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THE CIA'S IN-Q-TEL MODEL *ITS APPLICABILITY*

Wendy Molzahn

In July 1999, the Central Intelligence Agency (CIA) chartered and funded a newly established corporation, In-Q-Tel, Inc., to search the private sector for promising commercial technologies and to invest in the development of new technologies to support the Agency's critical intelligence missions. Overviews are provided of the structure, processes, and problems associated with the In-Q-Tel model; the Department of Defense's (DoD) current ability, through innovative programs and flexible contracting authorities, to attract cutting-edge technologies; and the potential costs and benefits of establishing a "venture catalyst" firm similar to In-Q-Tel for DoD. Finally, it is recommended that DoD establish a "venture catalyst" firm as a tool to attract new technologies in addition to — rather than as a replacement for — existing programs and authorities. Success will depend on DoD's ability to transform its culture to accommodate innovation, risk, and flexibility.

The military's new dependence on information systems was driven home Thursday by Defense Secretary Donald H. Rumsfeld in a speech aimed at refocusing the Pentagon's efforts to change the military to better counter the threats of the 21st century. In robust defense of President Bush's proposed \$48 billion increase in military spending next year, Rumsfeld called for more funding for intelligence and more attention to unpiloted aircraft and other sophisticated reconnaissance systems. "We need to find new ways to deter new adversaries," Rumsfeld said. "We need to make the leap into the information age, which is the critical foundation of our transformation efforts."

"War Success Propels Shift to Digits,"
The Washington Post, February 2, 2002

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In 1998, senior officials in the Central Intelligence Agency (CIA) began to realize that there was a significant information technology (IT) gap between the Agency, which continued to leverage off of past accomplishments, and the private sector, which was transforming its enterprises through the use of cutting-edge technologies. The CIA leadership determined that in order to regain the lead in technology the Agency experienced in the 1950s and 1960s during the development of the U-2, SR-71, and CORONA reconnaissance programs, it would need to establish a vehicle to tap into private sector advances in information technology (Yannuzzi, 2000). In May 1998, George Tenet, the Director of Central Intelligence (DCI), announced in his “Strategic Direction” initiative:

Beginning with the critical field of IT, we will pursue this [new] approach through the creation of an external nonprofit enterprise designed to be electronically connected to leading research throughout the country. This new entity will speed insertion of mature technologies, support rapid development of mission-critical applications, and enhance our ability to attract the skills and expertise vital to our success. (Business Executives for National Security [BENS], 2001, p. 5)¹

A working group of senior CIA officials was chartered to develop and execute the DCI’s concept. With the assistance of a consulting firm and a law firm, the working group analyzed several federal government models before deciding on a

hybrid model that incorporated aspects of private sector venture capital firms and government technology procurement models. The purely government models were rejected for several reasons — the most significant reason being that the working group was not convinced that a government organization could react with lightning speed to changes in the dynamic commercial IT environment (BENS, 2001).

At the request of the CIA, Norman Augustine, former CEO of Lockheed-Martin, founded In-Q-Tel (originally named Peleus, Inc. and then In-Q-It) as a private sector corporation in February 1999. It remains a nonprofit, non-stock corporation, incorporated in the state of Delaware and exempt from federal income taxation under section 501(c)(3) of the Internal Revenue Code. In-Q-Tel’s Certificate of Incorporation dated 16 February 1999, states that its purpose is to:

- Perform and promote research and related scientific endeavors in the field of IT;
- Foster collaborative arrangements that make private sector IT expertise more readily accessible to agencies of the United States; and
- Foster the development of IT that will benefit the public, private, and academic sectors of the United States (BENS, 2001).

In-Q-Tel was designed to be flexible enough to allow for interface with all elements of the IT community, the technology industry, and academia. Its mission, as originally stated, was “to exploit and

develop new and emerging information technologies and pursue R&D that produce innovative solutions to the most difficult problems facing the CIA and the Intelligence Community” (BENS, 2001, p. 6).² The organization’s vision, according to its July 1999 Charter Agreement is to...[I]nvent the Agency of the future by raising its IT competence to that of the best practices of the private sector and then to explore new areas of research that equip it with capabilities that protect and advance our country’s national security well into the 21st century. (BENS, 2001, p. 6)³

The In-Q-Tel CEO and Board of Trustees set strategic policies and oversee operations. The CIA is the sole source of funds for In-Q-Tel at this time; however, the firm remains an independent entity.⁴ Although In-Q-Tel does not require Agency approval for its business deals, which can include equity investments, contracts, and other partnering relationships, there is a significant amount of coordination between the CIA and In-Q-Tel on all business-related issues. The CIA does not have a typical “program management” oversight relationship with In-Q-Tel — the corporation makes decisions and provides the CIA with results. (Yannuzzi, 2000)

In-Q-Tel was designed to be an agile, flexible commercial firm that could work on its own terms with firms in Silicon Valley and throughout the world. The company has offices in Rosslyn, Virginia and Menlo Park, California. Currently, In-Q-Tel employs approximately 45 individuals (35 in Virginia and 10 in California) in three general areas: operations, technical, and venture. The relationship between the CIA and In-Q-Tel is acknowledged, and

work performed by In-Q-Tel, as well as its relationship with other firms and academic institutions, is generally unclassified.

THE IN-Q-TEL MODEL

The concept of operations for In-Q-Tel continues to evolve. The firm initially focused on the role of technology systems integrator; in this role, In-Q-Tel searched the marketplace for commercial off-the-shelf (COTS) technologies that could satisfy the Agency’s needs (BENS, 2001). In-Q-Tel currently performs as a catalyst in developing technologies to solve specific CIA enterprise IT problems while simultaneously moving them into the commercial marketplace. In-Q-Tel leverages off of the commercial sector to satisfy the Agency’s needs by providing input to promising technologies during the early stages of development. In-Q-Tel has the ability to partner with public and private companies worldwide, as well as with academic institutions and laboratories.

In-Q-Tel engages with the companies in a variety of ways, including work programs and equity investments. Investments typically range from \$500,000 to \$2.5 million in each company, with a total commitment of up to \$5 million for the duration of the relationship (In-Q-Tel, 2002). Generally, In-Q-Tel is one of several venture capital firms investing in each IT company. In-Q-Tel has an expert in-house team that evaluates each technology through a rigorous technical review process

“The concept of operations for In-Q-Tel continues to evolve.”

and provides feedback to the portfolio (IT) firm. Portfolio firms with successful technologies may enjoy a strategic advantage (resulting from In-Q-Tel funding, technical input, or the prospect of marketing their products to the CIA) as their products enter the commercial marketplace. Some versions of the commercial products that emerge typically have been or will be evaluated by the CIA. For its investment of up to \$5 million through In-Q-Tel, the CIA's return may be a cutting-edge solution to an IT problem that uses technologies unlikely to be developed

through federal funding alone.

"In-Q-Tel is a hybrid organization, combining various government and private sector models."

In-Q-Tel is a hybrid organization, combining various government and private sector models. Much like a government Research and Development (R&D)

organization, In-Q-Tel is bound through a contract to only one customer, the federal government. However, as a lean commercial corporation, it is not limited by government bureaucratic constraints, civil service policies, or regulations and procedures.

In-Q-Tel characterizes itself as a "venture catalyst" rather than a venture capital firm, an expeditor of new technologies (In-Q-Tel, 2002). CEO Gilman Louie makes it clear that "[m]ost venture funds focus in on the business model...[w]e have a deep technical expertise...The most important thing is the technology return...[o]f secondary importance is the financial return" (Johnston, 2001, p. E5).

In-Q-Tel's investment in portfolio firms includes time and technical expertise, the

unusual opportunity of allowing firms to test their technology using the CIA as a test bed, and funding. In addition to performing a review of each company's technology, In-Q-Tel also performs an in-depth review of each company's financial status before entering into a contractual arrangement to ensure that the company is financially sound. Depending on the circumstances, In-Q-Tel's contractual arrangements with portfolio firms can include one or more of several components: a software licensing agreement, an agreement that funds technology development or modification in accordance with a specific Statement of Work, and an equity investment in the firm (Richard, R. B. & Cook, K., personal interview, March 1, 2002). Approximately half of In-Q-Tel's deals include an equity investment (BENS, 2001).⁵

THE IN-Q-TEL OPERATIONAL MODEL

The In-Q-Tel Operational Model is comprised of four discrete entities: the CIA, QIC (In-Q-Tel Interface Center), In-Q-Tel, and commercial firms/academia (see Figure 1). The QIC, a 13-member organization, serves as the link — and often the "translator" — between the CIA and In-Q-Tel. As the interface organization, QIC ensures that the CIA's requirements are accurately identified before they are passed to In-Q-Tel; it is also responsible for the transition of commercial IT solutions from In-Q-Tel to the Agency.

The QIC manages contract administration and oversight of In-Q-Tel. The QIC and In-Q-Tel use a collaborative process, the "Q Process," for the development and execution of projects.⁶ The "Q Process" is an eight-step process that begins with Step Q₀, Agency Needs Definition and

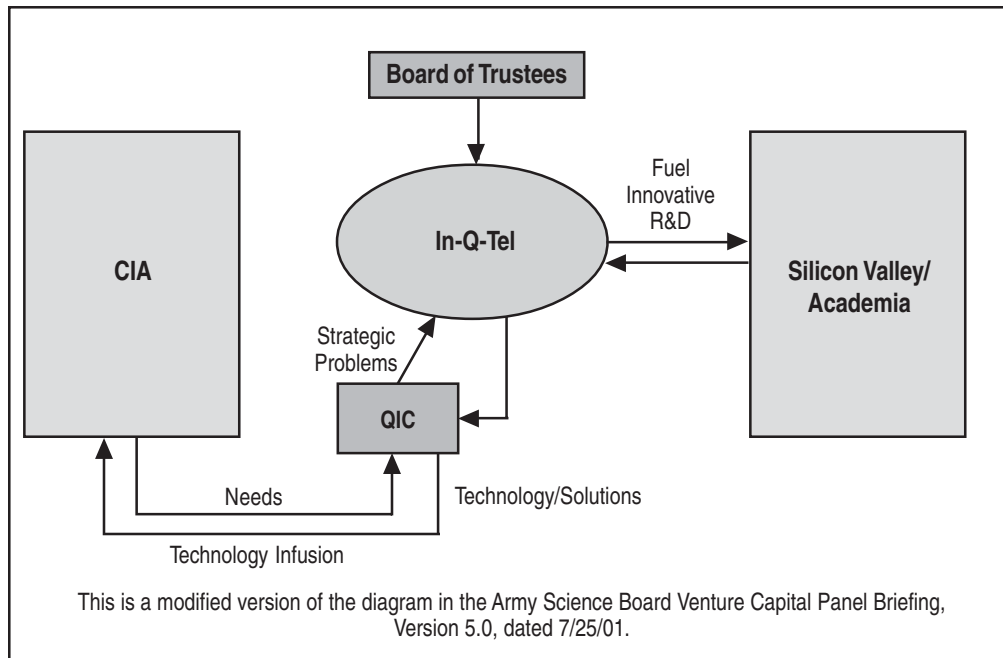


Figure 1. In-Q-Tel Model

moves through step Q_d , Deployment and Agency Acquisition, with several review boards and required approvals along the way.

During the Agency Needs Definition phase, the CIA develops strategic goals to pass to the QIC. Within the parameters set by the strategic goals, the QIC surveys users across the CIA to define the IT Problem Set for the fiscal year. The QIC then refines, prioritizes, and declassifies the Problem Set for submission to In-Q-Tel. In-Q-Tel searches the commercial markets to “landscape the technological ‘spaces’ that it plans on engaging to meet the Problem Sets” (BENS, 2001, p. A-1) and then invests in technologies from firms or academia that will satisfy an Agency Problem Set and also be viable commercial products.

Later in the process, In-Q-Tel tests the technologies against the Agency’s needs, provides feedback to the firms,

and determines whether further funding for prototype development or a pilot program with the Agency is appropriate. In-Q-Tel actively advises the firms regarding commercialization of the products throughout the process. The final phases of the process involve transitioning technology solutions, via the QIC, to the CIA for integration into mission-critical systems. By the end of the process, an In-Q-Tel portfolio company will typically have a product with commercial potential.

Problem Sets are generally broad areas of interest. FY2001 Problem Sets included secure mobile office capabilities, Web discovery techniques, analytic tools and techniques, Internet privacy technologies, and collection technologies. Since September 11, 2001, there has been a shift to technologies that enhance intelligence efforts supporting the war on terrorism, accompanied by a dramatic increase in the

number of proposals and business plans submitted to In-Q-Tel.

Historically, In-Q-Tel receives approximately 600 business plans annually and provides funding to approxi-

“Historically, In-Q-Tel receives approximately 600 business plans annually and provides funding to approximately 10 technology start-ups as a result.”

mately 10 technology start-ups as a result. In FY2001, In-Q-Tel funded approximately \$30 million for programs, pilots, and prototypes. CEO Gilman Louie estimates that approximately 80 percent of the companies funded by In-Q-Tel in 2001 had never done business with the federal govern-

ment (Cortese, 2001). These firms include Mohomine, Intelliseek, Traction Software, Tacit Knowledge Systems, MediaSnap, and Browse3D. Between September and November 2001, In-Q-Tel received over 600 business plans (approximately the number of plans received during the previous year); a minimum of 15 technology investments was anticipated in FY2002 (Kady, 2001).

CORPORATE CULTURE

In-Q-Tel has achieved relative success over the past three years. In part, this has been due to the company’s culture, which is energetic and creative. The current President and CEO, Gilman Louie, was previously a Silicon Valley entrepreneur, an executive at Hasbro Toys, and developer of computer games. Louie believes that In-Q-Tel will fail if it falls into the trap of becoming a government bureaucracy. Louie states, “I do not want this organization to be just another research organization that

was created by the federal government, whose sole mission in life is to get bigger and get more dollars from the federal government...I want this to be very lean, very small, very quick-moving, with...people who don’t want to make it a career” (Loeb, 2000, p. A-15). In-Q-Tel employees have diverse backgrounds, but their experience is overwhelmingly from the commercial sector. Many come from start-up companies, have worked for or consulted with the federal government, and have technical or business/law backgrounds.

In-Q-Tel’s Web site (www.inqtel.com) stresses that the company is designed for agility, that employees who fill positions such as “Visionary Solutions Architect” are expected to stay with the company only three years before moving on, and that only the best and brightest are chosen to participate. The Web site describes the in-house technical teams as *swat teams*, the technologies In-Q-Tel invests in as *frame-breaking*, and states that *if your technology rocks...we’d like to talk to you*. In-Q-Tel is clearly working from a frame of reference that will appeal to the firms it hopes to attract.

In-Q-Tel’s success can also be attributed to the fact that it has an office in Silicon Valley and proactively reaches out to firms with attractive technologies. In-Q-Tel does not merely issue a request for white papers and then wait for a response. The company receives proposals as a result of its Venture Capital Outreach program, from referrals, in response to newspaper and magazine articles, as well as through its public Web site. Finally, In-Q-Tel can offer firms technical advantages that they cannot find elsewhere: a rigorous technical review process, an

opportunity to use the CIA as a test bed, and the potential of partnering with and transitioning technologies to this “power user” in the intelligence community.

In their *Report of the Independent Panel on the CIA In-Q-Tel Venture*, submitted to Congress in June 2001, the Business Executives for National Security (BENS) stated, “the In-Q-Tel business model makes sense and its progress to date is impressive for a two-year old venture... In-Q-Tel’s potential advantage to the CIA outweighs the risk. In-Q-Tel should continue as the CIA’s entrepreneurial and innovative venture facilitating the delivery of new technology to the CIA” (BENS, 2001, p. v).

PROBLEMS WITH THE IN-Q-TEL MODEL

The BENS report indicated, however, that there was room for improvement in the In-Q-Tel model, particularly regarding the relationship and communication between In-Q-Tel and the CIA and the implementation of new technology within the CIA’s business processes. Most of the problems cited were a result of inefficient government processes and security challenges associated with inserting tested technologies into CIA systems (software or hardware to be inserted must be approved by up to six review boards). Few problems were noted regarding the actual functioning of In-Q-Tel as a corporation, its relationship with outside technology firms, or its ability to attract and invest in new technologies.

The report did indicate, however, that due to ineffective marketing within the CIA, key users and stakeholders were

not fully aware of In-Q-Tel’s capabilities. The BENS report recommended that a more proactive QIC could resolve the majority of these interface problems. The BENS report also recommended that In-Q-Tel not expand its mission beyond the CIA until it has been judged a success in its current mission, possibly upon the expiration of its charter agreement in July 2004 (BENS, 2001).

In response to the BENS report, the CIA has implemented several initiatives to streamline and expedite technology insertion into its IT architecture and aggressively market In-Q-Tel’s capabilities within the Agency (Director of QIC and QIC Contracting Officer, personal interview, February 21, 2002). The QIC now informs users and stakeholders, early on, of promising technologies and solicits their input on the tailoring process. The newly consolidated Chief Information Officer (CIO) function at the Agency will also help coordinate and streamline the entire process, from the generation of Problem Sets to the final procurement of IT.

Most notably, the DCI has established an independent solution transfer fund specifically earmarked for establishing pilot programs, normally 12 to 18 months in duration, to implement new technologies

within the Agency. A potential user is provided solution transfer funding to test a promising technology in his system; the user is not required to deplete his own budget to support the pilot program.

“The QIC now informs users and stakeholders, early on, of promising technologies and solicits their input on the tailoring process.”

“In-Q-Tel continues to evolve as a useful, effective tool for the CIA.”

If the pilot is successful, the Agency will issue a separate contract to buy the technology, either on a sole source basis or through a limited, best-value competition if more than one source is identified. Currently, there are seven active pilot programs within the Agency and three more to be launched. Finally, the QIC and In-Q-Tel are in the process of revising their performance metrics to focus on areas such as the acceleration of technology insertion rather than on the number of proposals received or the number of contracts issued.

Despite the need for continuous improvement in the areas of coordination and communication with its customer, significant progress is being made in these areas. In-Q-Tel continues to evolve as a useful, effective tool for the CIA.

INTRODUCTION OF NEW TECHNOLOGIES WITHIN DoD

There are several organizations, programs, and authorities within DoD that were created to encourage commercial firms to partner with the federal government and to introduce new technologies to military systems. These arrangements have met with varying degrees of success. The Defense Advanced Research Projects Agency (DARPA), Federally Funded Research and Development Centers (FFRDC), and Research Laboratories are all chartered to develop state-of-the-art technologies.

The Small Business Innovative Research (SBIR) program and the Small Business

Technology Transfer (STTR) program were established to provide cutting-edge technologies and innovative solutions to DoD by tapping small U.S. technology companies and research institutions. In order to ease burdensome statutory and regulatory restrictions associated with government contracting, 10 U.S.C. 2371 and Section 845 authorities were granted to DARPA, and ultimately the military services, to allow for the award of vehicles other than Federal Acquisition Regulation (FAR) contracts to firms that do not normally work with the government. Under 10 U.S.C. 2371, authority is granted to issue non-FAR agreements, termed “Other Transactions,” for basic, applied, or advanced research. The National Defense Authorization Act for FY94, Public Law 103-160, Section 845 grants the authority to carry out prototype projects without applying several procurement-unique statutes.

The effectiveness of each of these tools in attracting cutting-edge, commercial technologies to the federal government, and how each compares to the In-Q-Tel model, is examined below.

ORGANIZATIONS THAT BRING NEW TECHNOLOGIES TO DoD

DARPA handles projects, each lasting an average of three to five years, designed to ensure that the United States maintains a lead in developing state-of-the-art technologies to meet military challenges of the future. In accordance with its charter, DARPA investigates ideas and performs fundamental research/development and prototyping efforts but does not carry these efforts through to production. Appropriately chartered DoD agencies must procure commercial or

military products that incorporate the technologies. DARPA establishes agreements with industry and educational institutions using FAR contracts as well as Section 845 prototyping agreements and Other Transactions (primarily for consortia arrangements). DARPA has had mixed success in attracting non-traditional firms to do government business.

The DARPA Web site, last updated in June 2002, indicates that the majority of recent Section 845 prototyping agreements were awarded to large traditional defense contractors (The Defense Advanced Research Projects Agency [DARPA], 2002). However, it is likely that small, commercial firms may be second- or third-tier subcontractors working under non-FAR agreements with the primes. Typically, universities lead the consortia under DARPA's Other Transaction arrangements; however, it is also likely that small, high-tech firms participate on the teams.

Clearly, DARPA and In-Q-Tel have significantly different missions. DARPA's role is to develop the very best technologies to support future military requirements, with possible commercial applications to follow. In contrast, In-Q-Tel's focus is to tap existing or potential commercial technologies that can be tested and used, in innovative and creative ways, to solve current IT problems within the Agency. In choosing technologies, commercial applications are key to In-Q-Tel, but not necessarily to DARPA. Based on the published statistics, DARPA tends to contract or establish agreements with traditional defense firms or universities rather than with small commercial firms; small commercial firms are potentially second- or third-tier subcontractors. To date, In-Q-Tel's commercial arrangements are solely

with high-tech firms. Although DARPA plays a critical role within DoD, it does not perform the same function for DoD that In-Q-Tel performs for the CIA.

FFRDCs are privately administered, nonprofit organizations sponsored by the government (DoD and civilian agencies), with restrictions on their activities to preserve their independence and objectivity. FFRDCs work as strategic partners with a sponsoring government agency, as well as with industry and educational institutions, to solve complex technical problems (BENS, 2001). FFRDCs are tied to government contracts, are part of the government culture, and tend to be too slow and bureaucratic to react flexibly to the dynamic environment that surrounds IT (BENS, 2001). Historically, FFRDCs hire engineers to work in-house — they rarely partner with non-traditional commercial firms. Although both In-Q-Tel and FFRDCs are nonprofit organizations bound to the federal government through contractual arrangements, they have radically different cultures and methods of doing business.

Government, university, and corporate laboratories generally work on technical solutions in-house. Often development cycles are lengthy and costs are high. Laboratories provide new technologies to DoD in accordance with the terms of contracts, grants, or cooperative agreements; however, the mission of laboratories is generally different from In-Q-Tel's mission of partnering with commercial companies to leverage off of existing private

“Historically, FFRDCs hire engineers to work in-house — they rarely partner with non-traditional commercial firms.”

sector research and development (BENS, 2001). Most laboratories are more oriented toward developing an in-house product to satisfy a government requirement rather than seeking a commercial solution.

PROGRAMS THAT BRING NEW TECHNOLOGIES TO DoD

“The high-tech firms are primarily attracted by the technical review performed by In-Q-Tel and the prestige of having the CIA as a customer....”

The Small Business Innovative Research Program funds fundamental research and development projects that support DoD requirements and also have potential in the commercial marketplace. The firms solicited by DoD are small companies organized

for profit that have a maximum of 500 employees. Awards are offered in two phases. Phase I awards are six months in duration and funded up to \$100,000; Phase II awards are two years in length, funded from \$500,000 to \$750,000, and result in fabrication of a prototype. After Phase II, the firms must work independently to market their products for production. A survey of the firms that were awarded contracts over the past fiscal year reveals a mix of non-traditional and DoD small businesses participate in the program.

Congress established the Small Business Technology Transfer Program in 1992 to fund cooperative research and development projects involving small businesses and research institutions. The purpose of the program is to enable research institutions to move their technologies to the public and commercial sectors. The DoD STTR Program

was funded at \$31 million in FY2000 (Office of the Secretary of Defense, 2002).

Both of these programs function like In-Q-Tel in that they encourage non-traditional firms and research institutions to provide new technologies to the federal government. However, the SBIR and STTR programs require the issuance of government contracts and the transfer and obligation of funds, a time-consuming, rigid process at best. These government programs are not implemented with In-Q-Tel’s speed and agility. In addition, In-Q-Tel searches out, funds, and tests only technologies that have definite commercial applications; the high-tech firms partnering with In-Q-Tel are expected to make significant amounts of money on the commercial market, much more than the limited amount of money that In-Q-Tel provides.

The high-tech firms are primarily attracted by the technical review performed by In-Q-Tel and the prestige of having the CIA as a customer, not the small amount of funding provided for research and development. This is not necessarily true of the companies responding to the SBIR solicitation, which may rely solely on government funding for their projects. Under the SBIR and STTR programs, the prerequisite for contract award is not commercial viability; government interest rests primarily with the military application of the technology.

EFFECTIVENESS OF DoD’S ORGANIZATIONS, PROGRAMS, AND AUTHORITIES

DoD has a number of tools — organizations, programs, and authorities — that have introduced new technologies into military systems with relative success.

However, none of these approaches has enabled DoD to leverage off of successful commercial technologies in the way that In-Q-Tel has worked for the CIA. In-Q-Tel represents a combination of government and commercial structures.

Although it is an independent corporation, it is contractually bound to the federal government much like the FFRDC model and its strategic objectives are intertwined with the strategic objectives of its only customer. Unlike any purely DoD organization or program, though, it has a commercial culture and extended reach into the commercial community. No DoD organization, program, or contracting authority fills the unique niche filled by In-Q-Tel. The addition of a “venture catalyst” firm to the current DoD structures would provide one more effective tool to enable the military to move into the information age.

ESTABLISHING A “VENTURE CATALYST” FIRM FOR DoD

When assessing the feasibility of establishing an entity based on the In-Q-Tel model, DoD must consider whether its establishment would conflict with any statutes or regulations, the cost of establishing a similar firm, and the organizational buy-in that would be required for success. Based on advice from internal attorneys, as well as an independent law firm, the CIA made the determination that In-Q-Tel lawfully could be formed, chartered, and funded with no special legislation other than the appropriation of funds (Director of QIC and QIC Contracting Officer, personal interview, February 21, 2002).

Norman Augustine and other private citizens formed In-Q-Tel with the understanding that it would specifically support CIA activities. The legal basis for its formation is the same as for any other nonprofit corporation. The Agency then chartered and funded In-Q-Tel through a government contract. The CIA’s contracts with In-Q-Tel are based on the FAR, although the Agency relied on Section 8 of the CIA Act of 1949 to waive certain provisions that otherwise would have applied. The CIA believes that funding an organization like In-Q-Tel using 10 U.S.C. 2371 authority would allow even more flexibility, since under Other Transactions, most FAR regulations are optional, intellectual property provisions can be crafted, and most procurement-specific statutes are waived. It appears that there are no statutes or regulations that would prevent DoD from establishing an In-Q-Tel type arrangement.

According to the BENS report, total General and Administrative costs for In-Q-Tel were approximately \$12.6 million for the first year, including start-up costs of approximately \$2.5 million, and annual recurring costs, including salaries for employees and compensation for Board Members of approximately \$10.1 million (BENS, 2001). In order to establish an In-Q-Tel-like entity, DoD would need approximately \$13 million for start-up and administrative expenses as well as additional funding for mission delivery (programs, prototypes, etc.), equity investments,

“No DoD organization, program, or contracting authority fills the unique niche filled by In-Q-Tel.”

and miscellaneous items. Total CIA funding for In-Q-Tel was \$28.7 million in FY99, \$37.27 million in FY00, and \$33 million in FY01 (BENS, 2001).

QIC and In-Q-Tel employees provided the following “lessons learned” that might be valuable to a government agency:⁷

- Establishing a business and operational relationship with a firm like In-Q-Tel is not easy. You need support from the Head of the Agency down the chain of command. Everyone needs to be committed to success.
- You need the ability to think outside the box and manage rather than avoid risk.
- Initially, you must start with a well-defined, bounded set of technologies to go after. You can always expand the Problem Set to incorporate new technologies later.

“You need the ability to think outside the box and manage rather than avoid risk.”

- Your organization may need a culture change — if you are going to insert new technologies from the outside, the idea that “if it isn’t developed in-house it isn’t good” must change.
- When starting to work with this type of firm, limit your technologies. At first, pick a well-defined technology that is somewhat easier to transfer to ensure success. Once you pick the technology, pick members for the

Board of Directors who have expertise in the technology areas.

- Remember that a company like In-Q-Tel has a high overhead and is human-capital intensive, because of the cadre of engineers who test technologies. If the technology is less complex, the overhead may be reduced.
- Once a decision is made to establish a company like In-Q-Tel, commitment and patience is necessary.

In order to manage risk, avoid pitfalls, and benefit from lessons learned, an organization choosing to establish an entity similar to In-Q-Tel should consider consulting with (or even employing) experienced CIA and In-Q-Tel personnel to establish a business plan geared toward success.

RECOMMENDATION

Establishing a “venture catalyst firm” would greatly benefit DoD by providing a new approach to developing and inserting commercial technologies into military systems. As an addition to rather than a replacement for existing programs and authorities, this model would enhance DoD’s ability to attract and tailor new technologies to provide innovative solutions; establish an efficient, flexible conduit for contracting with cutting-edge firms; enable DoD to leverage off of the commercial sector technologies that might not be available within the limitations of the federal acquisition

The CIA's In-Q-Tel Model

system and with federal funding alone; and further encourage development of dual use technologies.

This model applies not only to IT, but also to other commercial technologies that support the DoD mission. There are no readily apparent legal or financial barriers, provided that funds are appropriated, that would prevent DoD from establishing

an arrangement similar to the arrangement between the CIA and In-Q-Tel. The stumbling block is whether or not DoD has the ability to transform its culture to accommodate the innovation, risk, and flexibility that must accompany this new approach to technology insertion if it is to succeed.⁸



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ENDNOTES

1. In January 2001, the BENS established and supported an independent panel to assess In-Q-Tel's strategy, structure, processes, technologies, and legal foundation. This assessment was required by a Congressionally Directed Action in FY2000 Conference Committee markup language, to perform "an independent cost versus benefits assessment" of CIA's In-Q-Tel venture. The panel's report was submitted in June 2001 (BENS, page iii).
2. Quoting Charter Agreement, July 1999. The Charter Agreement has since been amended.
3. Quoting Charter Agreement, July 1999. The Charter Agreement has since been amended.
4. A detailed discussion of the contractual and funding arrangements between the CIA and In-Q-Tel is found in the section of this paper entitled, *Establishing a "Venture Catalyst" Firm for DoD*.
5. Although In-Q-Tel has not yet seen a major Return on Investment, a Memorandum of Agreement between In-Q-Tel and the CIA defines the allocation of profits traceable to CIA funding: 50 percent of profits go to In-Q-Tel Problem Sets and 50 percent to strategic IT initiatives defined by the CIA.
6. The eight steps of the "Q" Process, although all are not addressed in this paper, are as follows:
 - Q₀ Agency Needs Definition
 - Q₁ Portfolio Management
 - Q₂ Contracting
 - Q₃ Contract Definition and Demo
 - Q₄ Prototype and Test
 - Q_p QIC/IQT Piloting
 - Q_b End-User Piloting
 - Q_d Deployment and Agency Acquisition (BENS, Appendix A).
7. Interviews with Director of the QIC and QIC Contracting Officer, February 21, 2002 and Interview with Chief Operating Officer and Director, Technology Assessment at In-Q-Tel, March 1, 2002.
8. The Department of the Army is currently considering this issue. The Army Science Board Venture Capital Panel issued a report on July 25, 2001 stating that existing programs and authorities provide enough flexibility to introduce state-of-the-art, critical technologies to the Army. However, the FY02 DoD Appropriations Bill and Congressional language earmark \$25 million for the purpose of establishing a venture capital investment corporation for the Department of the Army. The Army is currently assessing the risk of establishing this type of entity and attempting to define a technology problem set (Army Science Board Venture Capital Panel briefing, Version 5.0, dated July 25, 2001).

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