopolitan staff, composed of individuals from different cultures, literally brings different 'points of view', which are very positive for healthy debates and coming up with new ideas. Furthermore, such staff have connections with persons and institutions everywhere in the world. Thus, they promote a positive circulation of ideas and an openness to outside ones.

One company appears to be very open to external ideas. It is the US healthcare and cosmetic products company Johnson & Johnson (J&J). It has a decentralized structure and an entrepreneurial perspective, where employees are on the lookout for external ideas that can lead to new J&J products. As a result, it

is adept at 'internalizing' such ideas and turning them into company successes. Indeed, many of J&J's breadwinning products, such as the supple contact lens, for example, have been brought to the company by external actors, universities, individuals or small companies. If this prerequisite of open mindedness is fulfilled, then the firm will be likely to entertain informal, but sustained contacts with the personnel from the universities most relevant to their business development needs.

In a large firm, an array of 'watchers' regularly exchange information, making sure it is circulated and discussed, in order to best connect with the business. In contrast, in SMEs, only one or two persons watch the university scene, taking into account the 'needs' of the firm. In both cases, experiences are exchanged on the challenges of partnering and managing external collaborations. This is done internally, but also across firm boundaries, as much can be shared on the managerial issues without divulging what specific areas are of interest to the firm's future business.

Issues and expected trends concerning universities and public research organizations will be covered in Chapter 7. With regard to the best practices for the framework conditions, several policy issues are discussed below.

IP Policy

Countries should assign the ownership of patents to the university rather than to the inventor in its staff. In this sense Germany got it right, structuring its law in this direction, whereas Italy went the wrong way by shifting the ownership to the inventor. The rationale is that, in general, universities are better equipped to extract the best value from the patent than are individuals.

However, in the area of patents, it is important to provide resources for preparing and filing them. Also, it is desirable to have a coordination of the patent activity within the firm. This is why the Italian public research organization CNR, mentioned in Chapter 5, should not have decentralized the handling of patents to its individual institutes, especially in the light of the fact that no accompanying budget was provided for them to discharge this new task.

Evaluation of universities

One fair question to ask is whether and how to evaluate universities, in particular with regards their effectiveness at transferring knowledge and technology. The UK is the country that has put in place the most systematic process in this area. Initially this was implemented by the Research Assessment Exercise (RAE), which drove the dynamic by offering increased ranking for the university if it became involved in these collaborations. This exercise did not give recognition to the knowledge and technology transfer activities. It was also resource-intensive in expert time and in management attention, even leading to bureaucracies within the universities to manage the RAE process. The latter has now been replaced by the Research Excellence Framework (REF). This is partly to make the process less costly by using metrics, rather than peer reviews. It also shifts the focus on the impact of the university's activity. The Higher Education Funding Council for England (HEFCE) (www.hefce.ac.uk) stresses the *impact* and 'effective dissemination and application' as key criteria.

The question is how undisputable the metrics used in the evaluation process will be. The REF exercise is likely to encounter some controversy, when looking at the different viewpoints of academia as to how evaluate research performance. How useful is such a tool in achieving real improvement in performance, rather than inducing undesirable dynamics? It is now planned for the REF exercise to start in 2012. Maybe, like other processes, the real value for the universities may be in going through the exercise, as a learning process, rather than in its outcome.

Seed funding

Seed funding consists of providing capital to a new venture, so as to allow it to be in a position of either further funding itself or to call on external investors. This capital is usually used to pay for preliminary operations markets research or early product development. The sources of seed funding are the founders of the business, or family and friends. They may also occasionally be 'angel' investors. Seed capital is not a large amount of money,