



SBIR/STTR READINESS ASSESSMENT TOOL

Assess Your Readiness. Strengthen Your Competitiveness.

Executive Summary

Securing SBIR/STTR funding is less about writing a single strong application and more about disciplined preparation across every dimension of a company. The companies that succeed rarely just have a great idea — they have taken the time to understand exactly where they stand and what it will take to move forward.

This Readiness Tool is built on a simple premise: taking an idea from the lab to the marketplace is a process of sequentially de-risking the technology and the business — across technology, team, market, intellectual property, and financing — so that each milestone reduces uncertainty and unlocks the next stage of customers and capital. That is how a company crosses the "valley of death," the gap where most deep-tech ideas stall because the science works but the product does not yet sell.

The tool is diagnostic, not pass/fail. A checked box means you can confidently answer a question or have completed a task — not that the answer is perfect. Every item you cannot yet check is not a failure; it is your roadmap. Work through it honestly, and the effort you invest here translates directly into a more competitive proposal and a company genuinely ready to commercialize its technology.

How to Use This Document

This SBIR/STTR Readiness Assessment Tool is not a test. It is designed to help you assess your readiness for the SBIR/STTR Programs and identify the work needed to start your journey.

You do not need to complete every item before applying to the Catalyst Program. In fact, the Catalyst Program is designed to help companies strengthen these areas and prepare for a successful SBIR/STTR submission.

Copy the SBIR/STTR Readiness Assessment Tool into a working document and work through it one section at a time. Some items can be completed quickly, while others will require customer discovery, research, discussions with your team, and thoughtful reflection. That is intentional.

Use the worked example as a guide for the level of depth, clarity, and specificity expected in strong responses, and use the roadmap to understand when each element typically becomes important during the proposal-development process.

If you can confidently complete most sections, you are likely well positioned to pursue SBIR/STTR funding. Where you cannot yet provide a strong response, you have identified an area that requires additional development. Those gaps are not a reason to stop—they represent opportunities to strengthen your technology, commercialization strategy, and overall competitiveness before submitting a proposal.

It is important to have the right mindset. This tool is about readiness; it is not about perfection. It is about discipline, curiosity, and doing the work upfront — so that when the opportunity comes, you are ready to compete and win.

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Part I — From Lab to Market

The Ten Elements of Commercialization

A short framing essay on crossing the valley of death, covering: technology maturation · market validation and customer discovery · value proposition and the purchaser-vs-user distinction · team · intellectual property · staged capital strategy · regulatory and reimbursement pathway · manufacturing and scale-up · business and revenue model · partnerships and go-to-market.

Part II — SBIR/STTR Readiness Assessment Tool

1. Technological Innovation
2. Scientific and Technical Team
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4. Resources and Capabilities
5. Technical Literature
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7. Technology and Market Need
8. Commercialization Opportunity and Strategy
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10. Financing Strategy
11. Revenue Model

Part III — Worked Example

One hypothetical company — Cadence Health Technologies (SmartSole) — answered end to end across all eleven sections, illustrating the specificity and tone of strong responses.

Part I — From Lab to Market

As the illustration shows, the SBIR/STTR programs are much like assembling a complex puzzle. Success depends on bringing together many interrelated pieces—scientific innovation, technical feasibility, market need, commercialization planning, regulatory considerations, intellectual property, funding strategy, and an experienced team. Each piece must fit together to create a cohesive R&D and product development strategy that ultimately leads to successful commercialization, customer adoption, and sustainable revenue growth.

Taking an idea from the lab to the marketplace is really a process of *sequentially de-risking* the venture along several fronts at once, so that each milestone reduces uncertainty and unlocks the next stage of customers and capital. The gap where most deep-tech ideas die — after the science works but before the product sells — is often called the "valley of death," and nearly every element below exists to help you cross it. Here are the key ones.

Technology maturation (proving it, then hardening it). A lab result proves *feasibility*; a product requires *reliability* under real-world conditions, at scale, and at a manageable cost. Moving up the Technology Readiness Levels means answering progressively harder questions: not just "does it work?" but "does it work every time, made by someone other than the inventor, for a price the market will bear?" This is exactly what SBIR/STTR Phase I (feasibility) and Phase II (prototype/validation) are structured to fund.

Market validation and customer discovery. The single most common failure mode is a technology in search of a problem. Before scaling anything, you need evidence that a specific, quantified need exists and that identifiable people will pay to solve it. Structured customer-discovery work (the NSF I-Corps model formalizes this) forces you out of the lab to test assumptions with POTENTIAL CUSTOMERS. The goal is product-market fit — proof that your solution matters enough that customers change behavior to adopt it.

A clear value proposition and the purchaser-vs-user distinction. You have to know precisely who benefits, who decides, and who pays — and these are often three different parties. In healthcare, the patient uses the device, but a health system or payer buys it, so your value proposition has to make economic sense to the entity writing the check, usually as a return on investment (avoided costs, revenue, or risk).

The right team, evolving over time. Scientific founders rarely have the full commercial skill set, and a Principal Investigator is not automatically a CEO. As the venture matures you add business leadership, domain-experienced advisors, a board, and specialists (regulatory, manufacturing, sales). Investors bet on teams as much as technology.

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The SBIR/STTR program is much like assembling a complex puzzle.



The solicitation provides the **picture on the box**—the agency's mission, objectives, and funding priorities. Your technology is only one piece of the puzzle. To complete the picture, you must also fit together the technical approach, commercialization strategy, market opportunity, team qualifications, budget, customer need, and supporting data.



Many companies focus almost **exclusively on the technology piece**, believing that a great innovation alone will win funding. In reality, reviewers are looking for the complete puzzle. If key pieces are missing—or if the pieces do not fit together coherently—the proposal is unlikely to be competitive, regardless of how innovative the technology may be.



Successful applicants understand **how all the pieces connect**. They build a compelling picture that demonstrates not only that the technology can work, but also that there is a clear path to commercialization and impact. The strongest proposals are those where every piece fits together to tell a complete and convincing story.



Every piece matters. Put them together for success.

Intellectual property strategy. Protection (patents, trade secrets, trademarks) creates the defensibility investors need, but two subtler issues matter just as much: *freedom to operate* (confirming you're not infringing others' claims), and *ownership* — if the core IP originated at a university, you'll need a license from its technology-transfer office, and those terms shape everything downstream.

A staged capital strategy. Fund each stage with the cheapest appropriate money. Non-dilutive sources (SBIR/STTR, grants, state matching programs) de-risk the early technical work without giving up equity; dilutive capital (angels, then venture capital) comes in as the technical and market risk falls and the opportunity grows. The art is timing raises to *value-inflection points* — hitting a milestone that makes the company meaningfully more valuable before you go back for the next tranche.

The regulatory and reimbursement pathway. For regulated products (medical, energy, aerospace, food), approval and — critically — *who reimburses or pays* can be a bigger barrier than the science. Map this early, because it dictates your timeline, your clinical or testing costs, and often your business model.

Manufacturing, scale-up, and supply chain. A hand-built prototype is not a manufacturable product. Designing for manufacturability, driving unit cost down, and securing a reliable supply chain are what let you actually deliver at volume and margin.

A defensible business and revenue model. Beyond "how it works," you need "how it makes money": pricing, unit economics, and a model (one-time sale, subscription, licensing, B2B2C) that fits how your customer buys and yields margins that sustain the company.

Partnerships and go-to-market channels. Few startups reach the market alone. Strategic partners, distributors, and channel relationships — or a decision to license your technology to an established player rather than build the whole company — determine how fast and how far you scale.

If you notice, these map almost one-to-one onto the readiness checklist we built — technology, team, research plan, resources, market need, commercialization, IP, and financing. That's not a coincidence: SBIR/STTR is deliberately designed as a bridge across the valley of death, and a strong proposal is essentially a credible plan for de-risking every one of these dimensions in sequence.

Part II — SBIR/STTR Readiness Assessment Tool

Work through each item systematically. A checked box means you can confidently answer the question or have completed the task — not that the answer is perfect. Items you can't yet check are your roadmap.

1. Technological Innovation

- ☐ I can explain why the technology is state-of-the-art
- ☐ I have compared it to existing or alternate technologies
- ☐ The innovation has been reviewed by outside experts for scientific and commercial potential
- ☐ I have identified the Technology Readiness Level (TRL) of the project

2. Scientific and Technical Team

- ☐ I have documented the credentials of the lead researcher (PI/PD)
- ☐ I have determined whether additional staff expertise is needed beyond the PI/PD
- ☐ I can define the specific skill set/expertise each team member contributes
- ☐ The PI/PD meets the statutory employment requirements of the SBIR/STTR programs
- ☐ I have noted whether the PI/PD has peer-reviewed publications (*helpful, not required*)
- ☐ I have summarized the background and expertise of the PI/PD
- ☐ I have considered creating a scientific advisory board

3. Research Approach

- ☐ I have identified the technical questions that must be answered to demonstrate feasibility
- ☐ I have defined the technical objectives / specific aims of the research
- ☐ I have an action plan with task-specific due dates and a person responsible for each task
- ☐ I have identified alternative technologies or methods
- ☐ I have estimated the total cost of the project

4. Resources and Capabilities

- ☐ I have assessed the scientific and technical capabilities of the company and team
- ☐ I have confirmed the R&D capabilities needed to execute a federal research effort
- ☐ I can confirm all research will be performed in the United States

5. Technical Literature

- ☐ I have conducted a thorough review of scientific literature related to the project
- ☐ I have reviewed sample SBIR/STTR proposals
- ☐ I have reviewed the specific SBIR/STTR program criteria for each agency of interest
- ☐ I have researched previous SBIR/STTR awards for similar work (*SBIR.gov Award Database*)

6. Facilities, Equipment, and Expertise

- ☐ I have confirmed internal facilities, equipment, and expertise to conduct the work
- ☐ I have identified access to external facilities, equipment, and expertise if needed
- ☐ I have determined whether strategic partnerships (companies, federal labs, universities) are needed

7. Technology and Market Need

- ☐ I can explain how the technology addresses an existing need in the field
- ☐ I have identified and quantified the need for the technology
- ☐ I have identified the end-users of the technology solution

8. Commercialization Opportunity and Strategy

- ☐ I can clearly define the product
- ☐ I know where I intend to market the product
- ☐ I have estimated the potential size of the customer market
- ☐ I can estimate approximately how many people will benefit from the product
- ☐ I have begun developing relationships with potential customers
- ☐ I have identified potential competitors in the market
- ☐ I have identified potential partners
- ☐ I can articulate the impact on patients, providers, or caregivers
- ☐ I can explain how the product is innovative and different from the current standard
- ☐ I have identified the end-user of the product
- ☐ I have identified the purchaser (*who may differ from the end-user*)

9. Intellectual Property

- ☐ I have taken concrete steps toward intellectual property protection

10. Financing Strategy

- ☐ I have a plan to access other funding (angel groups, VCs, or other sources) to support commercialization beyond SBIR/STTR

11. Revenue Model

- ☐ The company has a well-thought-out and defensible revenue model

Part III — Example

This example follows one hypothetical company through all eleven sections so you can see what strong, specific answers look like. Use them as a model for depth and tone — not as facts.

Example company: Cadence Health Technologies Product: *SmartSole* — a sensor-embedded shoe insole paired with a companion app and machine-learning platform that continuously monitors plantar pressure and skin temperature to flag developing diabetic foot ulcers (DFUs) 2–3 weeks before they become clinically visible.

Target agency/program: NIH / NIDDK SBIR Phase I

1. Technological Innovation

Example answer: SmartSole is at TRL 3 — the sensor array and ML classifier have been validated together in a benchtop and small lab setting, but not yet in a clinical population. The current standard of care relies on periodic visual inspection and daily at-home thermometry mats, which capture a single static reading when the patient remembers to step on them. Our innovation is *continuous ambulatory* monitoring: we combine plantar pressure and temperature-asymmetry data collected during normal walking, which prior literature links to elevated ulcer risk when local temperature asymmetry exceeds $\sim 2.2^{\circ}\text{C}$. Two external experts — a podiatric surgeon and a wearable-sensor engineer — reviewed our approach and confirmed both the scientific rationale and a credible commercial path.

2. Scientific and Technical Team

Example answer: Our PI/PD, Dr. Lena Ortiz, holds a PhD in Biomedical Engineering, has 8 years in wearable sensor design, and 6 peer-reviewed publications on gait and pressure sensing. She is employed primarily (>50%) by Cadence, satisfying the SBIR PI employment requirement. Beyond the PI, we need a machine-learning engineer (classifier development) and a part-time clinical advisor. We have recruited a podiatrist (DPM) with a wound-care clinic as a paid consultant and are forming a 3-person scientific advisory board spanning endocrinology, biostatistics, and medical-device regulatory strategy.

3. Research Approach

Example answer: The central technical question for Phase I is: *Can continuous ambulatory pressure + temperature data predict ulcer onset earlier and more reliably than daily static thermometry?* Specific aims: (1) validate sensor accuracy against a clinical-grade reference; (2) train and test the classifier on data from 30 at-risk patients over 8 weeks. Milestones are mapped by month with an owner for each — e.g., *Months 1–2: sensor calibration (Eng. lead); Months 3–5: patient data collection (Clinical partner); Months 6–8: classifier validation and reporting (PI + ML engineer)*. An identified alternative approach — inertial-only sensing without temperature — was rejected as insufficiently specific. Estimated Phase I cost: $\sim \$295,000$.

4. Resources and Capabilities

Example answer: Cadence has an in-house electronics lab for sensor assembly and firmware development and a data pipeline for de-identified patient data. R&D capability to run a federal effort is demonstrated by our prior completion of a state-funded prototype grant on time and on budget. All proposed research will be performed in the United States, satisfying the program's performance-of-work requirements.

5. Technical Literature

Example answer: We completed a structured review of ~40 papers on DFU pathophysiology, thermometry-based prediction, and in-shoe sensing, and we maintain a living bibliography. We studied three sample funded SBIR proposals (shared by our state SBIR office) and read the current NIDDK SBIR omnibus solicitation line-by-line against our aims. Using the SBIR.gov Award Database, we found prior NIH awards for at-home DFU thermometry, which confirmed agency interest and helped us position SmartSole as a differentiated, continuous-monitoring complement rather than a duplicate.

6. Facilities, Equipment, and Expertise

Example answer: Internally we have the equipment to build and bench-test devices. We lack a clinical population, so we have a signed letter of support from a university podiatry clinic that will host patient data collection and provide reference-standard assessments. This strategic partnership fills our clinical gap; no federal-lab partnership is required for Phase I, though we've identified an NIST-affiliated calibration resource for future scale-up.

7. Technology and Market Need

Example answer: DFUs affect a large share of people with diabetes over their lifetime and are a leading cause of lower-limb amputation; U.S. annual costs of diabetic foot care are commonly cited in the multi-billion-dollar range. The need is both clinical (late detection drives amputations) and economic (avoidable hospitalizations). End-users are two-tier: at-risk patients who wear the insole, and the wound-care clinicians who receive the alerts and intervene early.

8. Commercialization Opportunity and Strategy

Example answer:

- **Product:** SmartSole insole + clinician dashboard + patient app (a monitoring service, not just hardware).
- **Market / size:** We target U.S. patients with a prior DFU (highest-recurrence, best-reimbursed segment) as our initial SAM, expanding to the broader at-risk diabetic population as the TAM.
- **Customer relationships:** Two health systems have signed pilot letters of intent.
- **Competitors:** Existing at-home thermometry mats and instrumented-insole players (e.g., Podometrics-style mats, Orpyx-style insoles).
- **Partners:** Wound-care clinics, durable medical equipment (DME) distributors, and remote-patient-monitoring platforms.
- **Impact:** Earlier detection can reduce ulcer progression, amputations, and hospitalizations — improving patient quality of life and lowering payer costs.
- **Differentiation:** Continuous ambulatory data vs. a single daily static reading.
- **End-user vs. purchaser:** The patient is the end-user; the purchaser is typically the health system or payer reimbursing under remote-patient-monitoring codes — not the patient out of pocket.

9. Intellectual Property

Example answer: We filed a provisional patent covering the combined pressure-plus-temperature ambulatory sensing method and the alerting algorithm, and we commissioned a preliminary freedom-to-operate search that surfaced no blocking claims. A trademark application for "SmartSole" is in progress, and firmware/source code is protected as a trade secret.

10. Financing Strategy

Example answer: SBIR is our non-dilutive foundation. In parallel we've begun conversations with two regional angel groups and a med-tech seed fund, targeting a bridge round timed to Phase II to fund the pivotal clinical study and FDA submission. We're also tracking state matching-grant and accelerator programs to extend runway without early dilution.

11. Revenue Model

Example answer: Our model is B2B2C recurring revenue: health systems and payers pay a per-patient, per-month monitoring fee reimbursed under remote-patient-monitoring and DME pathways, with the hardware amortized into the subscription. Unit economics are defensible because avoided amputations and hospitalizations far exceed the annual monitoring cost — giving payers a clear return and us a sticky, recurring revenue base.

Reminder: swap in your own technology, agency, numbers, and evidence. The value of these examples is the level of specificity — concrete TRL, named roles, dated milestones, quantified need, and a clear purchaser-vs-user distinction — not the particular company.