

MIND THE GAP 2011

The University Gap Funding Report

a conversation-building initiative of:

innovosource

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REPORT SUMMARY

Innovation is an exercise in progress. Through successes and failures it is the one force that can truly dictate our reality and shape a future of possibilities. Ideally, innovation delivers new products, services, talent, and inspiration to the market while sustaining and growing a society capable of procuring them; however, this opportunity is dependent on an educated working class, breakthrough technologies, and ideas that can grow existing companies and that drive new venture and industry creation. Research universities are perhaps the only source that can deliver all of these.

Through education, access to expertise, licensable technologies, and spin-out companies, research universities shape the future of innovation. For example, according to the Association of University Technology Managers(AUTM) [1], a professional organization for university technology transfer professionals, since the passage of the Bayh-Dole Act in 1980, research universities have:

- Added 4,350 licensed products to the market
- Spun out more than 6,000 companies (and are currently averaging more than 500 new start-ups a year)
- Created 279,000 advanced jobs in the US (from 1996-2007)
- Impacted GDP by \$187B, and gross industrial output by \$457B (from 1996-2007)

While universities provide talent and incremental, product-improving technology for companies of all sizes, they have a unique role in assisting small businesses and spinning out job-creating start-ups. A recent report from the Kauffman Foundation [2] suggests that new firms add 3 million jobs in the first year, while older firms lose 1 million jobs annually. With the shift in focus of large multinationals from developed economies to emerging markets, start-up companies, and therefore research universities, have never been more important to the type of growth that the US, and other countries, will need to develop future opportunities and prosperity.

Yet, even with historical success as a contributor to innovation and economic creation, the future ability of research universities to support this innovation is threatened, or at least constrained, by the lack of early stage capital (and support) available to transition government and industry sponsored research from the lab to the marketplace. This “gap” extends from where the government funding of basic research ends to where existing companies or investors are willing to accept the risk to commercialize the technology. The negative result is a large portion of economic creation that goes unrealized simply because it isn’t funded and supported.

In response, universities are developing or partnering with gap funding programs as a solution to address this issue—a strategy to relieve a bottleneck in the innovation system that rests between concept and commercialization where other forms of capital won’t or aren’t structured to go. These gap funding programs are often initiated by the universities themselves as an extension of their technology commercialization efforts and combine talent and capital around the goal of progressing innovation. This report will

demonstrate that university gap funding should be a priority for future innovation practices and policies because of its ability to not only catalyze the commercialization of technology, but for its ability to develop a culture of innovation.

The report will begin with an updated version of the university (or early stage) technology funding landscape that positions gap funding relative to other forms of traditional, emerging and disruptive sources of early stage capital. This new model is more representative of technology development and commercialization and takes into account the under-represented, yet vital translational research and proof of concept stages of technology development that take place prior to any commercialization.

Next, it will take an in-depth look at the functionality of 63 gap funding programs across 40 organizations, which creates a roadmap for current and aspiring fund managers to develop gap funding programs and presents benchmarks for policymakers to support these initiatives. While primarily focused on US programs, the report also includes examples of non-US funds and externally-partnered gap fund programs through accelerators and state-based funds. This analysis is joined with perspectives from fund managers, success stories, and past experiences with over 40 additional gap funds.

Finally, this report will suggest and explore various impacts, from a subsection of the survey participants, that depict the real value of gap funding initiatives, including:

- *High commercialization rates*
 - 76-81% of funded projects commercialized on average
- *Attraction of early stage capital*
 - \$2.8B leveraged from public and private investment sources
- *Business formation and job creation*
 - 395 new start-up companies
 - 188 technology licenses to existing companies
 - 7,761 new jobs, at cost of \$13,600 gap fund dollars per job
- *Building a community of innovation*
 - Thousands of faculty and students engaged in the process
 - Incorporate networks of technical and business professionals in the evaluation, mentorships, and leadership of these technologies
- *Organizational returns*
 - \$75M returned to the organizations through repayments, royalties, and equity sales
 - Maximize resource allocation and downstream savings, by permitting early failures through exploratory and evaluation tactics
 - Empower universities to continue to take risks that support the type of breakthroughs that define our present, and the type of innovation that will carry us into the future

Introducing Fund Types

The “gap” in *gap funding* refers to a vast shortage in capital and other commercialization support to identify, evaluate, and deliver university technology to the marketplace. Defining this “gap” too broadly (e.g. “Valley of Death” or “between basic research and the market”) oversimplifies the complexities of the situation and clouds the path to resolution; therefore, we propose and will demonstrate a more actionable, segmented system based on real observations.

Gap funding approaches to the larger “gap” can be broken down into a system of four fund types, each with individual characteristics, structures, and commercialization priorities. Adopting this vantage leads to a schematic model (Fig.6) with three main advantages:

- *Scalable*: Aligns with the existing university technology commercialization process, and other early-stage technology and product development processes
- *Customizable*: Opens up the opportunity for universities to create an individual approach that is based on the specific needs and capabilities of their own institutions at each stage of the innovation process
- *Relatable*: Creates a system that is identifiable by the all stakeholders of early-stage innovation (public and private), and allows them an opportunity to identify their role as a partner in the process

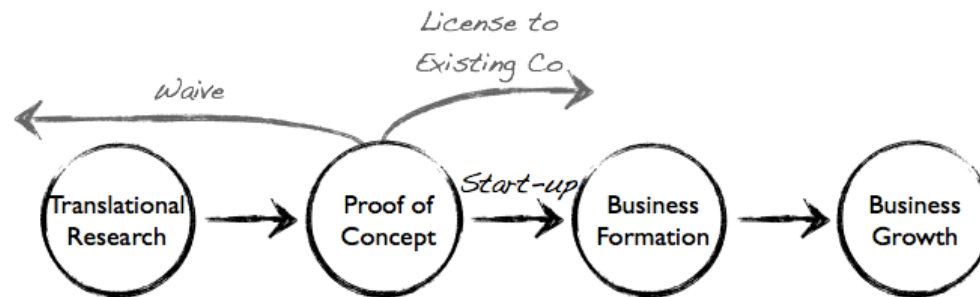


Figure 6: Defining the Gap

Advisory Board Make-up by Individual Funds

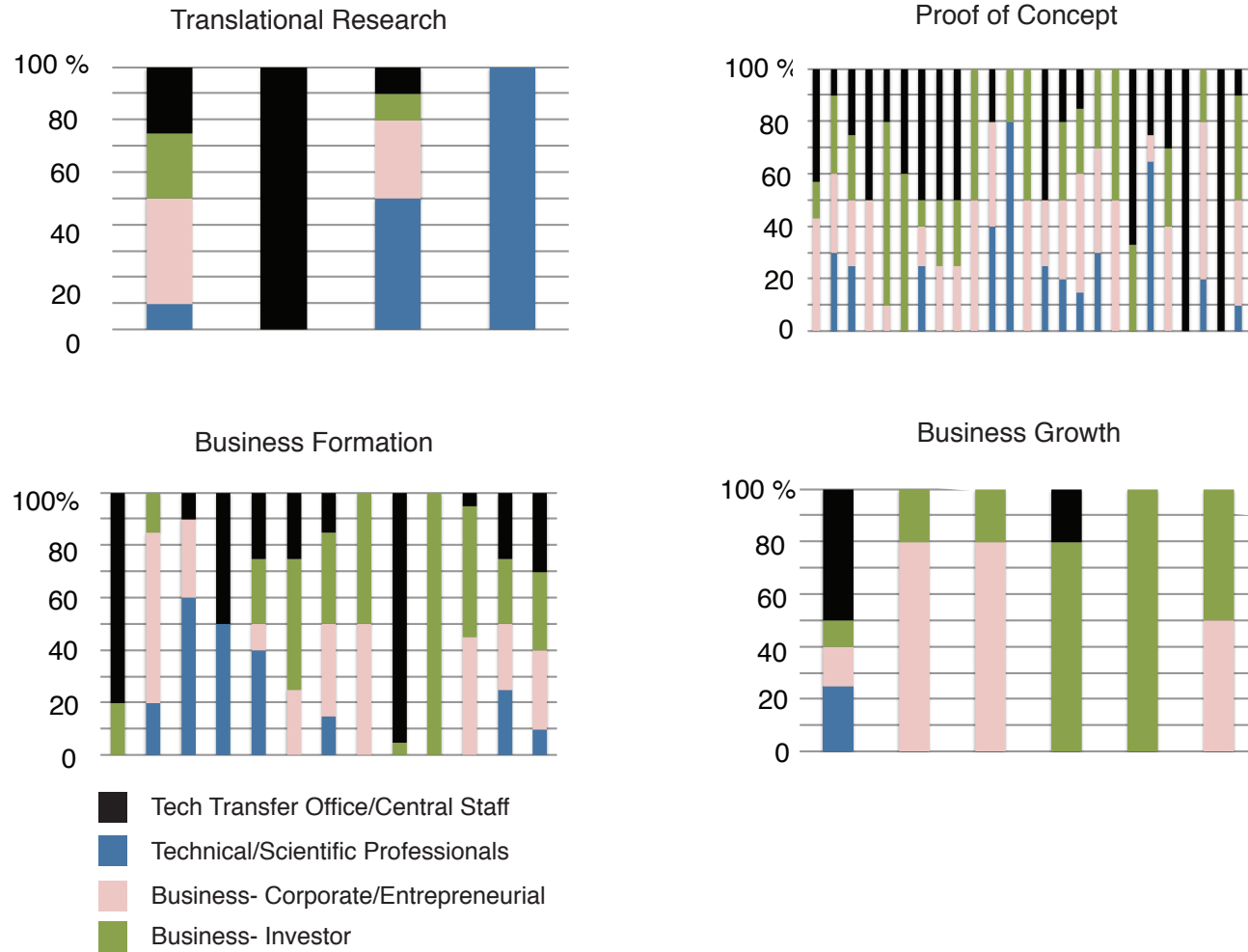


Figure 25: Advisory Board Make-up (Individual Funds)

The application of this framework provides a simple way to:

- observe the current state of a single or group of gap funding programs and compare it to other programs
- forecast the future opportunity relative to the experiences to date

Each program can be observed by current stage, which would be the percentage of total deals in all nodes, or by opportunity, by only taking into account those projects that have already been initiated.

As an example, a subsection of the survey participants supplied full process indicators for 1,742 projects (Fig. 31). Imagine that this was a single fund. As a representation of the current fund state, you might say that the fund has commercialized 33% of the projects (27% start-ups, 6% licenses to existing companies), decided not to pursue 40% of the projects, and is still evaluating 27%. However, based on the current commercialization rates of projects that have been initiated applied to all projects, we forecast that moving on the projects still in process would result in an opportunity of 145 more start-ups and 73 more licenses to existing companies.

Therefore, this exercise is not only a way to represent the current state of the gap fund results, but also an effective tool to illustrate opportunity to leadership.

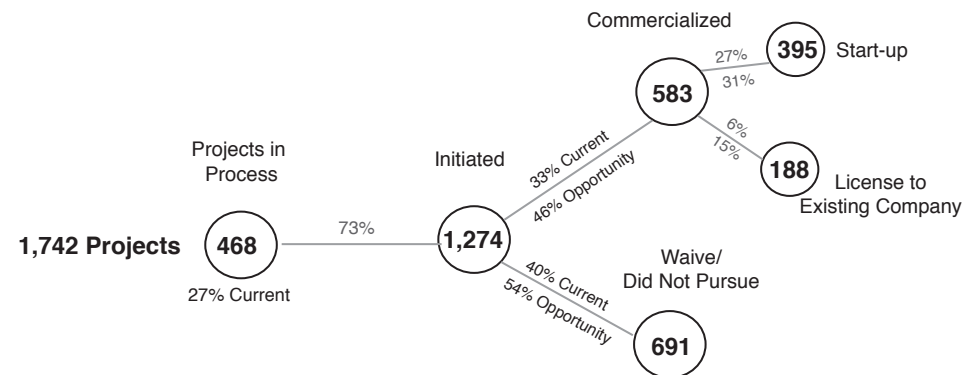


Figure 31: Process Indicators Participant Overview

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innovosource is an awareness and disruptive strategy firm that works with research universities and their key innovation partners (high-tech companies, early stage investors, and government agencies) to develop new opportunities for interaction.

As part of our vision to *shape the future* of our partners and clients, we launch regular *conversation-building initiatives* like *Mind the Gap*. These discussion platforms challenge convention through the exploration of emerging topics that are vital to the future of university innovation.

Our goal is to transition this knowledge into understanding that supports the success of our clients' operations, and that advocates for the university innovation community at a programmatic- and policy-level.

Thank you for joining the conversation. We look forward to working with you *for* the future!

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