NURTURE OF NATURE? THE GROWTH PARADOX OF RESEARCH BASED SPIN-OFFS (INTERACTIVE PAPER)

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INTERACTIVE PAPER SESSION

NUTURE OF NATURE? THE GROWTH PARADOX OF RESEARCH BASED SPIN-OFFS

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Principal Topic

Most of the current literature on academic spin-offs is concerned with what determines the emergence of spinoffs, with few studies tackling the crucial academic and policy question of whether (and which) spin-offs actually grow (Djokovic and Souitaris 2004). The heterogeneity in the nature of research-based spin-offs across Europe adds to the complexity of the issue.

Therefore, we attempt to answer the question “What determines the capital invested in and subsequently the growth of research-based spinoffs?” focusing on the relative effect of two types of variables:

a) “Nurture” variables which describe the resource interaction between the research institution and the spinoff firm at the start-up phase. Our three selected nurture variables are 1) the type of incubation model of the research institution (adopted from Clarysse et al. 2005), 2) the formal (versus informal) transfer of technology through assignment of a patent or license at time of founding and 3) the extent of inventor’s involvement with the company (we test the trichotomous taxonomy developed by Nicolaou and Birley 2003).

b) “Nature” variables ‘describe’ the company’s type of business. Our two selected nature variables are 1) the technology domain and 2) the complexity of the sales process.

Method

We surveyed the total population of research-based spin-offs set up in Flanders (a region of Belgium) that were created between 1991 and 2003 (N=85). The study of the total population in a homogenous region reduces non-measured variance resulting from environmental conditions. Flanders is considered as an emerging high-tech region, experiencing a fast process of convergence between old and new technologies and thereby improving its competitive position.

We asked key informants from each company (via a face to face interview) to identify variables regarding the initial conditions at founding (capital raised, incubation model of the parent institution, inventors’ involvement, formality of the technology transfer process, technology domain and complexity of the sales process), as well as variables related to the company’s situation at the time of the interview (number of employees, age).

Results & Implications

We found that the major predictor of early growth of spinoffs is the capital invested in the companies at founding. No other variable at the time of founding had a direct effect on growth and that is an interesting finding in itself. However, capital invested is determined by “nurture” variables (the incubation model of the parent, the formal vs informal transfer of technology and the inventors’ involvement) and by “nature variables” technology domain and sales complexity.

The main implication for Universities and policy makers is that the key to growth is capital invested. Capital should be invested if we are looking seriously at growth, either by the parent or by public funds or by private investors. However, universities and spinoffs can control their attractiveness to funders by

a) Having technologies that are so interesting that can attract external attention without spinning off the inventors (technology spinouts)
b) Transferring technology formally to the companies (real spinouts rather than academic startups) and
c) Having a incubation policy squarely targeting growth (Clarysse et al incubation model)

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