Chapter 5

Academic Patenting in Europe: Recent Research and New Perspectives

Francesco Lissoni
Università degli studi di Brescia, Italy & Bocconi University, Italy

ABSTRACT

This chapter summarizes the results of the project titled Academic Patenting in Europe (APE-INV). The key aims of the project are the creation and diffusion of a harmonized database on academic patenting in Europe. The database allows for the investigation of the economic returns of academic patenting at the scientist, university, and industry level. It also helps to investigate the extent of synergies and trade-offs between patenting and other technology transfer means such as consultancy, mobility of personnel, as well as teaching, conferencing, and publishing. Finally, it provides the basis for the creation of a larger database on inventors in Europe, to be used in studies on knowledge diffusion and labour mobility. The basic evidence from the database is opposed to the view that the European universities are lagging behind the US in terms of universities’ contribution to patenting. The bulk of academic patents remained in the hands of the companies having strong ties with academic scientists. The European policies mainly addressed the narrow issue of technology transfer and patent ownership, and were not strong enough to change the fundamentals of the research systems.

INTRODUCTION

In this study, we will go through an overview of quite a long-term research program which started quite informally few years ago, just by playing with patent data, but then grew up to the point of being formalized into a research project funded by the European Science Foundation, under the name of Academic Patenting in Europe (APE-INV). The research programme consists of mapping the contribution of academic scientists to patented inventions in several European countries. We also want to understand what type of ownership these academic patented inventions have, that is whether they are owned by companies or by university themselves or other subjects. Furthermore, we
would like to assess the economic value of these patents, along with a number of more sociological oriented features such as the characteristics of their inventors, the relationship with the latter’s research efforts and so forth. The four people whose portraits are featured on the front page of the APE-INV project’s webpage (http://www.academicpatenting.eu) are all famous European academic inventors: William Thomson, later Lord Kelvin, one of the most influential physicist of the 19th century, inventor of over 70 patents, and entrepreneurs; Louis Pasteur, the father of modern microbiology and inventor of several applications in the food industry and pharmacology; Ernst Abbe, a physicist at the University of Jena (one of his several appointments), founder of modern optics, as well as of Carl Zeiss Stiftung, a pioneer company in the field of microscopy and later of photographic equipment; and Giulio Natta, Nobel prize for Chemistry in 1963, inventor or co-inventor of over 300 patents, the most important ones in the field of polymers.

These portraits hint at the philosophy of the APE-INV project, in that they suggest that European academics have been contributing to inventive activity, and to patenting, for a long time; but also that they often done so not in the name of their universities, as most of the US colleagues have done (especially since the 1980s), but either in their own name or in the name of companies with which they were collaborating. For this reason, when moving from historical case studies to collecting statistics, which largely classify patents according to their ownership, we run the risk of losing sight of a substantial amount of inventing activity, which is going on in universities but then is registered under a company’s or individual’s heading. Thus, an important part of the project consists in producing more reliable statistics, in order to counter the wrong overall impression that official statistics on patenting convey, namely that of a European academic science that does not contribute to technological advancements or, more prosaically, that does not patent enough.

The outline of the study will be as follows. First, we will try to define more precisely what we mean by academic patenting and why it is interesting. Second, we will spend a few words on the methodological novelty introduced by the research programme on European academic patenting; this novelty refers to ways for identifying academic patents through inventors, and it has expanded these days to degrees of sophistication that offer nice technical challenges for all researchers interested in computer science, linguistics, and semantics. Third, we will sketch the key basic findings of the research programme in terms of assessing the extent and the characteristics of the phenomenon of the academic patenting. Fourth, we will move on towards more recent papers. One will be about the profile of academic inventors in terms of scientists. What type of scientists are academic inventors? What is the relationship with university and with industry? Last, we will go through questions for future research.

ACADEMIC PATENTING: A DEFINITION

For the purposes of our research, we define an academic patent as any patent signed at least by one academic scientist. That is, a patent to which we know an academic scientist has made a contribution while working at his or her university. Of course, it may be that an academic scientist signed a few patents before moving into university, but we try to stick to those that have been produced by academic scientists in their capacity of university employees. An objection to this definition is that, for patents co-invented by several individuals, the contribution from a single academic inventor is too small for qualifying the entire patent as academic. However, this is not often the case; most of the groups of co-inventors responsible for what we define academic patents host in fact a majority of academic scientists, with the possible (but far from inevitable) addition of some people from