

# **Resources, Entrepreneurship and Commercialization Strategy: A Study of Faculty Entrepreneurs**

*Tianxu Chen*

*Doctoral Student in Strategy and Entrepreneurship*

*Adviser: Donna Marie De Carolis, Ph.D.*

## **Executive Summary**

University technology transfer enjoyed tremendous growth since the 1980s (Power and McDougall, 2005; Shane, 2004; Shane 2002; Thursby and Thursby 2002). According to annual surveys by the Association of University Technology Managers (AUTM), the total income from technology transfer, including royalties, cashed-in equity and other, at 158 responding universities was as high as \$1,030 million in the fiscal year of 2004, compared with the \$122 million income from royalty of 98 responding universities in the fiscal year of 1991(AUTM 2004; AUTM 1991-1995).

Two essential reasons may explain universities' enthusiasm to commercialize inventions of the faculty and students. First, the enactment of a series of federal laws provided incentives for universities to transfer federal-funded inventions. The 1980 Bayh-Dole Act, the 1980 Stevenson-Wydler Act and the 1985 Federal Technology Transfer Act have fundamentally changed the way that university inventions are commercialized (Markman et al, 2005). For example, the 1980 Bayh-Dole Act granted universities the right to retain title to and license technologies derived from research sponsored by federal government (Thursby et al, 2001). Second, firms' competitive advantage increasingly depends on technological innovations. As the major source for technological innovation(George et al, 2002), universities now enjoy abundant opportunities to participate in business exploitation.

Prior research has identified modes of technology transfer (Shane,2002; Shane 2004). There are six major technology transfer modes: contract research, consulting, licensing, technology development, and start-up companies (Shane, 2001; Roberts and Malone, 1996; Steffen et al, 1999). However, little research has been done to investigate how academic entrepreneurs are likely to choose among these modes.

This paper aims to address the decision-making process of academic entrepreneurs in the scenario of technology commercialization. Specifically, this paper utilizes the Prospect Theory to analyze how academic entrepreneurs are likely to choose modes of technology transfer and how their interpretation of the value of their resources would likely to change their cognition and thus change their strategic decisions. It is argued that strategic choices of academic entrepreneurs follow the model of the Prospect Theory. In addition, three resources, i.e. technological resources, social capital and university environment, of academic entrepreneurs are conceptualized as being able to change their strategic decisions by changing their estimation of probability for success. In this sense, present research could advance existing theories in both university technology transfer and entrepreneurship.