

Chapter 10

Formal Technology Transfer in Context: The Case of Publicly Funded Universities

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ABSTRACT

Collaboration between science and industry and the technology transfer activities of universities have been argued to be crucial in the development and sustainability of a competitive knowledge-based economy. Previous studies have mainly focused on indicators such as patents, license income and spin-offs to measure technology transfer activities. However patenting, licenses, and spin-off creation are argued to be only a small part of the technology transfer activities conducted at universities and have a smaller impact than traditional contract research. Very few studies systematically address the importance of contract research in general and service delivery in particular. This chapter addresses this gap by looking in concert and contextualised at the importance of contract research activities, patenting, and spin-off generation of public universities in a particular European region.

INTRODUCTION

During the last decade, governments have been increasingly active in attempting to put together the necessary ingredients for realising international competitiveness and endogenous growth, based

on knowledge, the innovative capacity and the entrepreneurial dynamics that can be mobilized in a particular region (Nauwelaers, 2005; Van Looy et al., 2006). More specifically, the collaboration between science and industry and the technology transfer activities that emerge from this have

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been argued to be crucial in the development and sustainability of a competitive knowledge-based economy (OECD, 2003). Increasingly, universities are under pressure by governments to generate economic returns and contribute to enhancement of the local economy. Especially spin-offs are highly prioritized by government as these new companies may become engines of economic development. Governments implemented major policy changes (following the Bayh-Dole Act in the US) and initiated programs to support IP management, install pre-seed funds and stimulate the growth of spin-off firms, and enhance R&D collaborations with industry (OECD, 2000). As a result, universities start to delve more deeply in their pool of research to increase commercial activities which resulted in a sharp rise in economic output generated by universities (see Djokovic and Souitaris, 2008).

To date, scholars have focused on particular “output” measures as indicators of economic success such as patents, licenses and the creation of spin-off companies (Wright et al., 2008). However, Agrawal and Henderson (2002) argue that such indicators hardly measure 10% of the knowledge transfer that takes place. This means that most of the knowledge is transferred in various forms of collaborations between the public labs and their industrial partners, encompassing activities as broad as PhD graduate mobility, service delivery and contract research (Polt et al., 2001). Notwithstanding, regional and federal governments increasingly expect from universities to commercialise their publicly funded research results through tangible indicators such as patents and spin-offs (Lambert, 2003). Within this context, both professionalising the support to the commercialisation of intellectual property and the stimulation of spin-off creation at universities, have been high on the agenda since the mid nineties (Clarysse et al, 2007; Wright et al., 2007). In addition, different programmes were installed at European and national levels to improve research collaboration between the research labs and the local industry, exactly to

increasingly meet satisfactory levels of these traditional “output” measures.

In line with this trend, previous studies have mainly focused on patenting (e.g. Agarwal and Henderson, 2002) license activities with industrial parties (Henderson et al., 1998; Thursby and Thursby, 2002; Shane, 2004) and the creation and ongoing relationships with research-based spin-offs (Di Gregorio and Shane, 2003; Moray and Clarysse, 2005; Mustar et al., 2006). In addition, researchers have addressed a variety of potential determinants of these output indicators. These determinants include the quality and incentive mechanism of faculty and research staff (e.g. Friedman and Silberman, 2003), the structure and organization of the dedicated technology transfer office (e.g. Debackere and Veugelers, 2005), and the entrepreneurial mindset of the academic community (e.g. Van Looy et al, 2006).

Despite the increased interest in technology transfer activities of universities, very few studies systematically address the importance of contract research in general and service delivery in particular (Caldera and Debande, 2010). This is surprising as both academics and practitioners report that an excellent contract research base represents the cornerstone of the development of a science base that is useful for universities to be successful in the long term (Wright et al., 2008). Moreover, patenting, licensing and spin-off creation are argued to have a much smaller impact than traditional contract research (Nowotny et al, 2004). Addressing this gap, this chapter analyses for four universities in a particular region patenting and spin-offs activity, and how this relates to the contract research activities in terms of strategic importance for the university in general and the technology transfer office in particular. This study is important because contract research has been largely overlooked in the literature on technology transfer and policy makers emphasize to a large extent patenting and spin-off creation as incentive mechanisms.

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