SMALL BUSINESS INNOVATION RESEARCH PROGRAM (SBIR)

Introduction

SBIR is the federal government's principal R&D Grants program targeted to small science and technology based businesses. It is unarguably the best source of risk capital for developing promising new technologies and is probably the closest thing to the entrepreneurs Holy Grail of “free” money. Even more significant is that it can serve entrepreneurs as a pathway to equity financing.

Federal agencies with extramural (external) R&D budgets in excess of $100 million must earmark 2.5% of these funds for competitive grants to small companies. There are presently 11 participating agencies with a total of more than $2 billion available for SBIR annually. Agencies include:

Dept. of Agriculture
Dept. of Commerce
Dept. of Defense
Dept. of Education
Dept. of Energy
Dept. of Health and Human Services (NIH, CDC, FDA)
Dept. of Homeland Security
Dept. of Transportation
Environmental Protection Agency
NASA
National Science Foundation

Participating agencies publish one or more SBIR solicitations per year. The solicitation is essentially a grocery list of topics and areas where they are interested in sponsoring research. In the case of some agencies such as the Departments of Defense and Homeland Security the topics are very specific. These agencies have some very real, specific and immediate problems that they need your help in solving. At the other end of the specificity spectrum, the National Institutes of Health (NIH) and Department of Agriculture publish broader categories of interest and leave it to the applicant small business to specify the topic. Beyond those categories, NIH will entertain any proposal related to improving the nation’s health and is the only SBIR agency to consider unsolicited proposals.

Companies that think they have a technology that will address an agency’s problem or interests can develop and submit a Phase I proposal. Proposals are evaluated competitively and awards are made based upon relative merit. Emphasis is placed on technologies that both address the sponsoring agency's interest and also have commercial application.

Eligibility
To be eligible to participate, a company must be 51% owned and controlled by individuals who are U.S. citizens or permanent resident aliens. It must also be a small business with no more than 500 employees including affiliates. All Phase I and Phase II work must be performed in the U.S.

Three Phase Program
There are three phases to SBIR. The purpose of **Phase I** is to demonstrate the technical, scientific and increasingly commercial merit and feasibility of the proposed technology. Phase I grant awards vary in size by agency. They are typically up to $100,000, but sometimes more.

Upon successful completion of Phase I, companies can apply for Phase II. In the case of the Department of Defense, companies must be specifically invited to apply for Phase II. Awards are made based upon the results and potential of the Phase I work and the sponsoring agency's interest in the developing technology.

Phase II supports the main R&D effort and may include the development of a prototype. Phase II awards also vary by agency. They are typically up to $750,000, but sometimes more. The government is placing increasing emphasis on the commercialization of Phase II technologies and agencies now require the submission of a commercialization plan as part of the Phase II proposal.

One of the frustrations of working with the government is that an agency may do the same thing somewhat differently than other agencies. This is characteristic of SBIR where there are essentially 11 different SBIR programs rather than a single uniform program.

The chances of Phase I funding generally range between 1 in 5 and 1 in 8. These chances increase significantly for Phase II to approximately 2 in 5. In combination, Phases I and II provide substantial risk capital for developing a new technology. Beyond the immediate value of a much needed cash fusion, however, the real underlying value of the SBIR program is that it can serve as a pathway to equity financing to help support technology commercialization activities.

Entrepreneurs face the temptation of focusing too narrowly and almost exclusively on the development of their technology during the SBIR contract period. If, however, they simultaneously give attention to removing as much market and business risk from their venture as possible, particularly during Phase II, they can reach the point where they can begin to get on the radar screens of prospective equity investors and commercialization partners.

Phase III is commercialization. Companies that successfully complete Phases I and II are expected to commercialize their technology. There are, however, no additional cash awards for Phase III. Companies are generally expected by that point to be able to raise the funding they need privately, or through a government customer.

Participating small businesses typically retain the worldwide patent rights to any new technology. The sponsoring agency receives a royalty-free license, reserves the right to require the patent holder to license others under certain circumstances, and generally requires that the commercialized technology be manufactured in the US. Agencies' licenses are rarely invoked and are for the most part not a risk or threat.

The SBIR program is faculty unfriendly. Although university collaborations are allowed and encouraged, a full time faculty member cannot serve as a project's principal investigator (PI). The PI must be employed more than 50% of their time by the small business during the project period and cannot work full time for another organization. However, not all of that 50% is required to be spent on the SBIR project.

SMALL BUSINESS TECHNOLOGY TRANSFER PROGRAM (STTR)

STTR is essentially the younger, poorer sister of the SBIR program. Since STTR's inception, only the five federal agencies with the largest extramural R&D budgets in excess of $1 billion had participated including: Defense, Energy, Health and Human Services, NASA, and the National Science Foundation. New for FY 2006 the Department of Homeland Security became an STTR agency. New for 2007 the Department of Homeland Security was no longer an STTR agency because their extramural R&D budget fell below the $1 billion threshold. Total funding for the STTR program is approximately 10% of the funding available under SBIR.

The objective of STTR is to stimulate the transfer of technology from research institutions to the marketplace via cooperative research and development. The intent was that small companies would commercialize promising ideas that originated in universities and other non-profit institutions. The reality thus far has been that a majority of projects have focused on co-development of the small business's technology.

SBIR and STTR are structurally similar with three Phases and the same award levels. The primary differentiator of STTR is that at least 30% of the work is to

be conducted by a non-profit or academic research institution in collaboration with the small business. In addition, STTR is more faculty friendly than SBIR.

Under STTR and unlike SBIR, the principal investigator is not required by statute to be employed more than 50% of their time by the small business during the project period. Principal investigator employment is left to the agencies to determine and some have reduced the requirement. In the case of NIH, for example, the principal investigator is simply required to be spend at least 10% of their time on the project. This makes it easier for college faculty to participate.

About the author:
Randy Harmon coordinates SBIR/STTR training for the New Jersey Commission on Science and Technology. He is a technology commercialization consultant with the NJ Small Business Development Centers of Rutgers Business School. Randy is also Principal of Foundations Business Development Group, LLC. He serves as a coach to the CEOs of startup and early stage businesses helping them grow to the point where they can hire their own management team. He also helps entrepreneurs compete for Federal SBIR/STTR R&D grants and then commercialize their grant developed technology.

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