

NAVAL RESEARCH ADVISORY COMMITTEE

Venture Capital Technology Panel (VCRAC)

**Presentation to
John Young
Assistant Secretary of the Navy
(Research, Development, and Acquisition)**

Terms of Reference

Objective

- To identify emerging standards and technologies in the technology sector that the Department of the Navy should incorporate into its technology roadmap for providing state-of-the-art capabilities to the Fleet/Force

Background

- The Department of the Navy seeks a relationship with the venture capital community that optimizes the prospects for rapid introduction of innovative technologies into acquisition programs. The following were major conclusions on venture capital engagement that were contained in the HAC response:
 - The greatest value to the Department will be in early awareness of emerging commercial technology trends
 - Venture capitalists can provide awareness in a few areas which, although they do not address all Naval needs, are critical
 - Relationship with the Department of the Navy is of interest to venture capitalists for reasons beyond funding

Terms of Reference

Specific Tasking

- This NRAC panel will examine current approaches to technology development and transition within the Navy and compare them to commercial approaches. Specifically, this NRAC panel will:
 - Review the Navy and Marine Corps technology development plans in mission critical areas (e.g., information technology, communications, logistics, etc.) and provide feedback on ways to more closely align those plans with emerging trends that panel members identify within commercial sectors.
 - Identify emerging commercial sector technologies for potential use by the Navy and Marine Corps. These technologies might be broad trends where the Navy can benefit from an early awareness, or it might be specific technologies that provide disruptive advances.
 - Review technologies within the naval research enterprise that are considered particularly valuable and potentially of commercial interest. Recommend paths to make these technologies available to the commercial sector quicker and for the benefit of the nation/Navy/Marine Corps.



Panel Participants

Chair: Mark J. Lister

Sarnoff Corporation

Alf Andreassen

Paladin Capital Management, LLC

Shanda Bales

El Dorado Ventures

Jack G.W. Biddle, III

Novak Biddle Venture Partners

Milton M.T. Chang

Incubic Venture Fund

Robert McCormick

Trident Capital

Warren J. Packard

Draper Fisher Jurvetson

Tony Sun

Venrock Associates

Sponsor

Mike McGrath

DASN(RDT&E)

Windy Joy Springs

Executive Secretary

Briefings and Meetings

- **Organizational Briefings**

- Navy Organization
- ASN/RDA Organization
- PEO (C4I & Space) Overview
- NRL Overview
- SPAWAR Overview
- Fleet Forces Command: Naval Organization Alignment and Initiatives
- Marine Corp Tactical Systems Support Activity
- The JFCOM Difference
- OnPoint Technologies
- In-Q-Tel and its Venture Capital Model
- Analysis of Government VC Engagement Models



- **Concept Briefings**

- Open Architecture: An Enterprise Approach to Introducing Open Architectures Into Navy Combat Systems... and Beyond
- Sea Based Battle Lab
- The Future of Joint Experimentation
- J9 Innovations & Experimentation
- JWFC Capabilities Development
- Winning Experimentation Strategies Process COMTHIRDFLT



Briefings and Meetings

- **System Briefings**

- Sea Power 21 Gap Analysis: An overview of Naval Needs
- FORCEnet Overview
- FORCEnet Focus Areas
- Joint Battle Management Command and Control (JBMC2)



- **Program & Technology Briefings**

- Advanced Concept Technology Demonstration Brief
- Sea Trial: The Process of Innovation
- FORCEnet Warm-up And Technology Challenges
- DARPA Payloads and Sensors Overview w/ Giant Shadow and Silent Hammer Experiments
- DARPA Submarine Concepts and TANGO Bravo Overview
- VA Class Technology Overview
- Combat System Off Hull and Assembly and Test (COATS)
- Strategic Overview of Naval S&T Portfolio
- Naval S&T investments in Photonics and Nanotechnology



Takeaway

Government equity investment is
not necessary
to access technology emerging
from the venture capital
community.

Overall Naval approach to VC Outreach

- The objective & conclusions on venture capital engagement of the TOR are valid
- Technologies exist where VC investments can be leveraged
- Several models exist to engage VC community
 - Examples: DeVenCI (OSD), In-Q-Tel (CIA), Onpoint (Army)
- Government acquisition process inhibits rapid exploitation of emerging VC technology
 - 2-3 year budgeting cycles
 - Outreach to industry (through primes, BAAs) is not comprehensive

Review technology development plans... (first specific tasking)

- Information accessibility & packaging lacking
 - Dissemination process classically reaches traditional defense industrial base
 - Typically too high level for specific recommendations
- No clear or disciplined process to propose new approaches
 - Small, non-traditional companies lack resources to break into amorphous government market
 - Navigating the acquisition process is treacherous & costly (intellectual property/capital risk, funding, contracting, DCAA, opportunity costs)
- No clear or disciplined process to harvest new technologies
 - Program managers normally do not have the resources to stay current with accelerating technology change
 - Transition opportunities are rare
- Programs of record are not VC opportunities

Review technology development plans...

Recommendations:

(first specific tasking)

- Create processes to continuously identify & communicate needs
 - “Feet in the fleet”
 - Program office technology liaison / VC (commercial) ombudsman
 - Interns within VC firms
 - VC day in addition to industry day
- Create a program with processes & funding to continuously identify, experiment, evaluate, and transition technology
 - “Sherpa” model (reinvigorated CTTO)
 - Rapid acquisition vehicle with FAR protection (OTA/845)
 - Budget line to fund experiments, exercises, sea trials, prototyping, CONOPS development, understand implications, technology transition



***Findings &
Conclusions:***

***Identify emerging commercial technologies...
(second specific tasking)***

- Technology areas where top VCs have a proven and consistent track record of success:
 - All aspects of computing
 - Wired and wireless communications
 - Enterprise applications
 - Devices, sensors, chips
 - User interfaces
- Commercial trends that will impact Naval operations
 - Convergence of cyber and real world
 - Convergence of computing, communications, and data access (smart nodes)
 - Anywhere, anytime computing
 - Unstructured text processing
 - Consumer services VOIP/broadband/wireless
 - Novel process technology (nanotechnology, MEMS,etc.)



Identify emerging commercial technologies...

(second specific tasking)

Recommendations:

- Create processes to continuously vet ongoing programs and plans with VC community
 - Visibility combined with dialog leads to understanding
 - Interns at VC firms
 - VCs at Sea
 - Understanding combined with programmatic mechanisms leads to implementation
 - Proactive program to engage VCs: “Sherpa” model
 - Funding to experiment with technology today that will be available in 3 years to understand Naval issues in employing or deploying

Recommend paths to commercialize Naval technologies... (third specific tasking)

- Investment community looks to Government to invest in basic research
 - Creates pool of technology to harvest
 - Examples: Nanotechnology, biotechnology
- Limited opportunities to commercialize specific Naval technology initiatives
 - Process inhibitors – will key personnel go with NewCo?
 - No unique competitive commercial advantage
 - No market



Recommend paths to commercialize Naval technologies...(third specific tasking)

Recommendations:

- Technology investment and development roles for Government, industry, and capital communities need to be defined
 - Prevents Government from competing with industry
 - Enables better leverage opportunity
 - Requires closer communications

The Bottom Line

- Government equity investment is *not necessary* to access technology emerging from the venture capital community.
- The DoN should create a program to identify technology opportunities emerging from the VC community and fund experimentation to determine the efficacy, CONOPS, and transition issues of these technologies.