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PHASE III COMMERCIALIZATION



DAWNBREAKER

- Worked with over 4,400 SBIR, STTR projects since 1990
- Provide Commercialization Assistance Programs through various Agency programs
 - **Navy, NSF, NASA, DOE, DOC, DoD, DHS**
- Companies we have assisted in SBIR program have received in excess of \$2B Phase III funding



What is Commercialization?

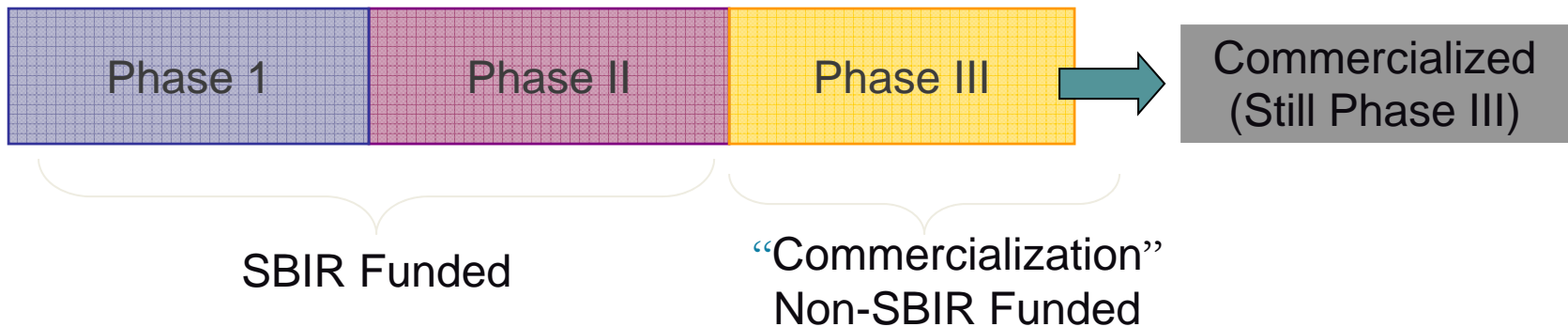
» “The process of developing a product or non-R&D service for sale (whether by the originating party or by others) in Government and/or private sector markets.”

-DoD SBIR Solicitation



What is Phase III?

Small Business Innovation Research (SBIR)





What is a commercialization strategy?

Not defined in solicitations...but alluded to

“...your company’s strategy for converting your proposed SBIR research into a product or non-R&D service with widespread commercial use - including private sector and/or military markets.”

- DoD SBIR solicitation



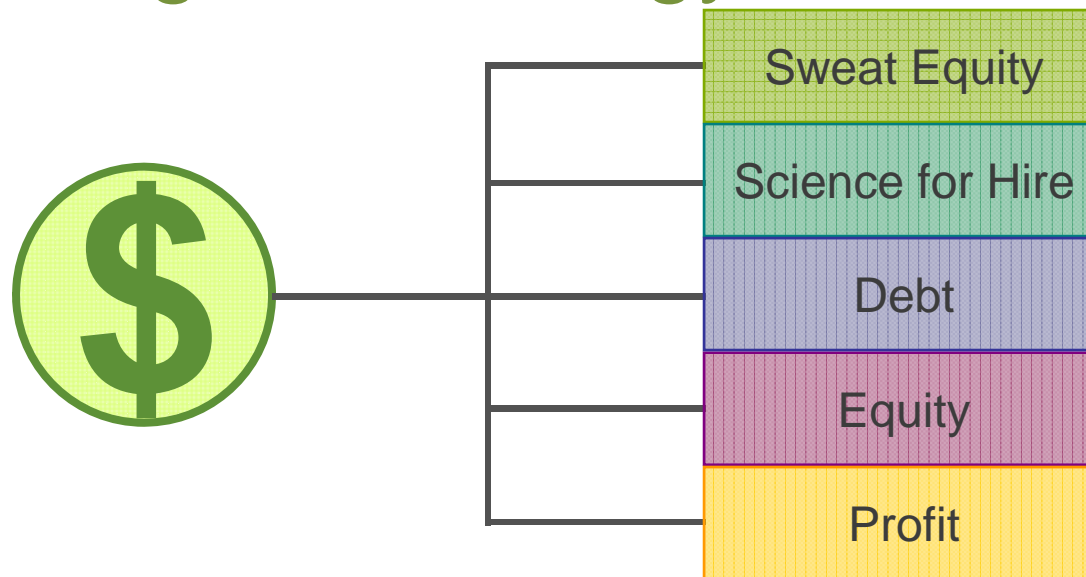
Commercialization Strategy

The series of financing options that a company entertains to move its technology from concept to the marketplace

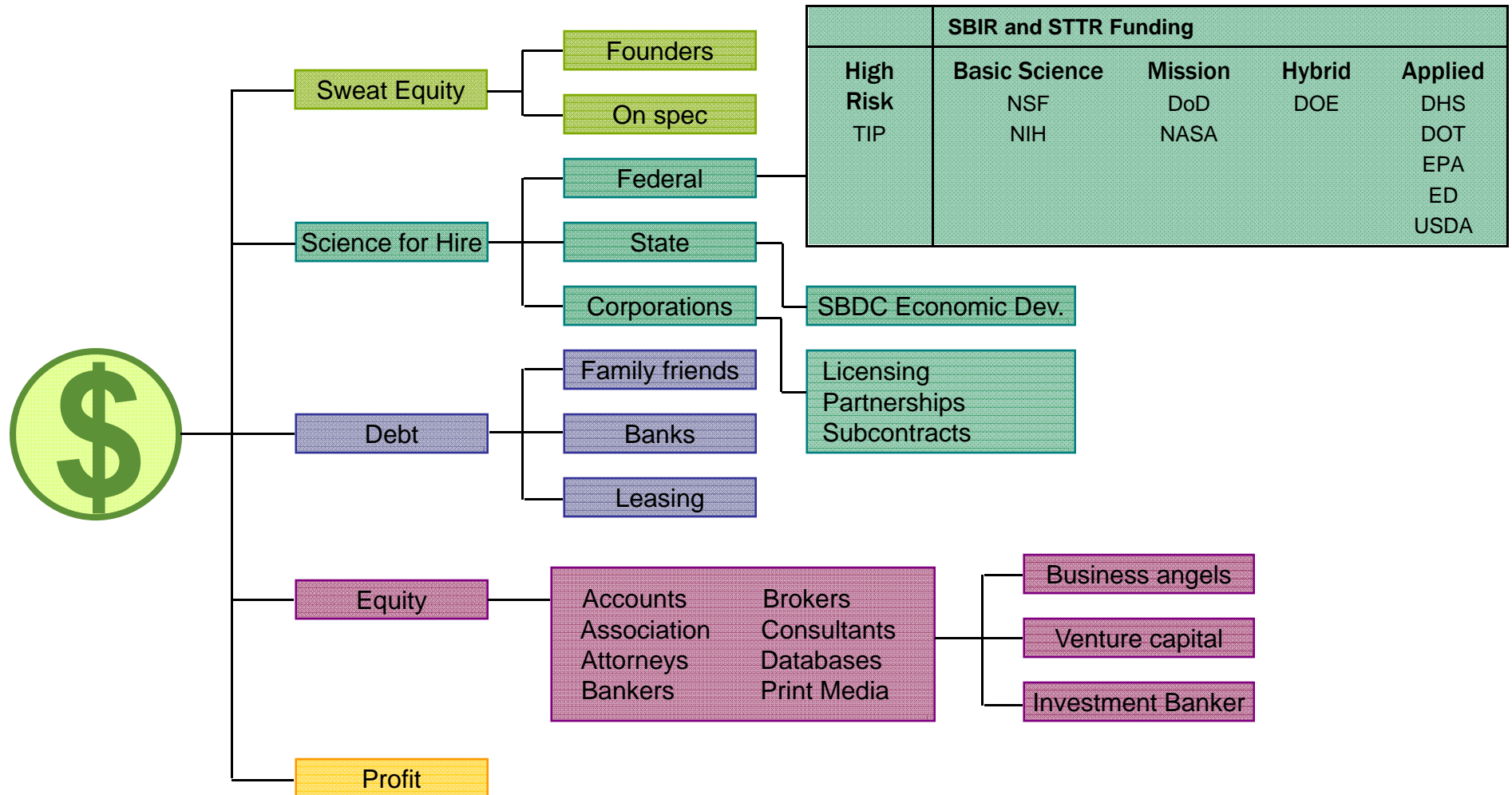
Milestones	How funded?
Concept Development	Phase 1
Business Case Analysis	G&A
Prototype Development	Phase II
Intellectual Property Protection	Retained Earnings
Beta Testing	Corporate Partners
U/L approval	Retained earnings
Test Market Introduction	???
Marketing	???
Scale Up Production	???



Methods for Financing a small high technology firm



Financing Roadmap





Strategy selection process

- » **Iterative ... build and test**
- » **Articulate at the outset and**
- » **Revisit**
 - as you collect additional market data
 - as you develop the business case
 - during negotiations with partner/investor



Factors which effect your commercialization strategy

- » **Mission**
- » **Vision**
- » **Business philosophy**
- » **Your current situation**
- » **Window of opportunity**
- » **Competitors**



Mission

» Identity Statement

- Business functions
- Products and technologies
- Markets served
- Sustainable competitive advantage

» For a company or a strategic business unit (SBU)



Sample Mission Statement

- » **“Soarrell Medical Systems develops, produces, markets, and supports proprietary, patient-oriented software, biometric smart cards and readers which interface with computerized patient record (CPR) systems. We offer outstanding customer support and share the financial risk with medical practitioners. We are dedicated to making it easier for physicians in private practice to spend more time providing quality care.”**



Test your skills...

- » ***“Our mission is to engage in research and development activities that we enjoy until we retire.”***
- » ***“We conduct innovative, cost-effective research in areas in which we have expertise.”***



Elements of Vision

» 5-years out

- Financial goals - revenue goals, profit margin goals
- Market goals - customers served, market niche, geographic region, market share
- Products and services
- Image- How will you be perceived by customers, competitors, employees, community



Typology of Visions

	Revenues	Employees	Purpose	Pubic/Private
Life Style	\$3M	20	Support owners	Private
Foundation	\$10-30M	200+	Start new industry	Private
High Potential Venture	\$30 - \$100 M	500+	Create value	Public

The numbers are meant to be relative, not absolute



Current situation

- » **Financial health**
- » **Sustainable competitive advantage**
- » **Stage of product/technology development**
- » **Management**
- » **Market readiness**
- » **Risk: technology, market, management**
 - » **Technology Readiness Level [TRL]**
 - » **Manufacturing Readiness Level [MRL]**
 - » **Business Readiness levels [BRL]**



Sample Strategy - Licensing

VISION: Life-Style Company

BUSINESS PHILOSOPHY

Do what I enjoy

MILESTONES	FUNDING MECHANISM
Start Up	Sweat equity
Concept Development	SBIR
Intellectual Property Protection	Retained Earnings
Application Development	Licensee
Production	Licensee



Sample Strategy – Strategic Alliance

VISION: Foundation Company
R&D and Manufacturing

BUSINESS PHILOSOPHY
Conservative

MILESTONES	FUNDING MECHANISM
Start-Up	Sweat equity
Concept Development	SBIR
Intellectual Property Protection	Retained Earnings
Prototype Development	SBIR
Production Scale Up	Equity investor, converted to debt
Marketing and Sales	Strategic ally



Sample Strategy - IPO

VISION: High Potential Venture

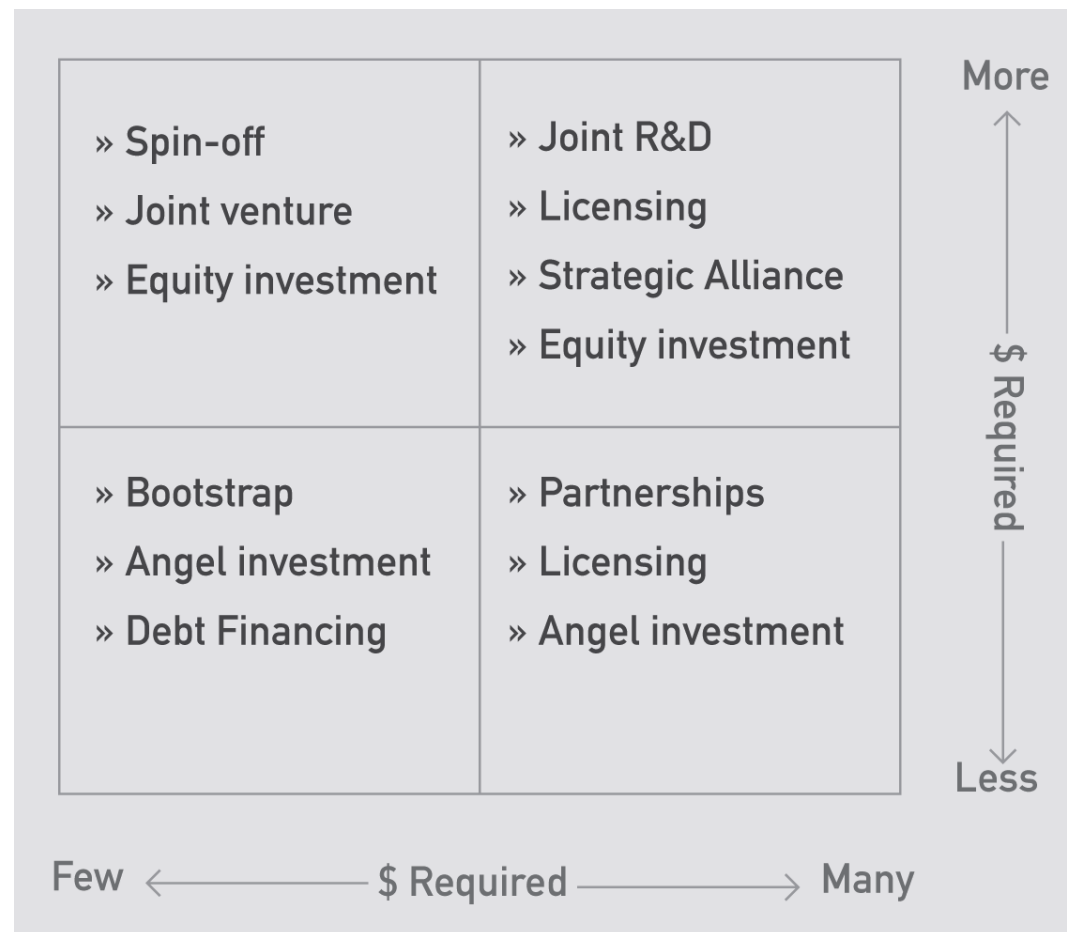
BUSINESS PHILOSOPHY

I want to try it all

MILESTONES	FUNDING MECHANISM
Concept Development	Federal funding
Prototype Development	Seed financing from angels
Market Test	Retained earnings
Market Introduction	Equity investment from Fortune 500
Scale Up	Second Round Financing from VC
New Facility	Private Placement
Expansion	Line of credit, profits
Market Penetrations	IPO



Financing options as a function of applications and resources required





Everyone copies NSF

COMMERCIALIZATION PLANS



Winning with New Products – Robert Cooper

- » **Step 1: Initial screening**
- » **Step 2: Preliminary market assessment**
- » **Step 3: Preliminary technical assessment**
- » **Step 4: Detailed market study**
- » **Step 5: Predevelopment business/financial analysis**
- » **Step 6: Product development**
- » **Step 7: In-house product test**
- » **Step 8: Customer test of products**
- » **Step 9: Trial sell**
- » **Step 10: Trial production**
- » **Step 11: Precommercialization business analysis**
- » **Step 12: Production start-up**
- » **Step 13: Market launch**



Technologists view (small biz)

»Step 1: Initial screening

- »Step 2: Preliminary market assessment
- »Step 3: Preliminary technical assessment
- »Step 4: Detailed market study
- »Step 5: Predevelopment business/financial analysis

»Step 6: Product development

- »Step 7: In-house product test
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»Step 13: Market launch



All Agencies

- **Require a Phase I and a Phase II Commercialization Plan be submitted with their proposal**
- **They vary in length and complexity**
- **Over time they have in general become more complex and detailed**
- **NSF has been the leader**



Our Recommendations to Proposers

- **The Commercialization plan is a business case**
 - Not just a collection of information
 - You have to address implications of information
 - It is not a business plan
 - The latter would contain detailed operational plans, expanded pro formas, and more detailed discussions
 - Planning is iterative and this level of preparation sets the stage well for further development
- **Make the commercialization plan a stand alone document**



NSF Phase II

- 15 pages including Letters or Support
- Four Primary sections
 - Market Opportunity
 - The Company/Team
 - Product/Technology and Competition
 - Finance and Revenue Model



1.0 Market Opportunity

1.1. Market need

- What **customer need** is addressed (**who cares?**)
- Identify how that need is currently addressed and its shortcomings
- Indicate the degree of “pain” or urgency for a solution
- Include a transition to introduce the SBIR project being proposed

1.2. SBIR Project and Expected Outcomes

- In layman’s terms describe succinctly what product or service you are planning to deliver based on the innovation
- **Describe what is innovative about your approach**
- What was accomplished in Phase I and introduce key technology objectives of Phase II



1.3 Industry Overview

- **Provide a brief description of the industry structure and where you fit within it**
- Discuss the implications for your business model
- Describe your **immediate customers** and provide specific examples of potential or actual customers (name organization) Describe the types of channels your company will employ to reach the targeted customers when you are ready to initiate sales

1.4. Market

- Market definition
 - Geographic location (domestic, international, both)
- Market size
 - Differentiate between broad and **niche** market
- Market growth and trends
 - Describe any hurdles that will need to be overcome to enter this market



1.5. Commercialization Strategy

- Discuss **the strategy** to be used to generate revenue from your innovation (i.e. how will you bring the product/service to the market?)
- Describe your plan for “exiting” the investment

1.6. Impact

- Expand upon the significance by talking about the Societal, Educational, and Scientific benefits (NSF’s mission), as appropriate.
- Add a concluding statement regarding overall significance of the work



2. The Company/Team

2.1. Origins of Company

- Be sure to indicate the corporate structure

2.2. Brief Description of Company

- **Mission (fundamental – defines business functions)**
- Core competencies
- **Table showing revenue sources and total revenues for the past 3 years (See sample table)**
 - Be sure to indicate sources of operating capital (product sales, consulting/services, license revenues, R&D grants/contracts and others)
- Describe how the company is structured financially being sure to identify current sources of investment, as appropriate
- **Provide a forward looking statement regarding the company's vision and how this technology relates to it (mentioned 4X in reviewer's criteria)**



2.3. Management Team and Personnel

- Provide an overview of the organizational structure and the number of employees
- Introduce the company's management, highlighting the credentials of personnel responsible for taking this innovation to market
 - Indicate if the management team has taken similar products/services to market
- Introduce other sources of guidance e.g. Board of Directors, Board of Advisors, Technical Advisors, Legal Counsel and provide details on names, affiliations and expertise of these sources
- Describe what experience/capabilities the team lacks and how will this be addressed during the Phase II effort and beyond?



3. Product/Technology & Competition

3.1. Product/Technology

- Provide information **gathered from customer interviews** to verify that the advantages/benefits of your technology fulfill the critical needs (“pain points”) for your customer
- Describe the **features** of your Phase II technology and how they translate into a **succinct value proposition**
- **Discuss pricing** and the **method used to validate** the customers’ willingness to pay
- Indicate the **basis for purchase decision** by customer
 - Hurdles to overcome
- **Discuss the costs** to produce the product/service
 - Include any assumptions that underlie the cost model



3.2. Competition

- Describe current competitive landscape
- Discuss **strengths and weaknesses** of competing technologies/companies and how your technology/innovation will allow your team to compete and win relative to the strengths and weaknesses of competing technologies/companies (**response to competition**)
 - Make sure that your discussion includes both **direct and indirect** competition
 - Include table contrasting your product with competitive approaches on dimensions of significance to the customer
- Describe changes in landscape anticipated over the next few years (i.e. when your product/service reaches the market)



3.3. Intellectual Property Landscape

- Describe intellectual property landscape – i.e. other key patents of competitors
- Describe the **due diligence** taken to confirm that company has “freedom to operate” relative to the technology/innovation
- **Company Strategy** (historical and going forward)
 - Legal counsel used
 - Frequency of interaction with counsel
 - Brief discussion of corporate IP history (patents, copyrights, trademarks)
 - Description of corporate strategy to protect IP going forward with rationale and timeline provided
 - As appropriate, indicate the other IP you may need to acquire in order to address the market opportunity



4. Finance & Revenue Generation

4.1. Estimate of funding needed

- Table of tasks to be funded from present through 3 years following Phase II
 - Be sure to include technical, **marketing, manufacturing, and intellectual property milestones** as appropriate
- Discussion of table, providing a sound basis for discussion of funding needed

4.2. Evidence of support

- Discussion of appropriate contacts, leads, relationships and agreements already in place validating that there is a path to the necessary funds
- Provide **letters of support**, as appropriate
 - Detail the relevance of each letter and provide a description of the entity that is providing the letter



4.3. Method of Revenue Generation

- **Describe the revenue streams** to be implemented in bringing your product/technology to market (licensing, product sales or other)
- Discuss dates you anticipate your first revenues from each stream and when you expect to reach “break even”

4.4. Model for Projecting Revenues for 3 years post Phase II

- Include annual *pro forma* income statements for 3 years post Phase II
- **Discuss assumptions made when developing the model and reiterate how you have validated them**