Opportunities and Obstacles to Technology Transfer

Throughout **Technology Ventures Corporation's (TVC**) successful 19 year history operating in New Mexico as a non-profit, 501(c)(3), charitable foundation we have of carried out our charter to commercialize federally funded technologies. Over the course of our history TVC has started 117 companies, created over 13,500 jobs, and raised over $1.2 billion in equity funding. Along the way we have observed a number of obstacles and opportunities that would improve how technology commercialization may be better executed.

OBSTACLES

1. The definition of technology transfer.

Many notable organizations, like the Association of University and Technology Managers (AUTM), the Federal Laboratory Consortium (FLC), and the Larta Institute all define technology transfer differently and very broadly.

However, a much more pronounced and economically beneficial definition is that described by the 2011 report, *Technology Transfer and Commercialization Landscape of the Federal Laboratories*, issued by the Science and Technology Policy Institute, Institute for Defense Analysis. This report describes a definition of "technology transfer that leads to commercialization" which ends with the production of commercially successful products; market assessment, product design, manufacturing, engineering, management of intellectual property, marketing strategy development, raising capital, and workforce development.

TVC recommends that the State of New Mexico develop its own definition of what technology commercialization is and provide metrics that clearly identify the results of successful technology commercialization and calculate its contribution to the economy.

2. Execution of existing laws governing technology transfer.

To date there are over 20 federal laws and executive orders that address technology transfer. The most recent is described in the Energy Policy Act of 2005, Title X, Section 1001, which establishes the position of the Technology Transfer Coordinator at the Department of Energy as well as the Technology Commercialization Fund (TCF). The TCF "using 0.9 percent of the amount made available to the Department for applied energy research, development , demonstration, and commercial application for each fiscal year, to be used to provide matching funds with private partners to promote promising energy technologies for commercial purposes."[1] Unfortunately, no federal budget recommendation since 2008 has accounted for the TCF. To date neither Sandia National Laboratories nor Los Alamos National Laboratory has an existing TCF as described in the legislation.

[1] 119 STAT. 926 Public Law 109-58- AUG 8, 2005

TVC recommends that Science, Technology and Telecommunications Committee submit a written inquiry to the Department of Energy, Sandia National Laboratories, and Los Alamos National Laboratory about the execution and funding of the Technology Commercialization Fund.

3. The culture of entrepreneurship in New Mexico.

A study commissioned by the U.S. Small Business Administration contends innovation without entrepreneurship generally yields minimal local economic impact. On the other hand, entrepreneurship enhances the regional economic impact of investments in innovation.[2]

Increasingly, organizations across the country are addressing the challenges of technology commercialization from an entrepreneurial perspective. The State Science and Technology Institute (SSTI), T2 Venture Capital, and CONNECT Innovation Institute are some organizations developing reports and white papers on how to foster and grow a culture of entrepreneurship in a region. T2 Venture Capital's Managing Directors, Victor Hwang and Greg Horowitt, have a developed a theory that focus on the human interactions in a given environment. In other words, because New Mexico has the right ingredients to be the "next Silicon Valley" it does not necessarily mean it will be unless it better fosters and develops entrepreneurs across the state.

TVC recommends active recruiting of serial entrepreneurs to come to NM to start, mentor and grow new startups based on university and federal laboratory technologies. A recruitment package might include relocation incentives, preferred access to technology, and financial incentives from the state's commercialization fund. Furthermore, to foster a culture of entrepreneurship, we recommend a recognition program of NM outstanding entrepreneurs, state funded grand challenges, encouragement to add entrepreneurship to the STEM educational focus, and a statewide initiative to help create 50 startups in the next 50 weeks.

OPPORTUNITIES

1. Support and enact the recommendation of the *Technology 21: A Science and Technology Roadmap for New Mexico's Future* to establish a Technology Development Fund.

The 2009 report developed by the New Mexico Department of Economic Development recommended that a "state-sponsored Technology Development Fund could be administered and directed towards commercializable technologies to meet market pull and help emerging technologies prosper with the State's help." [3] Many states across the country have already implemented a number of similar technology commercialization funds. SSTI published a report, *Tech-based Economic Development and the States: Legislative Action in 2011* that captures many of these state initiatives.

TVC recommends that legislation be enacted similar to Maryland, Senate Bill 239/ House Bill 442- the establishment of the Maryland Innovate Initiative, which is similar to the recommendation of the Technology 21 report. The Maryland Innovate Initiative is a $5 million

[2] Advanced Research Technologies, LLC, *The Innovation-Entrepreneurship NEXUS: A National Assessment of Entrepreneurship and Regional Economic Growth and Development* (Advanced Research Technologies, LLC: Powell, OH, April 2005), p. 5.
[3] *Technology 21: A Science and Technology Roadmap for New Mexico's Future, 2009.p8.*

fund established to capitalize on Maryland's leadership in research and development and seeks to move 40 new discoveries and innovations out of the lab and into the marketplace each year through a partnership between the state and five research universities and federal facilities.

2. State laws can override federal agency requirements.

One example is in South Carolina, where Department of Energy (DOE) has given the approval for Savannah River National Laboratory (SRNL) in Aiken, SC to exclude indemnity clauses from Cooperative Research and Development Agreements (CRADA) with universities, because South Carolina law specifically prohibits this requirement.[4]

TVC recommends that the State of New Mexico explore state laws similar to that of South Carolina which may preclude organizations from entering into CRADA's because of indemnity clauses.

3. Expand and further develop the New Mexico Small Business Assistance (NMSBA) Program

The NMSBA program is helpful for small business across New Mexico to solve technical problems and provides rural areas access to qualified subject matter experts. However, the program does have its limitations, specifically the award amount $10,000 in Bernalillo County, and $20,000 in rural counties.

TVC recommends an increase to the award amount and increase in the available time for subject matter experts to assist small business.

OTHER RECOMMENDATIONS

1. Forgive New Mexico Gross Receipts Tax (NM GRT) for small businesses (1-5 full time employees) and less than $1 million in revenue up to 3 years if licensing a technology from a university of federal funded research and development center.

2. Consider the creation of a new legal form of company entity- a *provisional corporation*- to provide formal protection to people in the exploratory process of forming a new startup. Many startups who choose not to register as company due to filling costs and other barriers, are by default treated as sole proprietors (sole liability) or partners (several liabilities, which means actions that one person takes can make the other person fully liable).[5]

[4] Science and Technology Policy Institute. *Technology Transfer and Commercialization Landscape of the Federal Laboratories*. 2011. P 40.

[5] Hwang, Victor and Greg Horowitt. The Rainforest The Secret to Building the Next Silicon Valley. 2012. Footnote 24 p. 263.