

Venture Capital Panel



Army Science Board Venture Capital Panel

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TOR Synopsis

...ASB conduct a study on “Venture Capital” as a means of exploring technological opportunities for modernizing the objective Force given future budgetary constraints.

“Provide practical insights into potential opportunities for leveraging venture capital to maintain modernization toward the Objective Force.”

ASA(AL&T) Letter to Chairman, ASB



What is Venture Capital Funding?

- Venture Capital (VC) is money managed by a professional Venture Capital entity and provided to innovative, and/or rapidly expanding enterprises that have the potential to achieve significant economic success.
- Many Fortune 500 companies have a corporate VC subsidiary to gain access to new technologies. In theory, this model could help the Army gain access to new technologies.



Basic Problem Set

- No compelling reason for major Venture Capital firms to work with the Army
- The Army limited in (a) its ability to identify relevant commercial technologies that can be incorporated rapidly into developing systems and (b) its ability to rapidly push commercially derived technology into developing systems.

There is No Free Lunch



Is there an Answer?

- Army has a range of needs and a range of existing tools
 - Issue is how does one match up the needs with the tools
 - Tools all offer ways to work with current procurement practices in less time
 - Most understand risk domain of “elusive technology”, e.g., science program funding, schedule, competition, commercial market
- Is there a need for any additional “tools”
 - In-Q-Tel
 - Strategic Business Partnerships
 - Enhanced Small Business Innovative Research Program (SBIR)
 - Selected FAR waivers and relief



Could the Army Leverage VC Dollars to Help Modernize the Objective Force?

Constraints

- Venture capital is not a viable means to acquire basic research. Very few VCs will invest until the inventor has completed concept validation and has a clear path to commercialization.
- The Army's royalty income from intellectual property (IP) has averaged less than \$425,000 a year. This suggests that the Army's IP has only modest value to the commercial sector. Accordingly, the Army's IP probably has only marginal potential for leveraging.



Could the Army Leverage VC Dollars to Help Modernize the Objective Force?

Constraints (continued)

- The Army generally lacks the expertise to assess emerging commercial technology that has a reasonable possibility of maturing into a technology that can significantly help modernize the Objective Force.
- Even with an annual budget of \$50 million for three years, an Army VC Fund would be too small “to be on the radar screen” of most emerging technology companies seeking VC financing.
- Enabling legislation required before Army could make an equity investment in an emerging technology company and retain/use earning, if any.



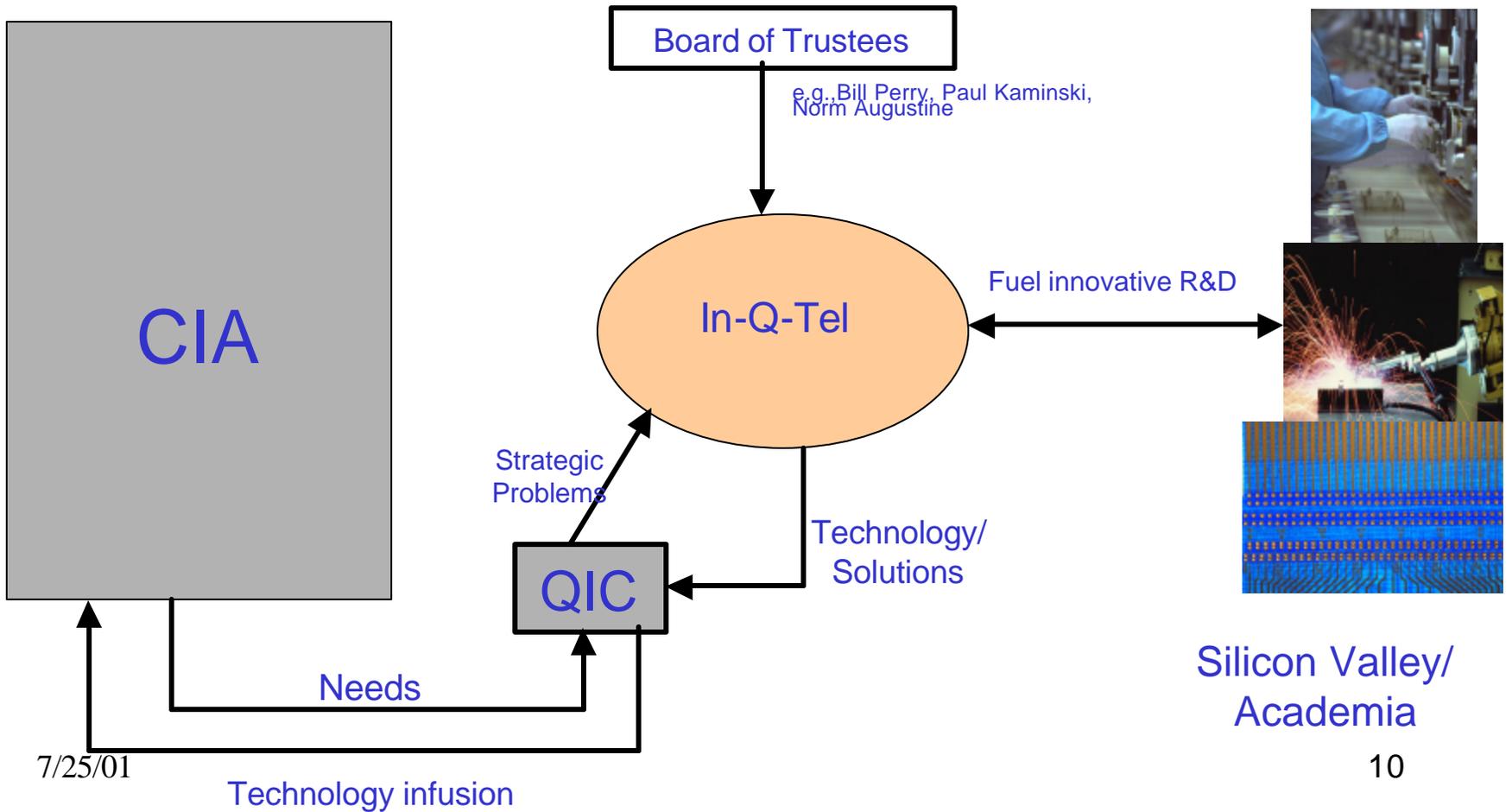
What is the CIA's In-Q-Tel Model?

The In-Q-Tel Model

- Public purpose, not for profit – 501c(3)—corporation established by the CIA with legislative endorsement
- Innovative, commercial contracting solutions tailored to meet sponsor and supplier needs for information technology using unique CIA contracting authority.
- CIA interface through an internal organization, QIC
- *In-Q-Tel* business model includes using VC and VC techniques to facilitate technology integration and application to specific problems



In-Q-Tel Model





Why The In-Q-Tel Model Is Not a Strong Candidate for the Army

Modernizing Objective Force vastly broader than In-Q-Tel's focus on information technology (IT)

- IT is not “basic research” intensive
- VCs have existing proclivity for IT
- The “overhead” to finance *In-Q-Tel* and QIC appears excessive
- The In-Q-Tel model of making anticipated Return on Investment (ROI) as an evaluation factor for investment decisions could seriously detract from selecting vendors with the greatest potential to develop technologies necessary for the Objective Force. Return on Functionality (ROF) is a better measure



Why The In-Q-Tel Model Is Not a Strong Candidate for the Army(con't)

- Unlike DoD, the CIA does not need or have an Small Business Innovative Research Program (SBIR), access to DARPA or Other Transactions (OT) authority.
- Too early to ascertain if In-Q-Tel model is successful
- The In-Q-Tel model is perceived as successful, in part, due to:
 - A “Halo Effect.” It is supported and closely watched by its primary supporters
 - The In-Q-Tel officers and members of the Board of Directors are nationally renowned experts.



Findings

A. In-Q-Tel like solution not the answer for the Army

- As a norm, the Army should not take an equity interest in any emerging technology company.
- As a matter of national policy, federal agencies generally should avoid owning a minority interest in private companies.
- The ASB Panel disfavors the In-Q-Tel model of making anticipated Return on Investment (ROI) an evaluation factor for investment decisions. Simply put, it detracts from the foremost objective of selecting vendors with the greatest potential to develop technologies necessary for the objective force.
- By not taking an equity interest, the Army can circumvent the tumultuous issue of how to dispose of any ROI.



Findings (con't)

B. Traditional Research, Development & Acquisition programs (SBIR, Rapid Acquisition Program for Transformation (RAPT), etc.) offer some relief with more innovative execution

- **Stress more commercial-like acquisition practices in existing SBIR program**
- **Use of Other Transaction Authority would be the norm rather than the exception to battle the myth of slow payment, excess FAR and paperwork requirements**
- **Adopt Generally Accepted Accounting Practices wherever possible**
- **Emphasize initiatives which have higher likelihood of transitioning to succeeding phases**
- **Research and employ mechanisms to gain industry interest to make the Army attractive to “technology investors” with tools similar to targeted incentive tax credits for funding Army critical technology start-ups and award fee “prize” money for proven performance**



Findings (con't)

- C. Army has no way to continually evaluate and obtain commercially derived but militarized solutions which would be accepted, adopted and procured as solutions for high priority Army Problems**
- **Need to focus on a small, focused group of technologies such as IT, Robotics, MEMS (Micro Electro-Mechanical System) for Power, Nano Technology**
 - **Need to find a way to provide advice on emerging technologies from industry innovators outside DoD to Army leadership**
 - **Need to fund a way to monitor technology needs for developing and developed systems**
 - **Need FAR authority and budget process to rapidly and commercially buy militarized adaptations of commercial technology, components or end items**



Findings (con't)

D. Establishing an Army Venture Capital fund will not provide a solution to Army R&D funding shortfalls

Complex Problems including -

- Government held equity
- The approach to solving military needs is untested
- Premature based on lack of legislative authority



Overall Finding

The critical issue is not the generation of funding for science and technology, but the Army's ability to identify transformational, commercial technologies and policies and procedures to transition those technologies rapidly into Army systems.



Task Force Recommendations

- Obtain a FAR class deviation under FAR 1.404 to allow the use of FAR Part 12 "Acquisition of Commercial Items" to allow the Army to exploit emerging commercial technologies and procure "near" commercial items.
- Recognize that such R&D falls within the definition of commercial item because it involves "modifications that do not significantly alter the non-governmental function or essential physical characteristics ... or change the purpose of a process." (Reference: FAR 2.101.
- The deviation should specifically authorize other contract types in addition to "firm-fixed-price contracts." (Reference: FAR 12.207)



Task Force Recommendations (con't)

- Establish an Advisory Committee on Commercially Relevant Technologies within the ASB
 - Exec Sec'y: DASA(R&T)
 - Establish annual Study Report: “State of Technology, 20XX”
- Take better advantage of the flexibility within current R&D contracting tools, greater use of Other Transactions, and improved training and “culture”
- Leverage off other Service/Agency initiatives through better coordination and using proven practices
- Put in place at least two new initiatives focused on making the Army better able to rapidly acquire selected items using “Integrated Power Sources” as a pilot program



Task Force Recommendations (con't)

- Establish an Army Technology Team reporting to the Assistant Secretary of the Army (AL&T):
 - To continually monitor the happenings in technology corridors such as Silicon Valley to identify emerging commercial technologies. Similarly the organization would be expected to network with existing VCs.
 - To work with technology experts in Army Research Laboratory (ARL) and ASB to assess whether identified emerging commercial technologies have a reasonable possibility of maturing into a technology that can significantly help modernize the Objective Force.
 - Annually review the state of technology within the Army through an ASB committee.



Task Force Recommendations (con't)

Attack the problem of Integrated Power Sources

- Establish a “prototype” Advisory Committee chaired by the DASA(R&T) to investigate ways that Integrated Power Sources, including innovative battery technology, Electronic Power Management, and power production by fuel cell, MEMS based turbines, etc. can be integrated into existing Army Systems.
- This committee will brief out the ASA(AL&T) within 8 weeks