



Identifying economic ramifications resulting from accepting equity vs. requiring traditional licensing payment methods



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ABSTRACT

The purpose of this study was to analyze the economic ramifications resulting from research universities' acceptance of equity positions in spin-off companies as an alternative to traditional forms of licensing payments. The study was conducted using the most recent three years (i.e., 2011, 2012, and 2013) of the Licensing Activity Survey conducted by the Association of University Technology Managers. Universities that had accepted equity in start-up companies had statistically significantly higher licensing revenue, in all three years, than universities that did not accept equity positions in start-up ventures. However, higher total licensing revenue earned by universities could be attributed to increases in running royalty revenues received in each of those same years. Revenues from cashed-in equity positions fell precipitously in years 2011, 2012, and 2013. Universities may continue to take equity positions in start-up, joint venture companies despite decreasing revenues from cashed-in equity positions because the potential exists to create (a) a positive impact on regional economies, (b) new jobs for the schools' graduates and, (c) windfall profits for equity holders if the companies' technologies or inventions become commercially successful.

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1. Introduction

Historically, Technology Transfer Offices engaged in licensing activities. The most prevalent of these endeavors included offering licensing options and licensing agreements to private industry. Licensing fees may have included a set dollar amount paid up front, monthly or yearly and/or running royalties that would have been assessed based on some percentage of sales or profits. In recent years, technology transfer professionals, with their universities' consent, have added an alternative and potentially lucrative method of receiving payment in exchange for the rights to market technologies or inventions owned by their universities (Di Gregorio & Shane, 2003; Feldman, Feller, Bercovitz, & Burton, 2002; Marion, Dunlap, & Friar, 2012; Powers & McDougall, 2005).

Increasingly, research universities are accepting equity positions in spin-off ventures created to commercialize universities' intellectual property. In the Association of University Technology Managers' (AUTM's) 2013 Licensing Survey, university respondents revealed that 818 startup companies were formed around universities' intellectual property. Many of these newly formed companies remain in close proximity to their partner universities creating jobs for the schools' graduates and stimulating the local economies. Willingness to accept equity in lieu of cash payments, as pointed out in the existing literature (Di Gregorio & Shane, 2003; Feldman et al., 2002; Marion et al., 2012; Powers & McDougall, 2005), may be predicated upon (a) the policies

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and culture of the research universities, (b) the predisposition and experience of the researchers/academic inventors, and (c) the characteristics of Technology Transfer Offices' licensing managers.

1.1. Policies and cultures of universities

In the early years of universities' commercialization efforts, immediately following passage of the *Bayh-Dole Patent and Trademark Amendments Act of 1980*, many institutions considered equity positions in spin-off businesses to be excessively risky and a method of last resort for accepting payment in exchange for their intellectual property (Feldman et al., 2002). Through their research, however, Feldman et al. (2002) determined that attitudes and policies at research universities had evolved toward a more diversified portfolio of payment options. Feldman et al. (2002) investigated the inclination of Technology Transfer Office professionals to accept equity positions, as an alternative to license agreements, in spin-off companies established for the purpose of commercializing universities' intellectual properties. These researchers analyzed 67 responses to a survey questionnaire sent to the 124 Carnegie I and II research universities that, at that time, had a formal structure for technology transfer. Feldman et al. (2002) concluded that universities were increasingly willing to accept equity, rather than license fees and royalty payments, in companies with the rights to market the universities' new technologies or inventions.

Survey respondents cited three reasons for the shift in policy. First, equity positions could have far more up-side income potential than traditional licensing agreements for universities. As one of the businesses' owners, a university would be entitled to share in all future revenue streams of the new start-up business. In addition, the newly formed company could be acquired by a larger firm or it could sell shares in an initial public offering leading to windfall profits for the owners including the university. The second benefit of putting together an equity deal is that it aligned the interests of the university and the newly formed business. Both the university and the spin-off company would share a common goal of a quick and successful market launch of the new technology or invention. A third benefit of accepting an equity position is that it sets a precedent. A clear signal is sent to other industries and investors that the university is entrepreneurial and ready to create joint venture opportunities for the purpose of commercializing its portfolio of intellectual property (Feldman et al., 2002).

Di Gregorio and Shane (2003) identified university policies that influenced university/industry spin-off activity through a survey of 116 universities, of which 101 responses were received from Technology Transfer Offices' directors. Di Gregorio and Shane (2003) discovered an inverse relationship between the royalty rates paid to academic inventors and the number of start-up companies formed to commercialize universities' intellectual property. When universities were determined to have a policy of sharing a large portion of royalties with academic inventors, start-up activity was low. Conversely, when the inventors' share of royalty payments was paltry, a corresponding up-tick was present in the number of spin-off companies formed. An implication of this research is that universities may be able to amend royalty policy and directly influence start-up activity.

1.2. University researchers/academic inventors

Marion et al. (2012) examined the connection between the degree of commercialization success and the entrepreneurial characteristics of the academic inventor. Data for the investigation came from a census of 400 university patent disclosures, an empirical survey, and in-depth interviews with eight academic inventors identified in the census and survey as most successful at intellectual property commercialization as determined by gross revenue. Through their research, Marion et al. (2012) determined that several factors, all related to universities' academic inventors, were responsible for successfully passing newly developed technologies from universities to the market place through new start-up companies. Successful academic inventors, according to Marion et al. (2012), could generally be described as tenured and productive. They would have previous entrepreneurial experience and would also possess a positive inclination toward commercialization of research. In addition, the most productive inventors excelled in networking with industrial partners and cultivating external resources including knowledge and funding as evidenced by their participation in industry sponsored research agreements (Marion et al., 2012; O'Shea, Allen, Chevalier, & Roche, 2005).

1.3. Technology transfer offices and licensing managers

Although literature on the subject is sparse, one study was identified in which the authors espoused the important role Technology Transfer Offices play in the formation of spin-off companies. Powers and McDougall (2005) identified universities' resources believed to be significant predictors of spin-off company formation. The research team collected and analyzed archival data on 120 universities classified as "research extensive" or "research intensive" as defined by the Carnegie Classification System. Powers and McDougall (2005) discovered that the age of the Technology Transfer Office was a significant predictor of universities' willingness to accept equity positions in spin-off ventures created to commercialize their intellectual property. These researchers also concluded that the amount of research funding received from industry sources, the quality of the faculty, and access to venture capital were also significant predictors of increased spin-off activity. However, one of the original hypotheses, that the importance of universities' patent portfolios would be positively related to the number of start-up companies formed, was not supported by the data.

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