OPTO-KNOWLEDGE SYSTEMS INC.
Converting Light Into Knowledge

Trials & Tribulations on the Road to SBIR Phase-III & Commercialization

Phase-III Definition (SBA Policy Directive, September 24, 2002)

SBIR Phase III refers to work that derives from, extends, or logically concludes effort(s) performed under prior SBIR funding agreements. Phase III work is typically oriented towards commercialization of SBIR research or technology to bring it to the marketplace, and must be funded by non SBIR sources.

Definition also used in the former DUSD(A&T) James Finley Memorandum for Secretaries of the Military Departments and Directors of Defense Agencies (Dec. 8, 2008)

Contact Information
Nahum Gat, Ph.D., PE — President
Opto-Knowledge Systems, Inc. (OKSI)
Torrance, California
nahum@oksi.com, 310-756-0520 237
www.oksi.com

OKSI Background

- Founded: January 2001 (19+ years in business)
- Employees: <16
- Background: Physics, Applied Math, ME, CS, AE
- Technology: Electro optics / Infrared sensors and instrumentation, remote sensing, algorithms and signal processing
- Primary customers: DoD (Army, Navy, AF, DARPA, MDA), NASA, DoE, NIST
- Scope of work: From basic research, to building unique EO/IR sensors; sensor deployment, support USG at data collects, data analysis, phenomenology
- Applications: Airborne, space-borne, ground based EO/IR sensors for remote sensing of environments, tactical, strategic missions

OKSI SBIR Phase-II & Beyond Experience

- Phase-II SBIRs: 26
- Phase-III programs: > 20
  - ✓ Commercial, and government (including Phase-II+, Phase-II Enhancement, mixed Non-SBIR with SBIR-matching contribution)
- Did we get rich?
  - ✓ NO
- Can you be too successful with SBIR technology?

One "Success" Story (Where Too Much Success is Dangerous Too)

Between 2002-2006:

- Under Phases I/II and II+ OKSI developed the VariAp®, an "enabling technology" for 3rd Gen FLIR (3GF) systems for Army FCS
- Under non-SBIR funding, OKSI worked directly with 4 major Prime Contractors, to demonstrate and implement the VariAp® technology in their FLIR systems
- OKSI received a Quality Award for the program in a Pentagon ceremony in 2006
- OKSI mentioned by DoD in response to Presidential Executive Order 13329 "Encouraging Innovation in Manufacturing" as example of DoD compliance with 13329
- OKSI successfully implemented the VariAp in various Primes' 3GF [NDA, IPs, Data Rights]

In 2007-

- DoD decided to move on to SDD (System Development & Demonstration) phase with low volume production of 3GF …. …. From that day on, none of the Primes talks to us
- We talked, explained, sent letters, hired lawyers, complained, and more – in no avail
- The DoD says: (1) Work is not Phase-III because "we did not call it Phase-III", and (2) this is a problem between OKSI and the Primes; keep us out!

The law HAS NO TEETH (same goes with the SBA PD, SBIR legislation, & data rights)

Fallacies In SBIR Commercialization

- Phase I/II SBIR often involved technologies that, if funded at the Prime Contractor, would take tens of millions of dollars to develop. Phases I/II funding is too meager to bring a technology to operation use, in particular since it typically start from a new idea at early research level

  Phases I / II only serve as a filter – you, the small business must find the end user, and generate the interest for further funding (whether within the USG or outside); start very early while in Phase-I generating ideas and talking to potential end users of your technology

- In the past, the SBIR program had strict guidelines not allowing the agencies to use the funding to "augment" their needs; therefore many topics did not have immediate connection to the agency needs

  That made it even harder to find a user at the agency.

  Does anyone remembers how Dr. Jim Ionson ran the SDIO/SBIR? Totally like a venture capital company.

Fallacies In SBIR Commercialization (2 of 2)

- Most SBIR topics often are exploratory research in nature and are not directly related to specific "system"; at the completion of Phase-II there is no one that can make the connection between the new capability and specific DoD programs that can benefit from it

  The DoD research labs (e.g., AFRL, RDECOM) are not often well connected with the PEOs, PM, SPO – they often have a bunch of scientists that like to do the science but have never seen a tank or a tank crew, and do not know much about combat needs

- Some programs lead to the development and delivery of a single system that is in use by the agency; but the application is limited entirely to that agency

  Under several very successful Phase-IIs and P2+, OKSI develop unique and very expensive sensors for MDA Kill Assessment applications. How many commercial / consumer users have a need for it? Can't sell it at Target!

- Often a technology requires several SBIR cycles and from multiple agencies in order to reach sufficient level of maturity

  There may be several Phases I/II that do not produce mature product / technology, but eventually it may – be persistent, be imaginative in "selling" the same technology to multiple agencies