

Information for Developers

Abstract

Commercialization of technologies and technology applications is a complex process. Many small, for-profit companies choose to pursue Small Business Innovation Research (SBIR) grants to provide funding for technology research and development. These grants are not easy to get, there is a great deal of competition, research and development plans must be specified, and business planning are all part of a sound SBIR application. The programs that fund SBIR grants will review each proposal to ensure it has potential to succeed in the commercial marketplace before funding an application. As a result it is vital that the companies that apply for these grants must properly prepare for successful commercialization. The resource section will provide links to valuable tools to help you along in this process.

Understanding the Big Picture of New Product Development:

Before developing even the most niche-oriented product, and regardless of where the effort begins and ends, the inventor/developer needs to be aware of the full range of activities and actors involved in the commercialization process. The process is the subject of many books; two of the best are located in the recommended reading portion at the end of this document. Until you've read both of these two books, you may not be fully prepared to make the necessary decisions about when and how to proceed.

Documenting and protecting your work:

In order to protect the intellectual property involved in the development of your technology, accurate and thorough records must be kept. The inventor should keep a notebook of all work related to the development of the technology. The notebook must be bound with pre-numbered pages and should begin on page one with an explanation of the idea that will direct future development. All of the notes, drawings, and work related to the development of your idea should be kept sequentially in the notebook. Any loose information (i.e. drawings, etc.) should be stapled into the book in its proper order. Do not skip lines and do not erase erroneous information - simply put a line through it to discount it. This notebook becomes your invention diary.

The developer should draft a non-disclosure agreement to protect not only the contents of the invention diary, but also any discussions you have with outside parties regarding your invention. Links to sample forms are provided in the resources section of this document. It is important that the inventor have the entries in the invention diary read, signed, and dated by people (preferably 2) who are not relatives or co-inventors. This will provide evidence that the information in the invention diary has been properly recorded and maintained. The United States patent system is based upon first to invent rather than first to file. Therefore, an inventor must keep be diligent about recording and verifying the work done in order to prove ownership in a court of law.

From this point forward, you must be careful about where you divulge information about your invention. Researchers, under pressure to publish the findings of their work, sometimes rush to print a description of their invention in technical journals or magazines. You should be aware that publishing information regarding your invention begins a time bar of one year. During this one year period, you must file your patent or risk having your invention become public domain. That is you will no longer be able to patent your device after one year from date of publishing and anyone can use the information you disclosed. Public disclosure with the lack of intellectual property protection may prevent you from benefiting financially from your invention.

SBIR applications will request that you note any information that is contained in your proposal that may be proprietary. This will prevent the public release of the information whether or not the proposal is excepted. It is important that small companies who submit these proposals are diligent about the identification of proprietary information. The RFP itself should outline how this information should be marked within the application.

Prior Art Searching

Many of the technology applications developed today are simply re-inventions of pre-existing technologies. For example, 70% of the inventions that have been submitted to the Technology Transfer Rehabilitation Engineering Research Center (T2RERC) fall into this category. Another 25% of the inventions received by the T2 RERC are novel, but no more useful than existing products. In order to avoid spending a great deal of time and money to develop technologies that already exist, the inventor should conduct prior art searches before moving forward into research and development.

Is your product already in the marketplace? To answer this question you can begin by searching the Internet, product catalogs, and stores for related products. Focus on companies who make similar products to the one you are developing or who you would envision making similar products. Visit retailers, professionals, or prospective users who have experience in your area of interest and inquire how individuals currently meet the needs that your technology would enable them to meet. Websites such as Abledata or Assistivetech.net to search for related programs. Remember that at this stage of development, your conversations with anyone outside of your development team should focus on the function or need your product addresses, and not on design information regarding your invention. If you require or desire a third party evaluation of your invention, contact the Innovation Institute, home to the WIN Innovation Center. This Center is an inventor assistance service that provides inventors, entrepreneurs, and product marketing or manufacturing centers with an objective third-party analysis or the risks and potential of ideas, inventions, and new products.

When conducting your prior art search it is also advisable to utilize the patent search tools offered by US Patent and Trademark Office (USPTO) and Delphion to conduct initial patent searches. When performing this search use generic terms, and not the marketing name you have given your device.

Cost and Complexity of Building your Invention

Once satisfied that your invention is truly new and unique, it is necessary to examine the feasibility of the design of your invention. Phase I of the SBIR program provides funds to prove that your concept is feasible. You must be able to reduce the idea to practice in the form of a prototype in order to move beyond Phase I of the grant. A great deal of effort is involved in creating a prototype and the Phase I grant provides a window of only six months to complete the work. Therefore, decisions regarding materials, suppliers, original equipment manufacturers should be made as early as possible. This planning will not only strengthen your proposal, but will also facilitate the composition of the technical planning section of the SBIR grant application. You may wish to include an evaluation of the prototype device through focus groups in your phase I application to ensure that potential customers have input into the final design of the product.

Assessment of the Market

The SBIR funding agencies will expect a proper assessment of the market for the technology you are developing. The assessment will include identification of the target market, market projections, market growth, distribution channels, and a competing product matrix benchmarking competing products against the product you are developing. Focus groups are ideal to determine the relative importance of product features, purchase intent, price point validation.

Partnering

As a researcher or developer, starting your own business may not be a priority for you. However, in order to apply for an SBIR grant, the principal researcher must be employed by a small business. Establishing partnerships with established companies allows you to focus on the research and development (R & D) portions of technology development. Partnering with companies who have expertise in your focus area to produce and/or distribute your product can also strengthen an SBIR application. When seeking a partner it is advisable to have a business plan that highlights both the market potential of your technology and a description of the technology you wish to develop. If that description is proprietary, you must have the company sign a non-disclosure agreement. Your market research should provide you with an idea of which companies to approach for potential partnerships. If your technology can enhance the product line of the company you approach, a partnership will be viewed as attractive to the company. In other cases, companies own research and development team may not be interested in any technology developed outside of the scope of their R & D teams. Choose the people who you would like to partner with carefully, an ill-advised choice could delay or prevent commercialization.

Resources

SBIR funds are set aside by federal agencies to encourage innovation in small companies (less than 500 employees). Funding priorities are advertised in the form of Requests for Proposals by the granting agencies. For a full list of agencies that fund SBIR work it is advisable to visit the Zyn Systems website, they provide links to all agency SBIR programs. The Small Business Administration also offers a great deal of information on SBIR proposals. The Fact Sheet on SBIR provides additional information on this topic.

Reference List:

A/T Product Information:

Abledata: <http://www.abledata.com>

Broad list of AT products presently or previously in the marketplace.

Assistivetech.net: <http://www.assistivetech.net>

Searchable data of assistive technology information.

Invention Evaluation Service:

WIN Innovation Center: <http://www.innovation-institute.com/home.htm>

Provides objective assessments of new innovations

Patent Databases:

United States Patent and Trademark Offices: <http://www.uspto.gov>

Comprehensive information on patents and trademarks & searchable databases.

Delphion: <http://www.delphion.com/>

Another source of patent information.

Information on the SBIR Program:

Small Business Administration: <http://www.sba.gov/SBIR/>

Excellent overview of the SBIR program requirements and application information.

Zyn Systems: <http://www.zyn.com/sbir/>

Listing and links to all agencies that fund SBIR grants.

Recommended Readings on the Product Development & Commercialization:

Jolly, V.K. (1997). Commercializing new technologies: Getting from mind to market. Boston, MA: Harvard Business School Press. ISBN # 0-87584-760-9.

Kahn, K. (2004). The PDMA handbook of new product development. 2nd ed. NY, NY: John Wiley and Sons. ISBN # 0-471-14189-5.

