

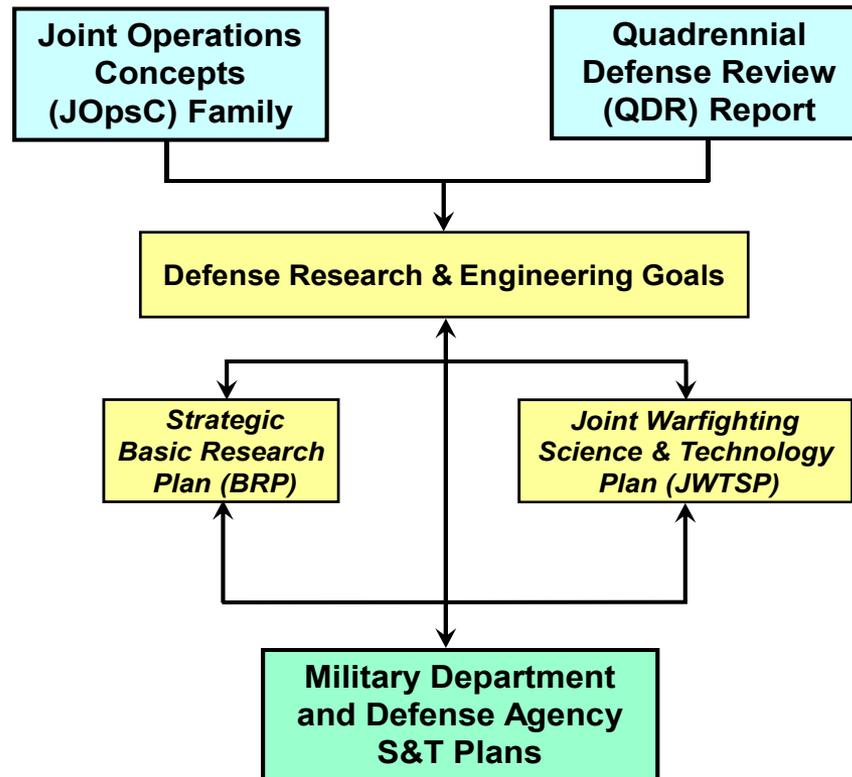


# Transition of Technology into the DoD Acquisition Process

Gary Hagan

DARPA SBIR Phase I Training Workshop

# DoD Science and Technology (S&T) Planning and Management Process

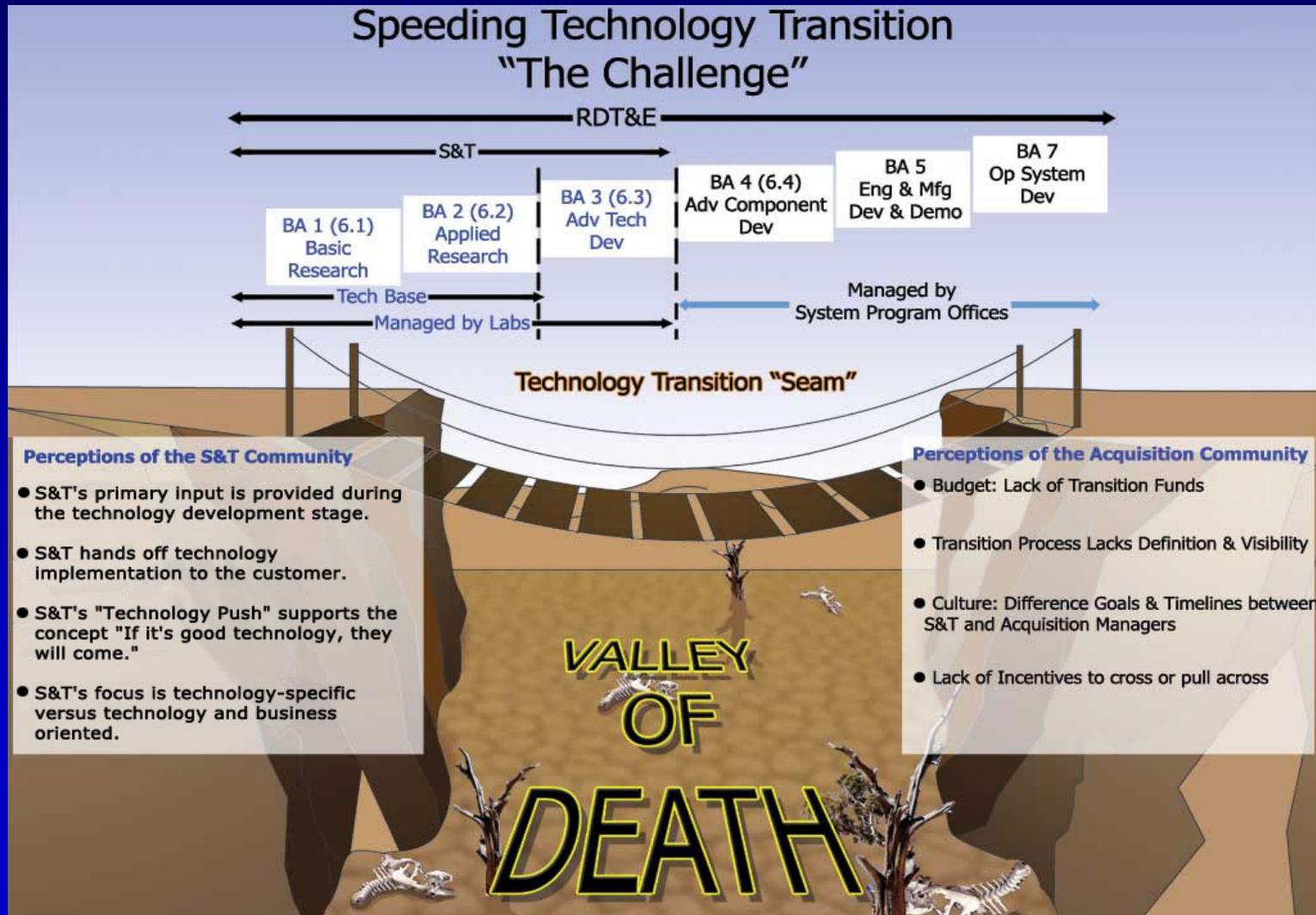


# Barriers to Technology Transition

- **Goals**
- **Timelines**
- **Treatment of Risk**
- **Funding**
- **Milestones and Schedules**

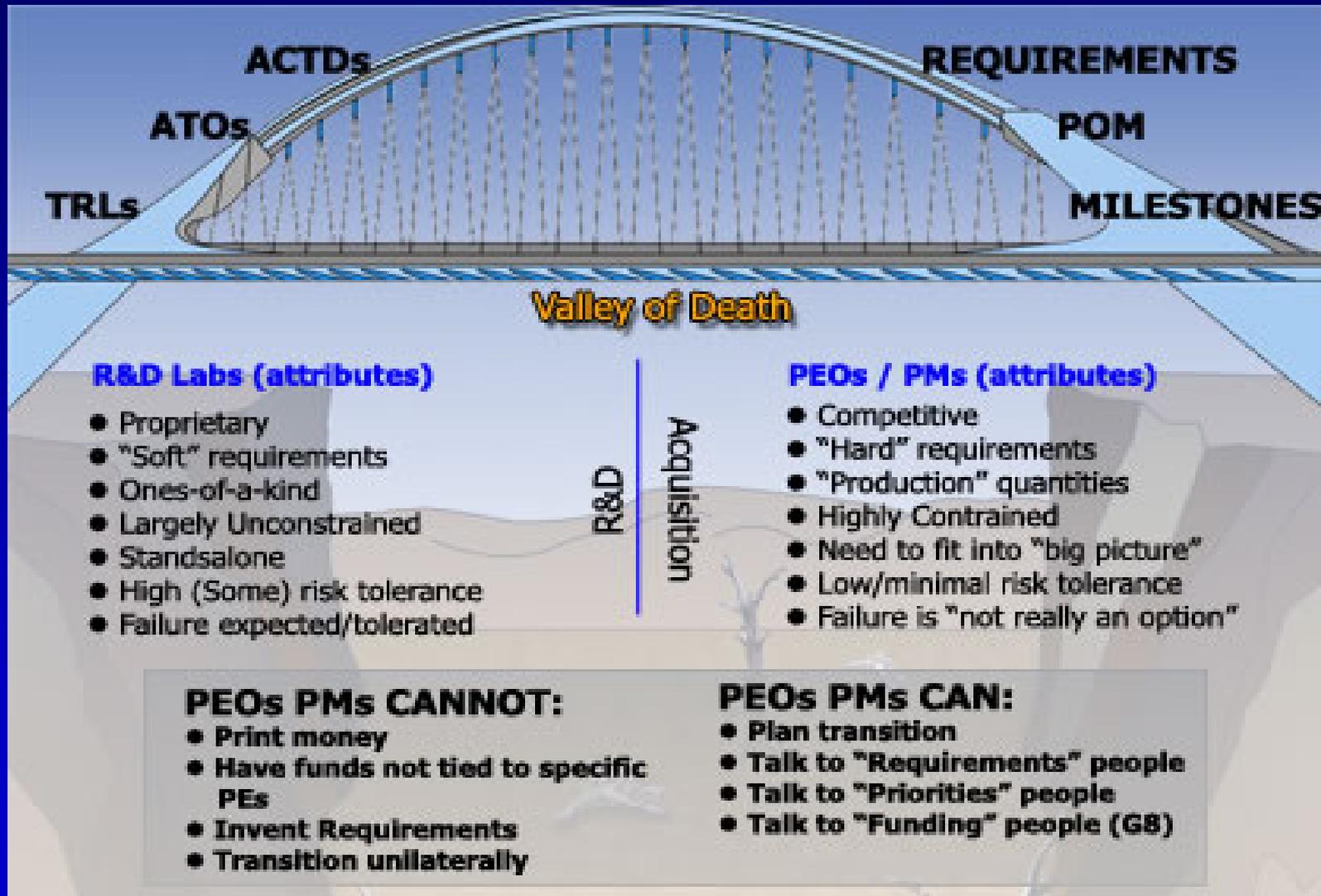
# The "Valley of Death"

## The Divide Between the S&T and Program Management

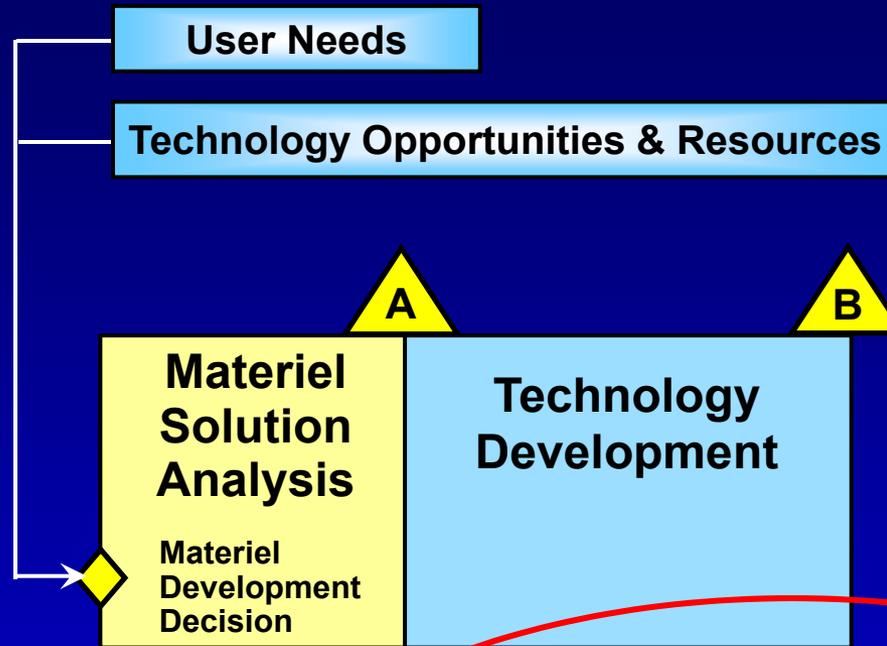


# The “Valley of Death”

## Different Perspectives



# Pre-Systems Acquisition



## User Need

- *JCIDS Capabilities-Based Assessment (CBA)*
- *Initial Capabilities Document (ICD)*

## Technology Opportunities

- *All sources foreign & domestic*
- *SBIR Program*
- *S&T Activities: ATDs, JCTDs, Prototype Projects, Joint Warfighting Experiments*

# DoD Technologies That Changed Warfighting

- **Disruptive Technologies Resulting from Technology Push:**

- Internet
- GPS
- Night vision
- Lasers
- Stealth
- Predator
- Global Hawk

All provided dominant capability

- **None of These Emerged from Requirements Pull**



**Stealth**



**UAVs**



**GPS**

**Advanced Optics and Lasers**



**Night Vision**



# S&T Advanced Technology Development Projects - some examples

- **Joint Capability Technology Demonstrations (JCTDs)**  
**PE 0603648D8Z**
  - Sponsor: ASD(R&E) Rapid Fielding Office
  - Funding: FY 2010: \$179.5M    FY2011 request: \$207M
- **Quick Reaction Special Projects (QRSP)**  
**PE 0603826D8Z**
  - Sponsor: ASD(R&E) and Military Departments
  - Funding: FY2010: \$73.5M    FY2011 request: \$78.2M
- **DARPA Advanced Technology Development (numerous PEs)**
  - Sponsor: ASD(R&E)
  - Funding: FY2010: \$1.5B    FY2011 request: \$1.5B

**Military Department Advanced Technology Development Funding**  
**FY 2010: \$2.9B    FY 2011 request: \$1.9B**

# SBIR: Some Elements for Success

- **Business Strategy**
  - Identify potential military/commercial applications in proposal submissions
  - Anticipate and prepare for scaling up to sell and distribute products within appropriate markets
  - Partner with larger defense firms to secure access to channels for transition
- **Technology Development**
  - Assess technology capabilities and user feedback during all stages
  - Identify potential users early and use them to identify requirements and challenges
  - Partner with larger organizations to access technology and testing resources
- **Leadership/Marketing**
  - Build awareness of technology and your company via publications and technical conferences
  - Select a memorable project name that conveys its use
- **Intellectual Property**
  - Obtain patent rights to maintain dominant market position
  - Protect intellectual property for licensing enabling technology to larger businesses

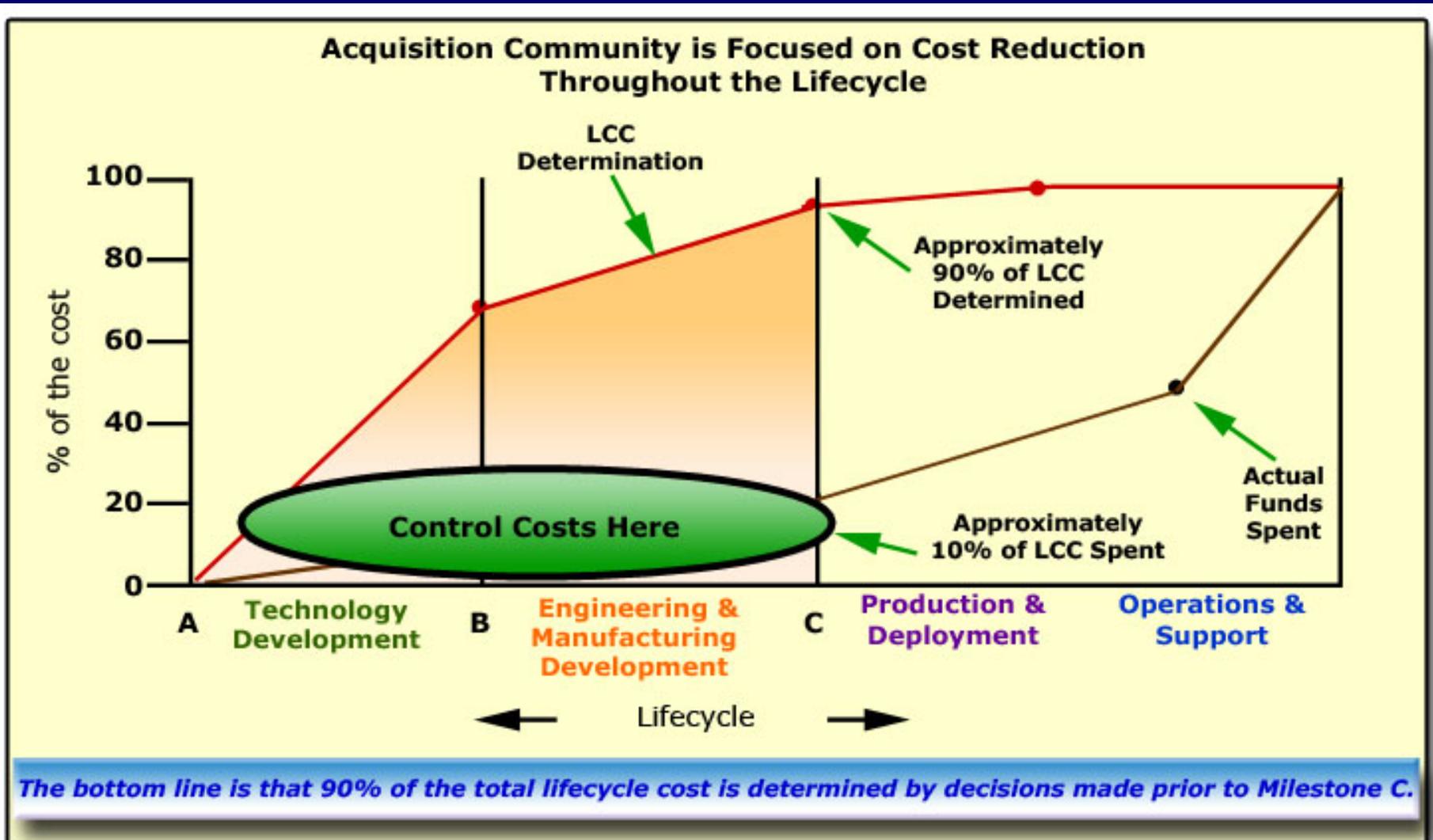
# SBIR Success Stories

- **Integration of Information From Heterogeneous Sources**
  - Documents in printed, fax or PDF format have tables not in machine readable form – expensive and time consuming to convert
  - BCL solution involved fuzzy logic, database technologies natural language query processing
  - BCL has partnered with over 25 companies; table extraction technology licensed to ADOBE
- **Open Source Information Geospatial Overlay (OSIGO)**
  - Linking of open source datasets with satellite imagery and aerial maps relatively slow; need to correlate open source datasets with precise point on an image or map
  - Geosemble Technologies Inc' tool allowed rapid alignment and linkage of open source information to images or aerial maps
  - Sold to two California cities; partnering with a defense prime; awarded Phase II and Air Force SBIR II contracts

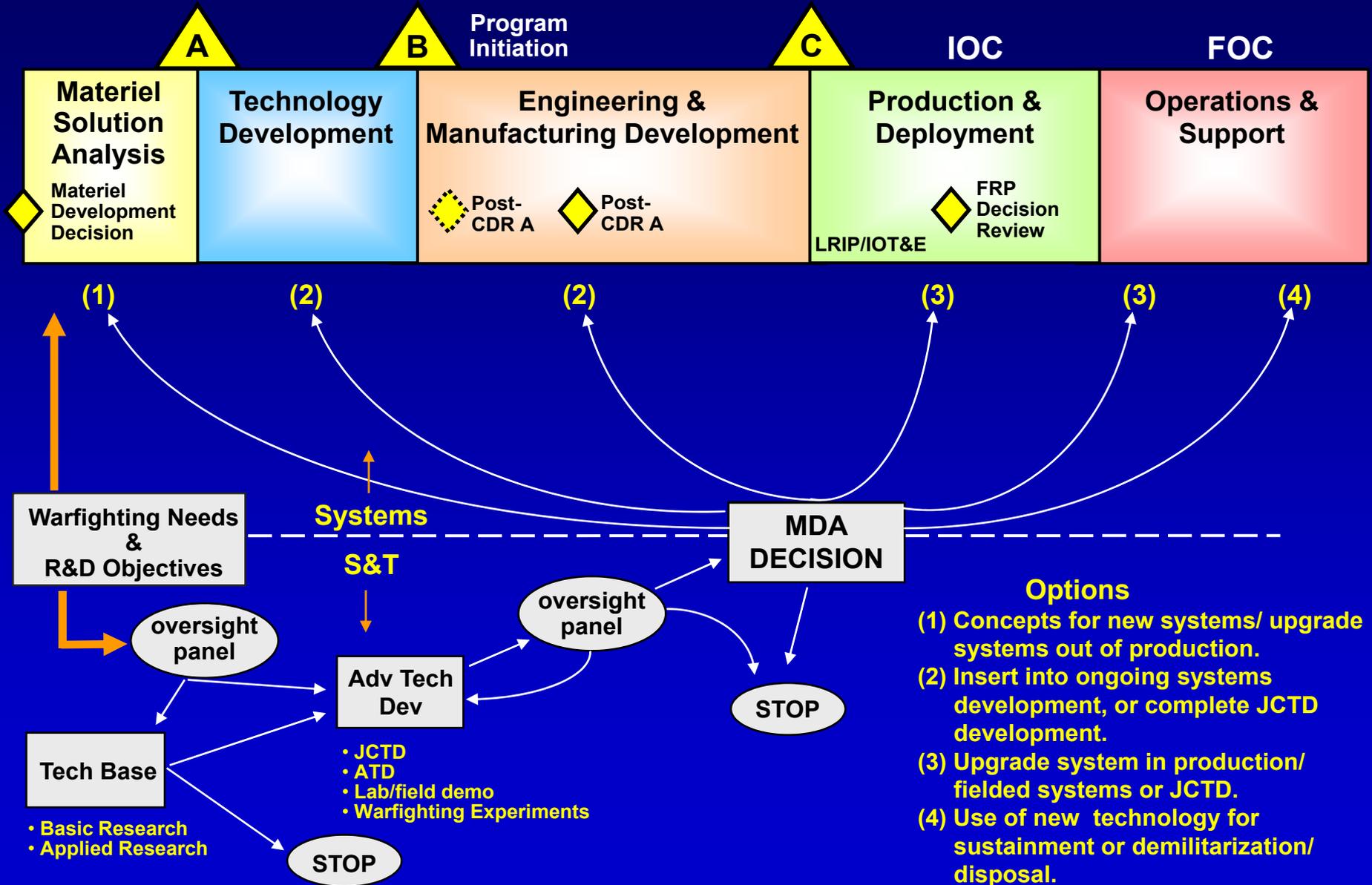
# SBIR Success Stories

- **Lightweight Electronically Steerable Antenna**
  - Mechanically scanned antenna steering technology consumed too much power and costs were significant
  - Radant Technologies developed electronic steerable antenna (ESA) using Microelectromechanical Systems (MEMS) technology
  - Standard mechanically scanned antenna replaced by lightweight, lower cost MEMS ESA in Air Force APG-67 X-band radar
- **Unmanned Robots Systems: TALON Robot**
  - Need for robotic systems to assist in countermine operations in surf zone – eventually all Explosive Ordnance Disposal (EOD) situations
  - Foster- Miller Inc (FMI) developed “Lemming” (DARPA); Sea Dog (Navy); and TALON robots (Army, Navy)
  - Contracts with Army and Navy EOD R&D programs

# Cost Reduction Throughout the Life Cycle



# S&T Linkage to Defense Acquisition Process



# Summary

- **Barriers are real – but not insurmountable – the “Valley of Death” DOES exist**
- **Transition Support Programs DO exist, e.g., Quick Reaction Special Projects (QRSP), Defense Acquisition Challenge (DAC), and SBIR**
- **Many success stories – apply general elements for success – and UNDERSTAND potential application and use of technology from the perspective of the military and/or commercial user**