

Breaking the SBIR Mill: Structural Reform for Transition and Scale

“Innovation is not scarce in DoD. Transition is.”

**Hon. Nick Guertin
Mr. Howard Reichel**



Framing the Problem

- SBIR invests ~\$4B/year in innovation
- Transition to Programs of Record remains inconsistent and low
- Persistent “Valley of Death” despite decades of reform efforts
- The system produces innovation—but not adoption at scale



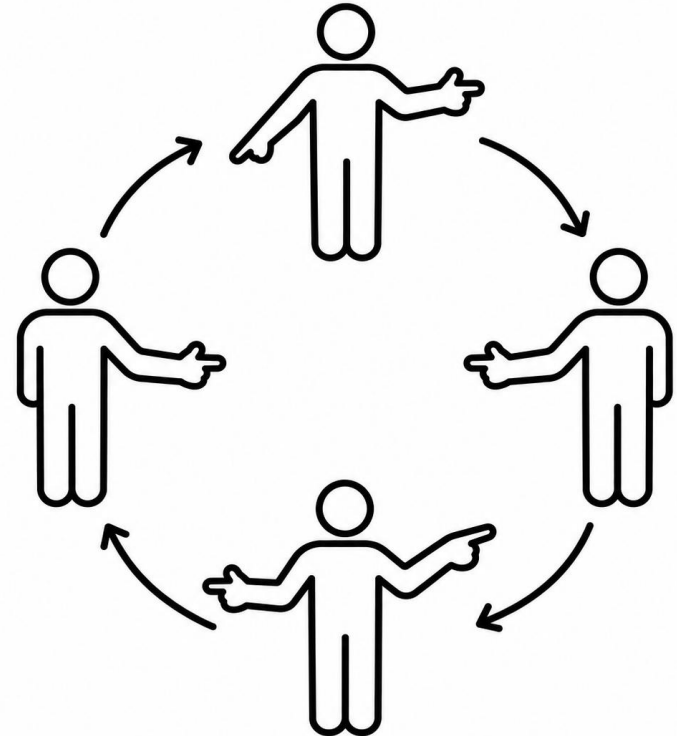
- How is it possible that a successful Phase 2 does not transition?
- Didn't the sponsor of the topic want it?
- Why did we spend tax dollars on it?
- We demoralize companies that want to deliver innovation
 - We even pay 3rd party companies (the STP program, SIBR Advisors, etc.) to try to help figure out how to navigate the process and where the research might be used

Is this not absurd?

- Mythical explanations:
 - “SBIR mills”
 - Lack of commercialization focus or “skin in the game”
 - “Weak companies / poor execution”
- **Our Claim:** These are *symptoms*, not root causes.
 - We are observing output behaviors, not the system that produces the behavior.
- “Every system is perfectly designed to get the results it gets.”
— W. Edwards Deming

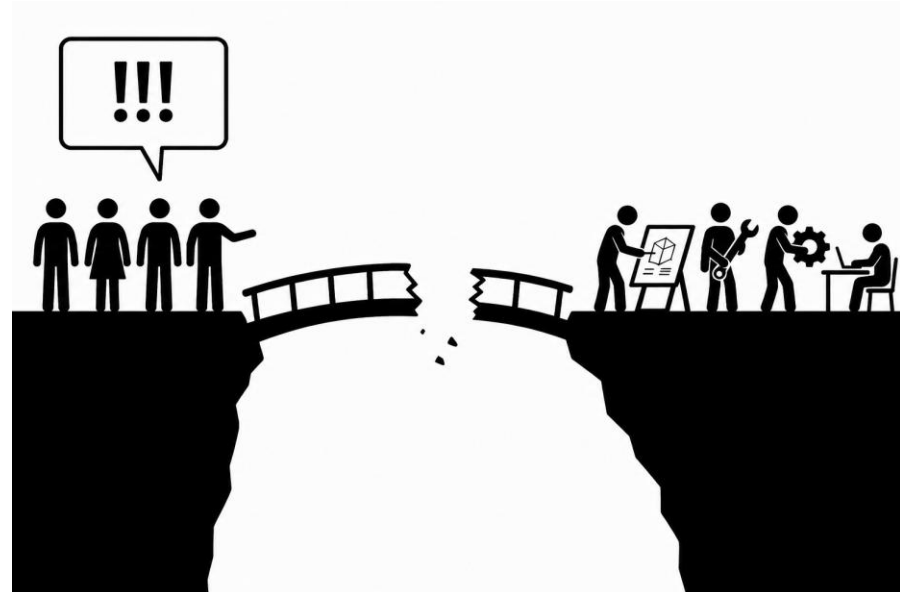


- SBIR failure is driven by **misalignment across four systems**:
 - Technical maturity (TRL progression)
 - Acquisition structure (Programs of Record)
 - Incentive structures (Program risk/career/profit)
 - Budgeting system (PPBE)



“SBIR operates in a disconnected universe. Transition requires alignment across all four systems.”

- Transitions to POR require:
 - Integration into operational systems
 - Qualification, test, and certification
 - Production engineering and sustainment
- But.... Phase II: TRL 4–6 (prototype)
 - Does not provide for any of the above
 - Frequently just an MVP
- Gap: TRL 6 → 9 is unfunded
 - Real work must bridge this gap



Budget Misalignment

PPBE Schedule vs. SBIR Execution



A Program Manager needs to:

- Commit to the solution, with an assumption of success at end of Phase 1
- Submit exhibits into the PPBE process for CRP/Phase III transition funds at the end of Phase 1 to fund **both the SB and the Prime/Integration**

It is a rare customer or small business that understands this or executes this

- Programs of Record:
 1. Operate on validated requirements
 2. Are budgeted across the FYDP
 3. Prioritize execution risk mitigation
 4. Include PM and program staff to execute intricate contracts approaches (RFPs, contracts, execution oversight, delivery, lifecycle management)
- SBIR:
 - Topic-driven
 - Topics are bottoms-up S&T driven (shower ideas at times) – not PM or OPNAV
 - Topics not tied to approved and funded requirements
 - Not aligned to POR timelines or CDD requirements
 - Not integral to any program-level acquisition planning or execution
 - Not business-model driven
- “Programs are not willing to absorb unplanned, unfunded, immature capabilities.”



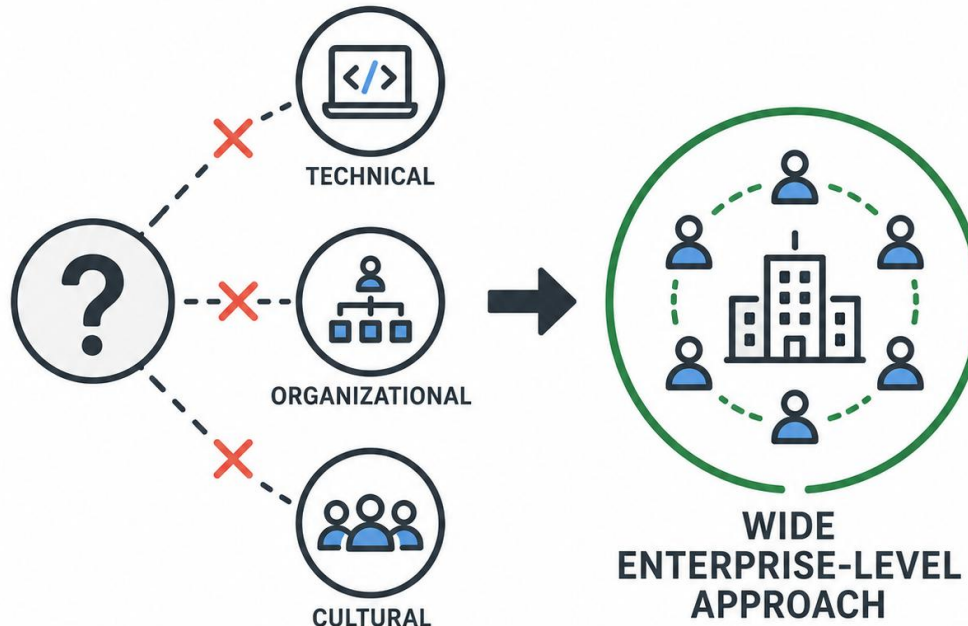
Incentive Misalignment

- Program Manager incentives:
 - Deliver cost, schedule, performance
 - Avoid integration and execution risk
 - Protect baseline stability
- Prime Contractors
 - Optimize revenue, profit and staff coverage
 - Seek to increase company value (retain IP)
- SBIR burden:
 - Introduces technical and programmatic uncertainty
 - Introduces new participant with management and oversight burden
 - Creates IP ownership risk
 - Adds integration burden
 - Lacks funded insertion path



From the perspective of a PM or prime contractor, rejecting SBIR output is not failure — it is rational behavior.

- SBIR failure is not:
 - Technical
 - Organizational
 - Cultural
- We do not have an innovation problem.



Wholistic
Approach to
a New Model

Recommendation: Reframing SBIR → SBER

- Small Business Innovation Research → Small Business Engineering Resource
 - **Shift the model—not just the label**
- Shift:
 - From research → engineering execution
 - Topics reflect engineering solutions **required** for military capability
 - From prototypes → fieldable capability
 - Don't build MVPs. Build **fieldable** solutions.
 - From isolated efforts → embedded acquisition elements
 - Be a part of the **POR from the beginning.**

This is not rebranding.
It is a change in purpose and accountability.

Dimension	SBIR	SBER
Focus	R&D	Engineering + Integration
TRL	4–6	7–9
Funding	~\$2M	\$10–20M
Alignment	Topic-driven	POR-driven
Outcome	Prototype	Fielded capability

We move from proving ideas to delivering outcomes



- SBER requires:
 - Topic Selection and Publication
 - O-6 level PM sponsorship (mandatory, not optional)
 - Topic includes specific committed Program Office and Nomenclatures transition target
 - Pentagon Resource Sponsor Approval for entry into PPBE
 - Execution embedded within POR
 - This is an innovative component-level modernization program
 - Prime Contractor inclusion from Day 1
 - Path A – Subcontract Integration
 - Path B – Incumbent provided component/solution as GFE in MOSA



- **Path A – Subcontract Integration**
 - SB → serves as subcontractor to the prime contractor
 - Prime manages effort as a modernization item and shares execution risk
 - B2B IP license rights negotiated upfront
 - Phase 2 execution, Integration, oversight and testing funded together
- **Path B – Incumbent provided component /solution as GFE in MOSA**
 - SB provides solution to Gov't using published MOSA interfaces
 - MOSA enables plug-and-play replacement for component
 - Prime mandated to use GFE, with risk on Gov't side
 - MOSA is not architecture—it is a business model for competition.
- All transition reduces to two mechanisms: Subcontract or Integrate GFE.



SBER changes incentives:

Actor	Before	After
PM	Avoid risk	Funded Execution
Prime	Resist change	Revenue, Profit, IP
SB	Win more to survive	Deliver capability, Revenue and Profit

We are not asking actors to behave differently—we are changing the rules of the game.

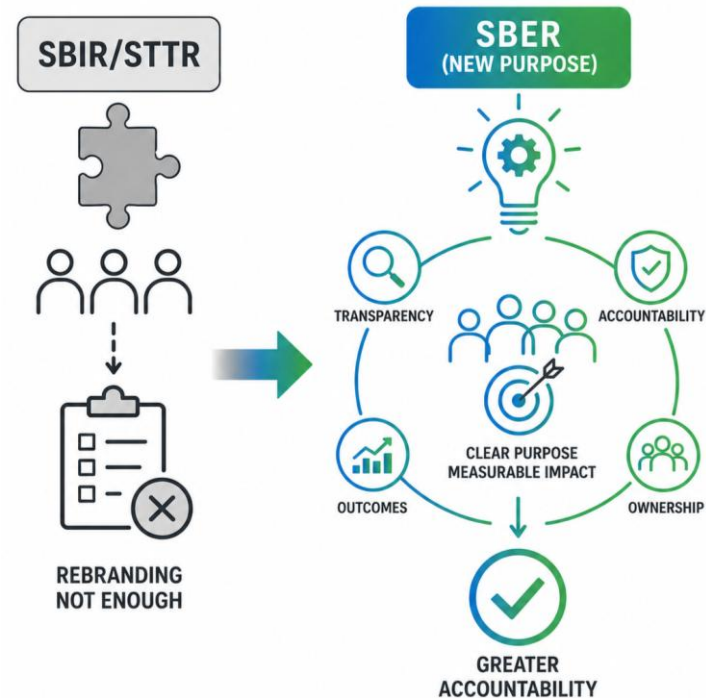


Summary Policy Implications

- Effective reform must:
 - Align topics to POR requirements
 - Fund capability development for fieldable capability
 - Integrate into PPBE process
 - Change relationship of SBER and Prime with subcontract or MOSA
 - Design in success

**If we want capability at scale,
we must fund engineering—
not just innovation.**

**Until then, we will continue to
produce prototypes faster than
we can field them.**



Backup

SBIR Program Summary/Vocabulary

Phase I Study

\$150K Base (6 months) | \$100K Option (6 months)

SBIR Phase I
All SBIR Funds

Phase I

- Process begins with publication of "SBIR Books" several times per year
- Hundreds of topics across the Government
- Many small business write proposals to many topics
- Several awardees (~2-5 is typical)
- Award based on Innovative Approach, PI, Existing IP, Experience, Transition Plan

Phase II Prototype

\$1.8M
3 years

SBIR Phase II
All SBIR Funds

Phase II

- Shoot-Off in Phase 1 typically yields one Phase 2 award
- Award based upon Phase 1 execution, Transition Plan etc...
- Phase 1 performers not awarded a Phase 2 contract receive nothing
- Phase 2 ends with an ROI event – with transition to Catapult or Phase 3

Transition to Fleet

Commercialization and Productization (Catapult/CRP/Phase 2.5)

Up to \$3.6M
3 years (or less)

SBIR Catapult
Matching Funding

Catapult or CRP or Phase 2.5

- Commercialization is the goal!!!
- Success in Phase 2 may lead to Catapult
- Catapult asks the Program Office to pay half the bill to "commercialize" the SBIR solution into POR
- SBIR Program offers equal matching money

Phase III

SBIR Phase III
All Program Office Funds

Phase III

- There is no maximum ceiling for a Phase 3 SBIR award
- Sole source award
- Program Office must revise Acquisition Plan, Publish J&A, execute RFP, review and award contract (typical FAR-based contract)

Case Study: A “Successful” SBIR That Still Struggles to Transition AN/SQQ-89 Adaptive Proficiency Trainer



Mar 2018 – Sep 2018

Phase I Study

\$150K Base (6 months) | \$100K Option (6 months)

Active Sonar Training Phase I
All SBIR Funds

Sep 2018 – Aug 2021

\$1.8M
3 years

★ Successful ROI

Phase II Prototype

Active Sonar Training Phase II
All SBIR Funds

Current Status

- Successful Phase II ROI Event (August 2021)
 - Valley of death ensued
- Additional scope funded via related SBIR to update course material/ tactical displays to ACB-19

Next Steps (via Catapult or Phase III)

- Integrate with contractor who executes AN/SQQ-89 active sonar curriculum
 - Finalize ACB-19-related updates
- No Funding Identified

Phase II Follow-On

Jan 2026 – Jan 2027

\$ from Separate SBIR

Active Sonar Training Updates

Transition to Fleet

Commercialization and Productization (Catapult/CRP/Phase 2.5)

Up to \$3.6M
3 years (or less)

Active Sonar Training Catapult Matching Funding

Phase III

Active Sonar Training Phase III
All Program Office Funds

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