

Commercialization Needs of Small Business Innovation Research Firms



EXECUTIVE SUMMARY



U.S. Small Business Innovation Research Program

**COMMERCIALIZATION NEEDS
OF SMALL BUSINESS INNOVATION
RESEARCH FIRMS**

Produced by:

INNOVATION ASSOCIATES, INC.

1612 Washington Plaza North

Reston, VA 20190 USA

Tel: 703.925.9402

Email: ia@InnovationAssoc.com

Web: www.InnovationAssoc.com

Contributors:

Diane Palminteri, Principal & Author

Joan Bannon, Sr. Economist

Arturo Pagan, Research Associate

Nickoline McKenzie, Administrative Services

Redata, Inc., Data Processing Services

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OVERVIEW

Innovation Associates, Inc., under a Small Business Innovation Research (SBIR) grant, designed, administered, and analyzed results of a national survey sent to all firms awarded SBIR Phase II grants/contracts (FY 94-97) from all participating agencies. IA conducted the survey to assess business, technical, and financial needs of SBIR Phase II firms and services used by the firms to meet their needs. Of particular interest were firms potentially disadvantaged because of remote locations, small size, or minority ownership. The survey findings were intended to lay the foundation to help SBIR firms: (a) identify and understand their commercialization needs, (b) locate service providers, and (c) expediently access services. In response to findings, IA's current efforts focus on improving technology firms' access to a variety of resources and helping them meet commercialization goals. Efforts already underway include the Technology Business Resource Service (TBRS), a Web-based system to target and match the needs of small technology firms with federal, state, and local service providers.

Twenty-four percent of firms, or 615 firms representing 1,408 awards, completed the survey. The majority of respondent firms employed 15 or fewer people, and about one-third of respondent firms employed five or fewer people. Almost half of all respondent firms had received awards from the U.S. Department of Defense and more than one-fourth had received awards from the National Institutes of Health. Based on distribution by year, agency, and minority status, respondent firms appeared to be similar to that of most SBIR Phase II firms (FY 94-97).¹

HIGHLIGHT OF SURVEY FINDINGS

Need for Business, Management, and Technical Assistance

- Sixty-three percent of firms said they needed business, management, and/or technical assistance to develop or produce SBIR-related products, processes, and services.
- Very small firms were much more likely than larger firms to need assistance. Almost three-fourths of firms with five or fewer employees said they needed some type of assistance.

¹Data on the distribution of all SBIR Phase II firms and awards by agency, fiscal year, and minority status were provided by the Office of Technology, U.S. Small Business Administration.

- More than one-third of firms that said they needed assistance could not obtain all the assistance they needed. This was true much more often for very small firms.
- The greatest portion of firms wanted assistance with (in descending order): (a) patenting and licensing, (b) partnering with other firms, (c) commercialization planning, and (d) market assessments.

Sources and Importance of Assistance

- Almost three-fourths of firms that met their needs in one or more areas did so by hiring a private consultant. More than one-fourth of firms also received assistance from universities or community colleges.
- Of the firms that received some type of assistance, 88 percent believed that this assistance had helped or was likely to help them "produce and sell SBIR-related products, processes, and services or shorten the time needed."
- Of the firms that received assistance, the greatest portion reported that: (a) patenting and licensing, (b) partnering with other firms, and (c) R&D-related technical assistance were "very important" in helping them commercialize SBIR results.

Need for Capital to Develop and Commercialize SBIR Results

- More than half of firms that tried to obtain capital to develop, produce, and sell their SBIR products, processes, and services, had not succeeded.
- Firms that reported selling SBIR-related products, processes, and services were more likely to have obtained all the capital they sought.
- Very small firms of five or fewer employees were more likely to need capital than larger firms and, when they sought capital, were less likely to obtain it. Minority-owned firms also were more likely to need capital and less likely to obtain it.

Sources of Financing

- The SBIR firm's owner was the greatest source of financing for SBIR development and commercialization. Firms that received SBIR Phase II awards in FY 97, reported that venture capitalists and angels were the second greatest source of financing.
- Very small firms, woman-owned firms, and minority-owned firms were much less likely than other firms to obtain financing from banks and financial institutions, and venture capitalists and angels.

CONCLUSIONS AND RECOMMENDATIONS

IA's survey findings show that many SBIR firms have multiple business, technical, and financial needs, and some of these needs are not being met. This is more often true for very small firms, and woman- and minority-owned firms. Whether SBIR firms have access to business and technical services such as patenting and licensing, marketing, and corporate partnering may affect the firms' ability to commercialize results. Almost all firms that report selling SBIR results said that business and technical assistance were very important in helping them develop and sell these results. Very small firms operate at a disadvantage; they are more likely than larger firms to need most types of assistance, and less likely to receive it. Very small and minority-owned firms also find it more difficult to obtain private financing, particularly angel and venture capital, to commercialize results. The following recommendations stem from these and other IA's findings. Many recommendations incorporate direct input from SBIR firms.

- 1) **Implement systems to identify and link service providers to meet SBIR firms' needs.** IA's survey showed that SBIR firms need services in many business and technical areas. Thousands of service providers are available to help small technology firms nationwide, and yet these firms often find it difficult to locate and access service providers. Firms must be able to identify specific needs, expediently locate and target service providers to meet specific needs, and easily access those providers.
- 2) **Help very small firms and minority-owned firms obtain financing from private sources.** The IA study showed that very small firms and minority-owned firms less often obtain financing when they seek it than larger firms and non-minority-owned firms. Very small, minority-owned, and woman-owned firms need greater assistance to obtain financing, particularly from venture capitalists and angels, which are becoming an increasingly important source of financing for SBIR commercialization.
- 3) **Provide additional assistance in marketing, commercialization planning, and patenting and licensing to SBIR firms.** Firms consistently reported that they needed assistance with marketing, commercialization planning, and patenting and licensing, and that these services were very important in helping them develop and commercialize SBIR results. Future services to SBIR firms by agencies and organizations should focus on these key areas.
- 4) **Establish a corporate partnering system.** Firms also consistently rated corporate partnering as one of the top three services they considered "very important" in helping them commercialize SBIR results. SBIR Phase II firms, particularly very small firms, need assistance with identifying potential partners and help in developing agreements.

- 5) **Implement a system of SBIR mentors.** A number of firms suggested that a mentoring system would help them. Through the Federal and State Technology Partnership program (FAST), some states are implementing mentoring programs. Any mentoring system should match commercially successful SBIR firms with new firms, and provide help in multiple areas. These areas include preparing Phase II proposals, marketing, corporate partnering, and seeking private investment.
- 6) **Help SBIR firms identify potential end-users of SBIR results, including federal and state government procurement opportunities.** Many firms said they wanted more assistance from government and other sources to help them identify potential buyers of SBIR results. Identifying purchasers of SBIR products, processes, and services, along with other marketing services, could give SBIR firms an important boost in a traditional area of weakness. DOD recently has taken a lead in this area, and other agencies should follow their example.
- 7) **Agencies should make use of provisions that allow funding for technical assistance.** Agencies are permitted to use \$4,000 per firm of SBIR funds for technical assistance, and yet few agencies have taken advantage of this provision. IA's findings suggest that more agencies should make use of these funds to provide services to SBIR firms. Policy makers also might consider ways to allow more flexibility in the use of SBIR Phase II funds for market assessments and other "pre-commercialization" activities.
- 8) **Implement SBIR Phase III.** Numerous firms reported that some government funding for Phase III was important in promoting commercialization of SBIR results. Moreover, survey findings showed that it was difficult for very small technology firms to attract private investment at early stages of development. Some funding of a Phase III program, particularly for very small firms, may increase their chances of commercializing SBIR results by filling a gap in private investment and providing "seed money" to leverage additional private investment.
- 9) **Collect better and more consistent national data on SBIR firms.** As part of the survey analysis, IA attempted to retrieve data on firm size and other characteristics for all SBIR firms, and found that data were not available from all agencies. Better data collection across all participating agencies is needed to identify SBIR program issues and gaps. Data collection on firm size, minority status, type of effort, and SBIR sales should be minimum specifications. Any new data collection mechanisms also should include routine inquiries about firms' needs, access to services, and an opportunity for firms to identify program weaknesses and provide suggestions.

FOR MORE INFORMATION

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Direct general comments to:
IA@InnovationAssoc.com

Innovation Associates, Inc.
1612 Washington Plaza N.
Reston, VA 20190 USA
Tel: 703.925.9402
Fax: 703.709.9733