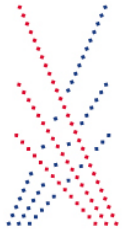

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Identifying the "Right" Surrogate Entrepreneur for Academic Spinoffs

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Abstract

Universities often bring surrogate entrepreneurs to academic spinoffs, in order to help them overcome the limited business knowledge of academic inventors and to deal with the high levels of uncertainty that characterize the commercialization of university research. Yet, we lack understanding of when it is the best time to bring the surrogate to the spinoff, and what makes a person well suited for the role of surrogate entrepreneur. My proposal outlines why it is important to address these questions and briefly describes the adopted research methodology.

Keywords: academic spinoffs, surrogate entrepreneur, timing, human capital, technology

Word count: 1.944

Introduction

The creation of academic spinoffs has received increasing interest by the academic community and policy-makers alike, since it is considered an attractive way to commercialize university research (Fini et al., 2017; Wright et al., 2006). However, becoming an academic entrepreneur is challenging for researchers, since they are embedded in the scientific community that has little similarities with the business world (Vanaelst et al., 2006; Vohora et al., 2004). Researchers have often spent their whole career in academia, and therefore they lack the business-related skills that are required to start and run a business. In addition, they may be too busy to fulfil the requirements for their tenure-track or to perform their research and other duties—let aside to get entrepreneurship training and to create a startup.

To overcome these challenges, the university stakeholders that are involved in research commercialization (such as the university technology transfer offices – TTOs) often bring to the spinoffs surrogate entrepreneurs, that is, outsiders with commercial experience who do not have prior formal links to the university (Franklin et al., 2001; Lockett et al., 2003; Vanaelst et al., 2006). However, we still know little about the "right" time to add a surrogate to the academic spinoff, probably because they are only a few studies exploring the formation and the evolution of academic spinoff teams (for a review, see Nikiforou et al., 2018).

Against this backdrop, this paper examines whether surrogate entrepreneurs should be added to the spinoff before or after opportunity recognition, that is the first critical "juncture" that academic spinoffs face (Vohora et al., 2004). In this phase, researchers seek to identify alternative applications for the technology and potential target markets. Performing this activity in a sound manner is crucial for the spinoff, as entrepreneurs need to find the right direction for their startup, otherwise they are wasting scant resources and time (Gruber and Tal, 2017). In effect, finding the (right) market for the startup has an enormous influence on its potential (Gruber et al., 2008).

In this developmental paper, I argue that it is somewhat of a paradox to ask researchers to identify and evaluate market opportunities, because of the very idiosyncratic characteristics of the researchers that have been otherwise underscored by academics, university stakeholders, and policy-makers. In essence, researchers, who typically lack any commercial knowledge, are asked to do something that even seasoned entrepreneurs fail to do well. However, the alternative approach is not unproblematic. Adding a surrogate before opportunity recognition may also lead to suboptimal solutions, since the surrogate's prior knowledge will shape their search for opportunities, and may bias the alternatives they identify and choose to pursue (Gruber, 2010; Shane, 2000).

When is the right time to add a surrogate entrepreneur to academic spinoffs?

Previous research has underlined the role of surrogate entrepreneurs, who are added to academic spinoffs, in order to provide complementary market-related competences that academic inventors are missing (Visintin and Pittino, 2014). Business knowledge, professional networks, and prior entrepreneurial experience are the advantages often associated with surrogate entrepreneurs (Lundqvist, 2014), although surrogates may also be first-time entrepreneurs leaving paid employment in industry (Franklin et al., 2001). In addition, surrogates are often added to the

team, as academic inventors are now always willing to work full-time for the new venture (Vohora et al., 2014).

The addition of a surrogate entrepreneur is considered beneficial for the academic spinoff, since it increases the spinoff's chances for survival and growth (Lundqvist, 2014), but we need to enhance understanding about the *best time* to add the surrogate. Research so far has provided evidence that academics find the identification of opportunities challenging, and they are thus more likely to fail framing viable market opportunities (Vohora et al., 2004). Yet, in practice, researchers are called to perform this task, and surrogate entrepreneurs are not often added to the team until after the opportunity has been identified (Vanaelst et al., 2006).

To this end, I focus my attention on the first critical juncture that academic spinoffs experience following to research, that is the identification of market opportunities (Vohora et al., 2014) and I theoretically examine what it means for academic spinoffs to add a surrogate entrepreneur before *versus* after opportunity identification. I anticipate that each of the approaches has its own problems that can, in turn, be attenuated (or amplified) by the human capital of the academic and surrogate entrepreneurs, as well as the characteristics of the focal technology.

Adding the surrogate entrepreneur after opportunity identification

The addition of the surrogate entrepreneur often happens after the researchers have recognized an opportunity. After they take the decision to create a spinoff, the researchers or the university may search for a surrogate entrepreneur, who becomes part of the founding team and takes an active role in the legal establishment of the new firm (Vanaelst et al., 2006). This means that researchers are the ones left with the difficult task to identify market opportunities. This is somewhat of a paradox, as policy-makers and researchers have stressed the idiosyncratic characteristics of researchers that are often incompatible with the characteristics that are needed to do business.

On average, researchers lack an entrepreneurial mindset, experience in the private sector, and business-related competences (Jain et al., 2009). They also have serious time constraints as they have to perform their academic duties, and they may be reluctant to devote time to the new venture or to leave academia (Franklin et al., 2001). In fact, researchers lack experience in creating commercial value from scientific inventions. As a result, i) their technologies have little proof of concept, ii) there is lack of clarity over suitable product applications, and iii) the opportunities identified are imprecise and impracticable (Vohora et al., 2006).

Hence, adding a surrogate entrepreneur after opportunity identification may lead to Problem 1.

> ***Problem 1: The addition of a surrogate entrepreneur after opportunity identification may lead to a miscalculated market opportunity.***

This problem has three main implications. First, the researchers may be demotivated to engage in spinoff creation, as practicing business-related activities may be uninteresting to them. Second, a poorly developed market opportunity may increase the likelihood that the spinoff fails to transcend the "Valley of Death", which refers to the gap between the development of research and the development of commercial products (Barr et al., 2009, p. 371). Third, the academic entrepreneur and the university may search for a surrogate entrepreneur who is a good match

with the (poorly defined) identified opportunity. In that case, the surrogate may be a good match with the identified opportunity, but not with the most promising opportunity for the focal technology.

Adding the surrogate entrepreneur before opportunity identification

Alternatively, spinoffs can add a surrogate to the spinoff early on in the process, so as they identify and evaluate a variety of opportunities. This would help the spinoff overcome the difficulties associated with Problem 1, as the surrogate entrepreneur should possess the market-related competences that are essential to identify a market gap for the focal technology (Rasmussen et al., 2011).

However, this approach is not without its limitations, as there is the risk that the surrogate's prior knowledge biases the spinoff towards a certain opportunity and precludes it from identifying a broader set of opportunities. For example, a surrogate entrepreneur with prior experience in the healthcare industry may be more inclined to identify, refine, and pursue a market opportunity in this industry, even if this may not be the most promising opportunity for the focal technology. This is problematic for emergent academic spinoffs, since academic spinoffs are (research) technology-push organizations, typically with a variety of potential market/product applications. It is therefore impossible to foretell which surrogate entrepreneur is the "right" match for the spinoff. Put differently, it is difficult to know in advance what type of market-related competences (such as industry experience) they should bring along in order to identify a market opportunity that unleashes the full potential of the technology.

In fact, research in related fields has shown that the majority of technology entrepreneurs identify only one opportunity prior to market entry, and from the ones that identify more than one opportunities, only a few identify varied opportunities (Gruber et al, 2013). This is because each person's prior knowledge creates a "knowledge corridor" that enables them to identify some opportunities but not others (Shane, 2000, p. 452). In other words, entrepreneurs tend to rely on their pre-entry knowledge and they identify market opportunities in a path-dependent manner (Gruber, 2010; Gruber et al., 2013).

Hence, adding a surrogate entrepreneur before opportunity identification may lead to Problem 2.

> ***Problem 2: The addition of a surrogate entrepreneur before opportunity identification can lock the spinoff in a sub-optimal market opportunity.***

Contingent Factors

I expect that the right time to bring a surrogate entrepreneur into a team is not independent from the i) key persons involved, that is the academic(s) and the (potential) surrogate entrepreneur, and ii) the focal technology to be commercialized.

More specifically, I focus my attention on the human capital endowments of academic and surrogate entrepreneurs for two reasons. First, research in related fields has shown the importance of human capital for the emergence and success of new ventures (Unger et al., 2011). Second, the majority of studies examining the role of teams in academic spinoffs has largely investigated this type of resource endowments, yet with inconclusive findings (for a review, see

Nikiforou et al., 2018). I argue that one reason behind these inconclusive findings may be that scholars have not investigated which member of the entrepreneurial team (e.g., an academic inventor or the surrogate entrepreneur) possesses each of the resources, and when this member (and the respective resource) is added to the spinoff. I argue that understanding the "who" and "when" combined is important to disentangle the effects of human capital on academic spinoff success. Several aspects of industry and entrepreneurial experience are discussed.

Furthermore, one needs to consider the contingencies generated by the focal technology, since "what" is the technology to be commercialized can have a large effect on new venture success. Drawing upon previous research on academic spinoffs (Clarysse et al., 2011), I examine the following technology characteristics that, I anticipate will influence the "right" timing of the surrogate's addition: newness, tacitness, and scope.

Methodology

I have adopted a qualitative research design, using case studies, as its flexibility and inductive reasoning can help to disentangle the complexities of the phenomenon under study (Bryman, 2001). Overall, I plan to collect data from 30 academic spinoffs or more, if needed, in order to achieve theoretical saturation (Saunders and Townsend, 2016).

Conclusion

Identifying the right surrogate entrepreneur is a difficult but important task for academic spinoffs, as bringing the right (or the wrong) person on board will have a tremendous impact on new venture success. I anticipate that my research will have implications for research in entrepreneurship, innovation, and team formation. Research findings may also help spinoffs and the originating universities to establish a process for identifying and attracting the "right" externals at the "right" time, in order to complement the academic entrepreneurs in their spinning out endeavors.

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