

TUTORIAL #21

Developing a Phase I DOE Commercialization Plan

COMPONENTS OF A COMMERCIALIZATION PLAN

An essential part of your DOE Phase I proposal is the Phase I Commercialization Plan – please keep in mind that without it, your proposal will not be reviewed. This plan is a two-page document that addresses the following four topics:

1. Market Opportunity
2. Intellectual Property
3. Company/Team
4. Revenue

WHY IS A COMMERCIALIZATION PLAN IMPORTANT?

Let's begin by discussing why a commercialization plan is important and then explore how to develop a good commercialization plan.

When the Department of Energy (DOE) makes an SBIR or STTR award, it is doing so with taxpayer money. The purpose for funding the research is to generate results that will have a positive societal

benefit. This goal can only be met if the technology is successful and if it is commercialized, or brought to market. Most research and development firms have limited experience with commercialization. Therefore, commercialization planning will require consistent attention concurrent with the development of the technology. Incrementally, with additional rounds of funding, DOE will require that the grantee provide more details on how they will engage others and/or change their company in order to successfully commercialize the technology – that is, bring the product to market. Let's look at the four sections that you are going to write – starting with the sections that are easiest to address – but not in the sequence in which they will ultimately be presented in the commercialization plan.

COMPANY/TEAM SECTION

It may be a good idea to start with a discussion of the company or team section. Before writing this section, articulate the following items, jotting them down in a word file:



There are four parts to the commercialization plan:

**No. 1
Market
Opportunity**

**No. 2
Intellectual
Property**

**No. 3
Company/
Team**

**No. 4
Revenue**

- » When was your company founded?
- » What experience do you have with bringing products to market – either through this company or through other companies with which you have worked?
- » Does your company currently market, manufacture, or license technology? Describe what you do.
- » What is the mission of your company?
- » What is the vision for the future?
- » What experience do you have with marketing to this target market?
- » What commercialization strategy appears to be the best for bringing this product to the target market?
- » If your commercialization experience looks weak, consider other ways that you can complement your experience by working with others.

After you have completed this activity, review the sample commercialization plan that DOE has provided on its website under “Applicant and Award-ee Resources” and review the company section. You will see that in the first paragraph they talk

honestly about their experience with commercialization. In the second paragraph, the commercialization strategy is articulated with a brief explanation provided. Finally, in the last paragraph the individual that will be responsible for spearheading the commercialization activity is identified and the role that they will play is clarified. Now that you have reviewed your situation and looked at the sample provided by DOE, draft a half-page company/team section.

INTELLECTUAL PROPERTY (IP) SECTION

The next section to consider is the intellectual property (IP) section. Begin by reviewing the IP section in the example provided by DOE. You will see that the author shows evidence of having explored the patent literature; the author states what has been found, and then presents the IP strategy that the company will use to protect their IP. It is important to consider that there are multiple ways to protect IP. Although patents are often used to protect IP – when it comes to software or algorithms, it is more common to use a combination of copyright and trade secrets because of how rapidly things



change. Be sure to consider what the appropriate form of IP protection is for your IP.

Sometimes, companies present excuses as to why they are not protecting their IP via patents, when this is the appropriate course of action. Often, the reason presented is lack of funds. Please keep in mind that DOE will allow you to list up to \$15,000 in a Phase II proposal as a legitimate expense for IP protection. Also, keep in mind that if you plan to license your IP to another – IP protection is very important.

Before drafting the IP section, follow the same approach as you did with the company section. Jot down information regarding the following items in a Word document:

- » Do you have an IP attorney? List name and address.
- » Do you have related technology and how have you protected it? If you have protected via patents – list patent pending number(s) or registered patent number(s)
- » If you have protected related IP using other methods, describe the method that you have used and why that approach was taken.
- » If appropriate, conduct a brief patent search of issued and pending patents using the U.S. Patent and Trademark Office site: <http://www.uspto.gov/patents-application-process/search-patents>

After you have prepared your notes, draft the IP section. A couple of important things to keep in mind: (1) Don't indicate that you have submitted a patent application if you haven't. There's a big difference between thinking about applying for a patent and actually doing it; (2) Don't indicate that you have a patent pending or issued patent unless you can present an associated number; (3) Other forms of IP also have value: trade secrets, registered copyright, and trademarks.

MARKET OPPORTUNITY SECTION

The market opportunity section is much more difficult to draft, as it relies on gathering information from other sources. Please keep in mind that at Phase 0 you are asked to take an initial look at market opportunity. At this point, you are taking a very quick, somewhat superficial look at the market opportunity. There are various ways that you can approach this challenge. First, the concept of market implies the potential number of entities that have problem X or could benefit from product Y. Market opportunity is expressed in dollars or units. For example, one could say that the market for X product is \$500M over the next 10 years or that data available from X source indicates that Y organizations/individuals have this problem annually. One could also say that industry experts expect a cost savings of \$350M a year through the adoption of this new manufacturing method. Any of these are ex-

pressions of market opportunity. What is important to keep in mind is that market opportunity is not strictly for your product – but for a class of products/solutions that can be provided by you and all competitors. In other words, a market opportunity is NOT the same thing as your sales projection. If there is a need – then it is one that you and your competitors can all hypothetically fill.

So how do you find this information? Let's build on the example that DOE provided of "battery separators for lithium ion batteries." We'll start our search in Google and search in a very simple way using the phrase "market for battery separators" in quotes. Please review the accompanying demo to see how one may go about finding information that is needed. Once the information has been found, one may want to look again at the DOE example of the commercialization plan and may notice that in the first paragraph of the market opportunity section that the proposer clarified what their product was and discussed their competitive advantage. In the second paragraph, the estimated size of the market opportunity was mentioned as well as those factors that were contributing to market growth. The company identified who their customers would be – i.e., who would buy directly from them. Based on the value proposition identified for the targeted customer, an estimate was made of the market penetration that the company could achieve. Market penetration is the same as a sales projection, but represented as a percentage of the entire market. Here you have to use some judgment and perhaps refine your market if it is not reasonable to think that you can penetrate the global market using the strategy that you articulated at the outset.

This part of the planning process is most enjoyable because a quick search opens up a world of possibilities and enables one to quickly find information that can be used to develop one's commercialization strategy.

Now that you have gathered the information, draft the market section. Include three paragraphs: (1) In the first paragraph, restate what the product is and discuss your competitive advantage. (2) In the second paragraph, name the market that you

will be competing in – such as the "battery separator market for lithium ion batteries". Include an estimate of the size of the market opportunity and a brief discussion of those factors that are contributing to market growth. (3) In the third paragraph, clarify who your customers will be and where you and they fall in the supply chain. Also include the names of some of the competitors in this market.

REVENUE STATEMENT

The last element of the commercialization plan is a revenue statement. This is frequently the hardest part of a Phase I commercialization plan to write – because at this point you may have very little upon which to base your projections. However, the reason this section is essential is that it forces you to think about whether or not there is a need and if, hypothetically you could have an impact on the economy using the strategy you have identified. How should you approach this when you have so little to go on? Let's take a look at the following statement from DOE's Funding Opportunity Announcement (FOA) that must be included in as part of your Phase I commercialization plan. Failure to include this one statement will disqualify your application from further evaluation at DOE.

You MUST contain this statement in the commercialization plan:

"(COMPANY NAME HERE) estimates sales revenues of \$_____ and licensing revenues of \$_____ during the first 10 years of commercialization."

The question becomes what numbers do you put in the blanks? Do you have to provide a substantiation for the numbers in this commercialization plan? And, what if you are not going to use both strategies (direct sales and licensing) – then what do you do? Please see the accompanying demo to see how information can be found, again, using Google to complete this section.

Now that you have considered all the information required to draft the commercialization plan and have written sections, please sequence them in the manner that DOE has requested.