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Government Venture Capital: a Case Study of the In-Q-Tel Model

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GOVERNMENT VENTURE CAPITAL: A CASE STUDY OF THE IN-Q-TEL MODEL

THESIS

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Abstract

The evolution of information technology (IT) has outpaced the federal acquisition system's ability to keep up. And as the United States security strategy increasingly demands information superiority to defeat its enemies, national security institutions cannot afford to lag behind the advancements in IT. The CIA addressed their inability to procure the cutting-edge technologies needed to meet their mission requirements and adopted an innovative acquisition strategy to bridge the gap. They engaged the IT sector through In-Q-Tel, a venture capital firm that invests Agency money in companies that could produce commercially viable technologies to fill the Intelligence Community's (IC) pressing IT shortfalls.

This thesis explores two aspects of the In-Q-Tel model, whether In-Q-Tel creates relationships between the IC and promising technology companies that would not have occurred otherwise, and the contributions In-Q-Tel makes to its portfolio companies that contribute to their success. The results of this study suggest that In-Q-Tel has promoted new relationships between the IC and technology firms that were not actively seeking the government market as well as bringing the IC together with technology companies that had viable technology solutions but for various reasons could not connect with the right users within the IC. Findings also show that In-Q-Tel's technical validation of its portfolio companies' products, its established network of investors and technology users within the IC, and the capital provided to fund product development and/or operating expenses are highly valued by its portfolio companies and directly contributed to the companies' success.

To my wife and children who helped me to focus on this project even when it was the last thing on my mind. Thank you for your support and sacrifices. I love you.

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I would also like to thank Greg Pepus and Gayle von Eckartsberg at In-Q-Tel for their assistance in arranging interviews with their portfolio companies and helping me to understand their company's role bringing technology into the Intelligence Community. I am convinced that what their company does is extremely important work, and our nation is far better off because of it.

Special thanks go to the individuals from the technology companies who agreed to participate in this study. They are extremely busy people, and I'm grateful they took the time to help me with this project. In times of war the military seems to get most of the credit for our nation's security, but many of these individuals have risked their personal wealth and poured their talents and energy into building companies that make direct contributions to our national security. They are patriots, and their entrepreneurial spirit plays no small part making our country great. I wish them all the best.

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GOVERNMENT VENTURE CAPITAL: A CASE STUDY OF THE IN-Q-TEL MODEL

I. Introduction

Background

The threats facing the United States (U.S.) today have changed dramatically since the collapse of the Soviet Union over a decade ago. Today, terrorists have committed themselves to the destruction of America by any means, including the use of malicious technologies and weapons of mass destruction (NSC, 2002). These enemies realize they cannot defeat the U.S. military in a conventional conflict; however, using unconventional tactics aimed at disrupting the U.S. economy and its citizens' security, adversaries hope to achieve asymmetrical results by targeting those areas in which the U.S. is most vulnerable (Rumsfeld, 2002).

The national security institutions called upon to defeat terrorist forces and protect America's interests, are better suited for the Cold War era (NSC, 2002). Prior to September 11th, senior defense leaders explored ways to change the United States national defense structure and capabilities to meet the new challenges facing the country in the twenty-first century. The attacks on September 11th have hastened the need to transform the military (NSC, 2002; Rumsfeld, 2002). Secretary of Defense Donald Rumsfeld has identified six transformational goals to guide U.S. defense strategy and military force structure. Two of these goals involve the way that the Department of Defense (DoD) applies information – protecting information networks from attack and using information technology (IT) to link U.S. forces to fight jointly" (Rumsfeld, 2002).

Though IT is an indispensable tool for U.S. forces, it is the opinion of some senior military leaders that the current defense acquisition system does not perform at a level necessary to achieve the optimum degree of information superiority. While the acquisition system produces its share of successes, a bureaucratic, risk-adverse culture ultimately limits its potential (Rumsfeld, 2001; Roche, 2002; Jumper, 2002). Secretary Rumsfeld observed,

> "The Department of Defense was once an engine of technological innovation. Today the private sector is leading the way in many respects, yet DOD makes it harder and harder for us to keep up, and for those who do keep up, to do business with the Department. Consider that it takes today twice as long as it did in 1975 to produce a new weapon system, at a time when new generations of technology are churned out every 18 to 24 months" (Rumsfeld, 2001: n. pag.).

Others offer a more blunt assessment. Admiral Dennis Blair, former Commander of U.S. Pacific Forces believes that "our acquisition system is fundamentally broken, especially in the area of information technology" (Blair, 2002:46).

Regardless of the opinion one holds of the acquisition system, an important objective remains, in the words of the Air Force Secretary, James Roche, to "field today's technology today" (Roche, 2002:n. pag.). Defense acquisition transformation requires a new mindset. In a call to action, Secretary Rumsfeld challenged the DoD acquisition community: "We must promote an entrepreneurial approach to developing military capabilities – one that encourages people to be proactive, not reactive, and to behave less like bureaucrats and more like venture capitalists" (Rumsfeld, 2001:n. pag.).

Perhaps Secretary Rumsfeld's reference to venture capitalism can be traced to the Central Intelligence Agency (CIA). Though not part of the DoD, the CIA shared many of DoD's frustrations – the traditional acquisition system could not adequately meet the

Agency's IT requirements (BENS, 2001). After careful deliberation, the CIA made a bold and innovative move. They became a venture capitalist of sorts.

Understanding the importance of IT in intelligence operations and the problems facing the CIA, Director of Central Intelligence (DCI), George Tenet, consulted with leaders in industry and defense about how to bridge the gap between agency IT needs and the availability of commercial IT solutions. The effort, led by former Lockheed Martin CEO, Norman Augustine, resulted in the creation of In-Q-Tel (BENS, 2001). In February 1999, In-Q-Tel incorporated in the state of Delaware as a privately-held enterprise whose only customer is the CIA. Its mission is to "identify and invest in companies developing cutting-edge IT that serves U.S. national security interests" (In-Q-Tel, 2004).

Those familiar with the CIA's technology requirements and the In-Q-Tel model explain that the CIA's diminishing influence in the world of IT was not helped by the fact that the CIA continued to look to their traditional contractors to fill their increasing IT requirements; however, in the opinion of former CIA Deputy Directory of Science and Technology, Ruth David, these contractors were not necessarily the right fit to meet the Agency's needs (Laurent, 2002). Moreover, many small companies concerned with maintaining their intellectual property rights and not having the staff available to deal with onerous federal acquisition policies, may opt not to deal with the federal government as a customer (Held, et al., 2002; Lewis & Holzer, 2002; Sorett & Campos, 2003; Laurent, 2002).

The In-Q-Tel model has drawn attention from all corners of government and industry. The magazine, Government Executive, reports that CIA Executive Director, A.

B. Krongard referred to the In-Q-Tel model as "a baby with a beard – everybody is rushing in to see it" (Laurent, 2002:42). Indeed, there seems to be more than idle interest in the concept of government venture capital funds. Since In-Q-Tel emerged as an alternative acquisition model, other government organizations have followed suit. The National Imagery and Mapping Agency (NIMA) introduced its relationship with Rosettex in 2002, and the Army announced its own venture capital initiative after engaging with OnPoint Technologies in 2003. With acceptance of government venture capital models apparently taking hold, further study of the practicality and effectiveness of government investment in start-up firms and their technologies is in order.

Purpose

This thesis seeks to explore the viability of government-backed venture capital funds to promote the introduction of new commercial technologies into sponsoring government agencies using In-Q-Tel as a government-backed venture fund model. This study relies on data gathered from interviews with 13 companies that make up In-Q-Tel's investment portfolio to answer these questions: 1) Has the In-Q-Tel model created new business relationships between the IC and technology companies that would not have existed otherwise? 2) What services does the In-Q-Tel model offer its portfolio companies that promote their growth and development, and what value do portfolio companies place on In-Q-Tel contributions?

Research Importance

Though literature has promoted venture capital models (the In-Q-Tel model in particular) as promising alternatives to traditional government acquisition methods (Molzahn, 2003; Sorrett and Campos, 2003, Yanuzzi, 2000), no known study has objectively analyzed the performance of existing government-backed venture capital funds. This study aims to identify specific activities that occur in the relationship between In-Q-Tel and its portfolio companies that contribute to the overall success (or lack thereof) of the companies and respective technologies. These findings, taken from the perspective of In-Q-Tel's portfolio companies' management teams, may help determine the effectiveness of government-backed venture capital funds in terms of promoting new technologies and growing small technology companies that ultimately serve government objectives. These findings may apply to existing government-backed venture capital funds or assist senior government leaders in developing venture funding models for the future.

Thesis Structure

The remainder of the thesis is organized as follows: Chapter 2 reviews applicable literature as it relates to promoting innovation in the DoD and industry, then it advances to a review of venture capital as a catalyst for innovation, focusing on the advantages and disadvantages of corporate venture programs and their determinants of success. Chapter 2 closes with a discussion of In-Q-Tel, the CIA's venture capital model and how it is organized and operates. Chapter 3 presents the details of the single case study methodology used to identify and collect the data for this case study. Chapter 4 describes

the data collected through interviews with case participants and presents the findings of this research as analyzed through pattern-matching techniques. Finally, Chapter 5 offers the conclusions of this study and recommendations for further research.

II. Literature Review

This chapter discusses the literature relevant to this case study beginning with an overview of the organizations that promote the development of new technologies in the DoD. Next, this chapter reviews methods that the commercial sector relies on to promote innovation and develop new technologies. After establishing the means for innovation in government and industry, the chapter proceeds to describe the role of venture capital.

The discussion begins with an explanation of conventional venture capital and develops into a description of corporate venture capital programs. This section presents the various structures of corporate venture capital programs to include their strengths and weaknesses and concludes with determinants of corporate venture program success.

The last major section of this literature review addresses the role of venture capital as an acquisition solution to government technology requirements. This section describes the factors that led to the creation of the In-Q-Tel model, the processes by which it operates, and ties In-Q-Tel's objectives with literature on corporate venture capital models.

Sources of Innovation in Government

Three types of organizations within the DoD have the task of fostering partnerships between the DoD and commercial firms to promote the development of new technologies. These organizations include the Defense Advanced Research Projects Agency (DARPA), Federally Funded Research and Development Centers (FFRDC), and

research and development (R&D) laboratories (found within each of the armed services) (BENS, 2001). Understanding the sources of innovation within the DoD and their respective strengths and weaknesses establishes the framework to discuss new and more responsive ways that introduce innovative technologies into the DoD other than through the traditional DoD research institutions.

Defense Advanced Research Projects Agency (DARPA)

According to their strategic plan, DARPA develops "radical innovations" that serve a military or national security purpose. The focus of its projects lie beyond the known military requirements of today; instead, they "imagine" what combatant commanders will need to fight future wars and then develop technologies required to make those future systems a reality. Typical DARPA projects are considered high-risk, but their sponsors expect successful initiatives to yield high returns. Some examples of DARPA projects that underscore the level of technological innovativeness include stealth, unmanned aerial vehicles, and the Internet (DARPA, 2003).

DARPA technologies usually find their way back into the DoD through defense contractors. They emphasize that the level of technical complexity found in their innovations and the need to persuade military users to commit to expensive and often unconventional systems means technologies often take many years from concept development to actual application in a real-world setting. The risk and cost of technology insertion into new systems necessitates deliberate coordination between DARPA, the systems integrator, and the government organization funding the requirement. (DARPA, 2003).

DARPA certainly possesses an innovative culture necessary to produce the types of IT advances that would keep national security agencies on the cutting edge, but the organization's focus on long-term solutions at the expense of meeting current requirements and conceptual study over applied solutions combined with the high risks associated with their work does not make the organization a viable option to meet the DoD's current IT requirements (BENS, 2001).

Federally Funded Research and Development Centers (FFRDC)

FFRDCs, a second source of innovation within the DoD, are typically universities and other nonprofit research institutions that have been sponsored by government to study complex technical problems. They do not manufacture products, and their research focuses on issues in the public interest. Though FFRDCs possess a great amount of intellectual capacity to solve many of government's technology requirements, the process is slow, bureaucratic, and not conducive to solving short-term and rapidly-evolving IT requirements. Because they work closely with their government sponsors and their research is directed through traditional government contracts, their work tends to be specific to a given requirement (BENS, 2001).

Research and Development (R&D) Laboratories

R&D laboratories are a third type of organization that brings technology to government. Across the DoD, each service maintains its own R&D organizations that conduct applied and basic research in various fields of interest. R&D labs perform in-house work and also collaborate with outside sources through government contracts to solve service-specific requirements. The strengths of R&D labs include the depth of technical resources and their ability to produce basic and applied research. However,

R&D labs are expensive to operate, and they typically follow long-term development cycles. For these reasons, R&D labs are not well suited for addressing short-term technology requirements (BENS, 2001).

Sources of Innovation in the Commercial Sector

Traditionally, corporations relied heavily on their internal R&D activities to produce innovative technologies that would contribute to the success of their product offerings. Strong R&D laboratories could serve as a source of competitive advantage and often acted as a barrier to other firms wanting to enter markets in which they had no experience in the relevant technologies. Today, firms have cleared technological entry barriers by looking outside the organization to acquire new competencies by which they can compete with firms already established in those markets (Gompers, 2002; Chesbrough, 2003).

Some believe that corporate R&D no longer offers the level of innovation that allowed firms to dominate their markets in earlier times. Based on a study comparing the innovation produced by incumbent and new-entrant firms in the photocopy industry, Henderson (1993) suggests that incumbent firms tended to introduce incremental innovations and relied on their historical market share as their source of competitive advantage. On the other hand, new entrants to the market opted to compete by offering innovations radically different than the existing market technology. Often these product introductions rendered incumbent firms' products obsolete.

Established firms tend to lag behind new entrants in a technology-driven market for several reasons. For example, internal resistance within the firm may prevent new

technologies from being incorporated into product offerings, especially if the new technology challenges the company's current product offerings. Also, established firms have not always recognized the potential utility of their innovations (Gompers, 2002). Additionally, employee mobility can limit the effectiveness of internal R&D. Chesbrough (2003) suggests that the movement of "knowledge workers" in and out of companies beginning in the latter years of the 20th century affected organizational continuity. As a result, many innovative ideas have languished. Another consequence of employee mobility is that innovative employees sometimes take their best ideas with them when they leave and create new companies, which compete with their former employers (Chesbrough, 2003; Gompers, 2002).

The diminishing value of internal R&D as a primary source of competitive advantage has driven corporations to consider other alternatives to spur innovation. Chesbrough (2003) promotes the idea that many industries engage in "open innovation" meaning that a company will "commercialize its own ideas as well as innovations from other firms and seek ways to bring its in-house ideas to market by deploying pathways outside its current businesses." Chesbrough (2003:38) posits that companies can enable open innovation in three ways: funding, generating, or commercializing innovation. Funding innovation through the use of venture capital will be developed in greater detail later in this chapter.

The Role of Venture Capital

An Explanation of Conventional Venture Capital.

New companies require capital (money) to grow, and the capital needed to fund a new business is often greater than an entrepreneur can supply on his or her own. Moreover, traditional sources of capital, banks and the public equity market, do not lend themselves to funding new enterprises. The high risks associated with business start-ups demand a commensurate interest rate that usually exceeds the amount banks could charge under existing laws, and companies with sales less than $15 million and assets less than $10 million (as of 1998) cannot access investment banks and public equity markets because of regulations designed to protect investors. This creates a void filled by venture capital (Zider, 1998).

In the conventional venture capital industry, wealthy individual investors, pension funds, financial firms, insurance companies, and university endowments typically provide the funds necessary for new business start-ups. In exchange for providing capital to high-risk ventures, investors expect venture capitalists to deliver an annual return between 25% and 35% over the life of the investment. Such high rates of return do not come easily. While venture capitalists carefully scrutinize new businesses (all ventures are believed to have a realistic chance of succeeding in the beginning) as few as 10% deliver the returns necessary to meet investor expectations (Zider, 1998).

Consider a deal involving a $3 million investment in a start-up firm designed to cover the first two years of operating costs and salaries; the initial investment earns the venture capitalist privileges to protect their stake in the new firm. For example, the start-up may cede 40% (or higher) of ownership to the venture capitalist. This “preferred”

ownership stake often includes disproportionate voting rights and the ability to make key decisions concerning the start-up to include the sale of the company and when to take the company public (Zider, 1998).

To maximize the likelihood that their investments will succeed, most venture capitalists take an active role in the development of their investments – for better or worse (Zider, 1998; Hellman & Puri, 2002). Besides raising capital, Hellman & Puri (2002) suggest that venture capitalists perform three roles: providing value-added services, "professionalizing" a firm, and helping a firm establish itself in the marketplace.

First, venture capitalists provide value-added services. Hellman & Puri (2002) explain that these services include such activities as selecting firms, mentoring entrepreneurs, hiring executives, and formulating strategies. These services are similar to those described by Rind (1981) and Zider (1998). Zider (1998) adds that given the size of today's portfolios, the individual attention each investment receives from a venture capitalist is diluted compared to the level of assistance received in the early 1980's. If a typical venture capitalist spends 40% of his or her time acting as consultant or director, the strongest and weakest performers in that portfolio receive the least attention – the former because attention probably is not needed; the latter because it doesn't merit a venture capitalist's valuable time.

The second role, "professionalization," refers to enhancing the human resources of a company. For example, finding the right management team that gives the venture its best chance to succeed, in some instances, involves replacing the founder as CEO (Hellman & Puri, 2002). Zider (1998) notes that the person who founds a company is not necessarily the right person to grow the company and take it public. In about 40% of the

cases studied by Hellman & Puri (2002), the founder continued to perform some role with the firm after a new management team took control, for example, serving as chief technology officer, vice president of corporate development, or sitting on the board of directors.

The third role venture capitalists perform is to help their portfolio companies establish themselves in the marketplace. Hellman & Puri's (2002) research suggests that firms backed by venture capital have a significantly greater probability of bringing a product to the market than firms without venture capital backing. The authors report that firms backed by venture capital also bring their products to the market much faster than those without venture capital backing.

Corporate Venture Capital.

History of Corporate Venture Capital.

In the late 1950s and 1960s, corporations began to apply venture capital practices as a strategy to supplement their internal product development efforts (Rind, 1981) after witnessing the success of independent venture capitalists (Gompers, 2002). Companies such as Xerox, Dow, and General Electric began direct investment programs to serve as windows to identify new opportunities for growth and acquisitions (Sykes, 1990; Gompers, 2002). Litton Industries and Teledyne were formed through the acquisition of a number of smaller technology firms under the umbrella of a single corporation (Rind, 1981). Other examples include DuPont and Ralston Purina who created internal divisions to explore ventures from within (Gompers, 2002). Scores of large U.S. firms have experimented with some type of corporate venture capital program; however, in

many cases, the results were not promising (Hardymon, DeNino, & Salter, 1983; Rind, 1981; Sykes, 1990).

Corporate Venture Capital as Strategy

Literature substantiates the belief that corporations employing venture capital do so as part of corporate strategy (Winters & Murfin, 1988; Rind, 1981; Sykes, 1990). Stated objectives vary from corporation to corporation and from study to study leaving no single objective at the heart of a strategy, but a commonly reported theme is that corporations rely on venture capital to identify firms, technologies, or markets that may offer new opportunities, or strengthen existing products or services in which the corporation has an interest (Rind, 1981; Sykes, 1990; Winters & Murfin, 1988). Sometimes referred to as a "technology window," some corporations have successfully used venture capital to evaluate new markets and subsequently redirected their efforts to pursue new opportunities that would have otherwise remained unknown (Winters & Murfin, 1988; Sykes, 1990). The technology window objective is particularly useful in industries characterized by rapid technological advances (Winters & Murfin, 1988).

Hardymon et al. (1983) caution, however, that the technology window is often "opaque." The authors note that maintaining lines of communication between an activity managing the corporate venture and the corporate management team is not enough to ensure success. While those involved in the venture activity often have deep knowledge of the corporate ventures and the respective industries in which they operate, they do not necessarily understand how that translates into the corporation's strategic interests. Moreover, the authors cite interviews with entrepreneurs who fear the loss of proprietary information to larger corporations and choose not to share information related to its

technologies. This puts corporate venture capital activities in a position of conflicting interests between the venture firm and the sponsoring corporation. Thus the corporation may not have access to the technologies they wish to better understand.

A second objective described in the literature is that corporate venture capital activities may serve as an avenue for the sponsoring corporation to harvest technology licenses and product marketing rights through its involvement with sponsored firms. Many believe that venture firms can develop and commercialize new technologies faster than large corporations (Rind, 1981). As such, a corporation stands to benefit from its relationship with the venture firm by acquiring licenses to newly developed technologies for its own purposes. Both the corporation and the venture firm stand to gain from this relationship. The corporation gains access to new technologies that it probably would not have developed on its own, and the venture firm can sell technologies resulting from their efforts that they could not have marketed as easily as a more established company (Winters & Murfin, 1988).

Similar to the case for licensing agreements, with product marketing rights corporations can provide their venture firms access to established marketing and distribution networks. In turn, these ventures may make technology rights available to their sponsoring corporation, especially in markets not targeted by the venture firms. The advantage to both parties is that the venture firm saves considerable costs by having access to an established marketing network and the corporation has access to new technologies at reduced costs, which keeps it competitive in existing markets and possibly opens new markets (Winters & Murfin, 1988). Hardymon et al.'s (1983) warning that venture firms distrust large corporations may hold true, however. Venture

firms have no obligation to enter into these relationships and may choose not to do so, negating the corporation's objective for involvement.

Another objective described in the literature is that corporate venture capital activities improve management's understanding of a firm before proceeding with an acquisition (Rind, 1981; Winters & Murfin, 1988). Identifying and acquiring new firms can be a risky proposition; however, a successfully run venture capital program provides a corporation with a better understanding of the firms they may wish to acquire. One reason is that a venture program's management activity generally has a better awareness of the target firm and the workings of its respective industry. This allows the corporation to pursue acquisitions that fit better into the corporation's strategic goals (Winters & Murfin, 1988).

Corporate Venture Capital Organization and Structure.

Corporations pursue new ventures in a variety of ways. This section identifies four categories of corporate venturing models as described by Rind (1981), Winters & Murfin (1988), and Gompers (2002). Those categories are: internal ventures divisions, direct investments, venture capital limited partnerships, and wholly-owned venture subsidiaries. Internal venture divisions exist within the corporation and are sometimes referred to as "intrapreneurship" (Winters & Murfin, 1988). These divisions are tasked to initiate new business ventures from within the company. They are part of the corporate organizational structure, although their charter eliminates some of the corporate bureaucracy. They also rely on corporate technology and resources in their pursuit to develop and market new products or services (Winters & Murfin, 1988).

Some have criticized the results of intraprenuership models. Rind (1981) claims that intrapreneurship models lack the entrepreneurial rewards that conventional venture capitalists receive when new ventures succeed. Also, venture program management often comes from within the corporation and move back to the corporation if the venture fails. This approach reduces the incentive to succeed. Winters & Murfin (1988) take a more moderate view of intrapreneurship models. They cite IBM's success with the internal venturing group that produced the PC as an example where intrapreneurship models have produced great results, but they also attribute that success to a corporate culture that promoted an environment that emphasized the effort.

The second category of corporate venturing is direct investments (Rind, 1981; Winters & Murfin, 1988). Similar to the intrapreneurship model in the sense that the management of the venture program remains within the corporation, direct investment models focus on new ventures *outside* the corporation. The purpose behind this model is to further corporate development; however, the corporation invests in firms outside of the corporation to achieve a number of strategic objectives. Such objectives may include creating a window to new technologies and/or markets, an avenue to future acquisitions, or assuring supplies through vertical integration or establishing partnerships with suppliers (Rind, 1981).

Direct investment models often fail to produce the desired results, and researchers identify two limitations of this approach. First, Gompers (2002) believes that though the resources a corporation could offer to a new venture is an advantage, the benefits of those resources could also limit the venture if it does not align mesh with objectives needed by the new company to succeed. Second, direct investment models often lack sufficient

"deal flow" (i.e., access to new investment opportunities) that conventional venture capitalists see. Since the failure rate of new companies is high, lacking the opportunity to review a large number of deals decreases the probability that the corporate venture management team will invest in successful ventures (Winters & Murfin, 1988)

A third category of corporate venture models is the venture capital limited partnership (Winters & Murfin, 1988; Rind, 1981; Gompers, 2002). This method involves passive investing as a limited partner in a venture fund. Winters & Murfin (1988) observe that corporations that have succeeded with this approach used it as a screening process, following up their investments in the venture fund with direct investments in companies. However, Gompers (2002) points out two drawbacks to this method. First, venture fund partners could bring corporations into an investment at the latter stages of a deal, and often after a venture reached a higher value. And second, because the corporation was a limited partner, it did not have a direct relationship with the start-up firms. Consequently, the benefits a corporation might hope to achieve other than financial return might not be realized through the limited partnership method.

Finally, the fourth method of corporate venturing is corporate-owned venture subsidiaries (Rind, 1981; Winters & Murfin, 1988). There are two types of subsidiaries, a stand-alone venture capital fund whose focus is primarily financial return and a venture development subsidiary similar to the stand-alone group except its focus is on investments that meet corporate strategic objectives. In both cases the venture groups sit outside the corporate structure. They have their own management teams, and they make direct investments in companies (although a venture development subsidiary may also make investments in other funds.) The venture development subsidiary seeks to achieve

benefits to the corporation through acquisitions, technology transfers, and financial returns on its investment. It should be noted, however, that corporate subsidiaries sometimes have the same stigmas as direct corporate ventures. Many entrepreneurs have left corporations because they did not fit into the corporate culture, and they distrust close relationships with corporations, either directly or indirectly. Therefore, corporate subsidiaries may be at a disadvantage, i.e., they only see opportunities after they have been passed over by other venture capitalists (Winters & Murfin, 1988). Gompers (2002) adds that similar to the limited partnership model, the distance between the corporation and the venture may be too great to realize the maximum benefits of the relationship.

Other Problems with Corporate Venture Capital.

There are several reasons that contribute to failed corporate venture capital programs. One reason attributes failure to the personnel tasked to perform the venture capitalist role within a corporation. Many corporations do not employ the right people in key positions of their venture capital programs (Rind, 1981; Winters & Murfin, 1988). Corporate venture managers, especially in internal models, can be too conservative in their investment strategies if a culture exists that punishes failure and does not reward risk taking (Winters & Murfin, 1998). Venture capitalists also perform many roles that require one to be entrepreneurial and have a thorough understanding of business practices and principles. And because of the low success rate associated with new ventures, few people within a corporation, even those qualified to perform the role, are willing to accept the position (Rind, 1981).

Another contributing factor to corporate venture capital program failures is conflicting interests between the venture capital program and the corporation. Corporate

objectives may limit a venture program's ability to use the best venture management practices to ensure success. For example, if the corporate objective is to create a preferred supplier relationship with the venture firm, then the venture firm's ability to pursue other opportunities (even more profitable ones) could be limited. Also, conflicting objectives of corporate executives may affect the venture program's focus. Consider that a corporate vice president of finance may place the most value on profitability while a corporate vice president of research and development may put pressure on the venture program to produce new technologies (Rind, 1981).

Another reason for failure is that legal restrictions sometimes limit corporate venture program objectives. Investors must respect the rights of other investors, and self-serving corporate objectives, especially in cases where the corporation has access to a venture's proprietary information, which could cause legal problems (Rind, 1981).

An inadequate time horizon to determine the success also accounts for the failure of corporate venture capital programs (Rind, 1981; Biggadike, 1979). Most new ventures require about eight years before they reach profitability, and investments usually incur huge losses during the early years of operations (Biggadike, 1979). The issue becomes, how long will corporate management wait for a venture program to achieve success? Most corporate venture capital programs, even successful ones, are terminated before six years. With the largest gains coming as the venture matures, corporations that cannot bear the early losses and lack the determination to see a program through are not likely to see their programs succeed (Rind, 1981).

Determinants of Corporate Venture Capital Program Success.

Though the previous section considered reasons why corporate venturing programs fail, literature does suggest that four factors contribute to the success of a corporate venture capital program: 1) the fit of the program to strategic corporate objectives; 2) the program's management; 3) program involvement with ventures and other investors; and 4) return on investment. This section will discuss how these factors contribute to successful corporate venture capital programs.

Strategic Fit

A previous section discussed the types of strategic benefits corporations may derive from a corporate venture capital program, but aligning the program with strategic corporate goals is an important determinant of overall success (Gompers, 2002; Sykes, 1990; Gompers & Lerner, 1998; Winters & Murfin, 1988). All involved in the operation (for example, corporate executives and venture management) must understand the role and limitations of the program (Rind, 1981; Gompers, 2002). Clear objectives for how the program will serve the corporation will keep the operation focused. Programs without a clearly defined role often pursue ventures that provide no strategic value to the corporation, frustrate executives that have unrealistic expectations, or threaten corporate divisions that see the venture program as ineffective or threatening (Gompers, 2002).

Another finding is that corporations choosing to pursue venture investment as a strategy must also make a long-term commitment to the program (Rind, 1981; Winters & Murfin, 1988). As stated earlier, most ventures experience significant losses during the first few years and do not produce returns until the seventh and eighth years (Biggadike,

1979). Corporations that cannot endure the risks and drain on resources for at least seven years should not pursue a venture capital program (Rind, 1981).

Corporate Venture Program Management

If strategic fit is an important determinant of success, a management team that can identify and invest in ventures that meet strategic objectives is just as important. Management should be savvy in both the technical aspects of the industry and have solid business skills (Winters & Murfin, 1988). Ideally, program management should have an established background as a venture capitalist, either from a conventional venture capital fund or a successful corporate venture program (Siegel, Siegel, & Mac Millan, 1988). The quality of the management often determines the number of opportunities presented to it (Winters & Murfin, 1988).

While the venture capital program's management will likely answer to corporate management, it should have as much autonomy as possible (Rind, 1981; Hardymon et al., 1983; Siegel et al., 1988). The pace of new ventures proceeds rapidly, and corporate venture managers must have autonomy to make decisions without constant corporate consultation (Rind, 1981). Program management should report directly and regularly to the upper echelons of the corporation and keep executives abreast of activities (Rind, 1981; Winters & Murfin, 1988).

Involvement with Entrepreneurs and Venture Capital Community

A corporate venture capitalist's credibility among other investors and ventures is an essential component of a successful corporate venture program (Rind, 1981; Winters & Murfin, 1988). The venture capital market is competitive and opportunities to invest do not just show up at one's doorstep. Many opportunities are discovered by aggressive venture capital managers with close ties to the market (Winters & Murfin, 1988).

A common finding is that successful venture capitalists tend not to invest alone (Winters & Murfin, 1988; Rind, 1981); co-investing with other venture capitalists reduces risk by lowering exposure. Investing alongside other accomplished venture capitalists also serves to validate an investment. Though not a guarantee that the venture will succeed, a trusted co-investor can bring credibility to a deal. A final observation is that successful corporate venture programs should avoid lump-sum funding and diversify their investments (Winters & Murfin, 1988).

Return on Investment

While direct financial returns are usually not the primary reason corporations use venture capital strategies (Rind, 1981; Sykes, 1990), corporate venture capitalists that invest in good companies can achieve returns on their investments similar to those of conventional venture capitalists (Siegel et al., 1988). Researchers point out that financial return is the predominant measure of venture success; however, financial measures have limitations (McGrath, Venkataraman, & Mac Millan, 1992; Miller, Wilson, & Adams, 1988). There is much debate about the period of time a venture should be held to judge its success (McGrath et al., 1992). And even a glaring financial failure could be

considered a success if the parent firm believed the outcome provided other strategic benefits (McGrath, 1992; Winters & Murfin, 1988).

The In-Q-Tel Model

The previous sections developed the role venture capital has performed in corporate innovations. They outlined the organization of venture capital activities and presented their respective strengths and weaknesses. This section discusses the antecedents to the creation of In-Q-Tel, the venture capital firm that serves the CIA, its processes, and how its organization and objectives relate to literature on corporate venture capital.

Background

By 1998, the CIA lagged behind the commercial sector in the realm of IT. The agency responsible for the U-2, SR-71, and CORONA reconnaissance programs no longer drove technological innovation to the degree it did during the height of the Cold War (BENS, 2001; Yannuzzi, 2000). Those familiar with the CIA's technology requirements and the In-Q-Tel model explain that the CIA's diminishing influence in the world of IT was not helped by the fact that the CIA continued to look to their traditional contractors to fill their IT requirements. In the opinion of former CIA Deputy Directory of Science and Technology, Ruth David, these contractors were not necessarily the right fit to meet the Agency's IT needs (Laurent, 2002). Furthermore, many small companies concerned about maintaining their intellectual property rights and not having the staff available to deal with onerous federal acquisition policies, opted not to deal with the federal government as a customer (Laurent, 2002; Sorett & Campos, 2003).

Understanding the importance of IT in intelligence operations and the problems facing the CIA, Director of Central Intelligence (DCI), George Tenet, consulted with leaders in industry and defense about how to bridge the gap between agency IT needs and the availability of commercial IT solutions. The effort, led by former Lockheed Martin CEO, Norman Augustine, resulted in the creation of In-Q-Tel (BENS, 2001). In February 1999, In-Q-Tel incorporated in the state of Delaware as a privately-held enterprise whose sole customer is the CIA; its mission is to "identify and invest in companies developing cutting-edge IT that serves U.S. national security interests (In-Q-Tel, 2004).

In 2001, Business Executives for National Security (BENS), a group of business executives from a broad range of industries that advise government national security leaders on business, convened a panel of 30 members representing industries spanning technology, venture capital, investment banking, and law to report their assessment of the CIA's In-Q-Tel venture (BENS, 2001). As the BENS report is the most comprehensive and authoritative assessment of In-Q-Tel to date, this section draws mostly from their findings as well as from interviews and testimony of key CIA and In-Q-Tel leaders to present an overview of how In-Q-Tel is organized and how it operates to meet its objectives for the CIA.

In the case of the CIA, its interest in In-Q-Tel was to "provide the CIA and the IC [Intelligence Community] with effective reach into the cutting-edge creativity of America's private sector" (DCI, 2003). This aim is consistent with the corporate "technology window" objective described earlier. A premise behind the In-Q-Tel model is that IT solutions commonly have lifespans as short as 18 months from when a

technology is commercialized to when it reaches obsolescence. The CIA could not afford to wait until technologies became available on the commercial market to identify the product, procure it, and implement it into the Agency for its intended use. Because of the cycle-time needed for a typical government acquisition, the technology became obsolete before its full potential was ever realized (Louie, 2002).

To overcome the hurdles of the federal acquisition system, the CIA sought a way to identify new technologies before they became commercialized so that once a technology became available for use, the agency could quickly incorporate it into its arsenal of technology solutions. As an active investor with ties to the IT market and other investors, In-Q-Tel has the ability to identify a new technology early in the product lifecycle. Early identification of technologies allows the Agency to position itself to procure new IT solutions as soon as they become available thus extending the product's useful life (Louie, 2002). Former CIA general counsel and current In-Q-Tel counsel, Jeffery Smith, tells Government Executive magazine that the board understood that "if the CIA could be involved at the beginning as the technology was being developed for commercial applications, the company could be modifying it so that it would be useful to both industry and the CIA. As soon as it hit the market, the CIA could buy it, and use it, and be as current as anybody in the world" (Laurent, 2002:38).

In the early stages product development, firms seek strategic help and financing in order to bring a new product to market. For technologies that fall within the Agency's interest, In-Q-Tel will enter into a strategic relationship (i.e., one that involves equity investing, product development funding, or warrants) often before the development cycle concludes its first year (Pepus, 2003).

The Q-Process

One problem associated with the relationship between a corporate venture capital fund and its parent corporation is the difficulty communicating strategic intent, referred to as the "opaque technology window" (Hardymon et al., 1983:118). While venture fund managers often have vast knowledge of the ventures in the respective industries in which they operate, they may not understand how those firms and their technologies translate into the corporation's strategic interests. If corporate venture capital models have problems communicating strategic intent, the CIA, an agency shrouded in secrecy, clearly has obstacles to overcome communicating requirements to In-Q-Tel. This section discusses how the Agency interfaces with In-Q-Tel so that its investments produce the right solutions to the Agency's IT problems, without compromising the sensitive nature of its eventual applications.

When the Agency began its relationship with In-Q-Tel, many within the Agency were not receptive to the idea. Some did not understand In-Q-Tel's capabilities and how the existence of a venture capital firm could relate to their respective directorate. Others viewed In-Q-Tel as a competitor that would drain their own budgets, because offices had to contribute their own resources to fund In-Q-Tel in the early years (BENS, 2001).

To help overcome organizational resistance and to facilitate communication, the Agency created the In-Q-Tel Interface Center (QIC), a group of 13 senior CIA staffers that report to the Chief Information Officer (CIO) (Molzahn, 2003). The QIC (pronounced "quick") links the Agency and In-Q-Tel "to ensure identification, development, transition, and acceptance of unique, value-added, commercially-viable IT solutions that address the CIA's critical needs" (BENS, 2001). Involving senior members

of the CIA and staying in tune with CIA operations and requirements, the QIC was designed to bring credibility to the relationship between the Agency and In-Q-Tel. The QIC performs the following activities (BENS, 2001):

- Managing the CIA's business and contractual relationships with In-Q-Tel to include performance measurement
- Protecting the sensitive nature of CIA requirements
- Defining the CIA's classified requirements into an unclassified "Problem Set"
- Facilitating the transfer of technology resulting from In-Q-Tel activities back into the CIA
- Serving as an In-Q-Tel advocate by promoting In-Q-Tel capabilities to the rest of the IC

To carry out their responsibilities, the QIC employs an eight-step process referred to as the "Q-Process" that takes a requirement and transforms it into an IT solution. The following figure depicts the eight steps involved in the transformation.

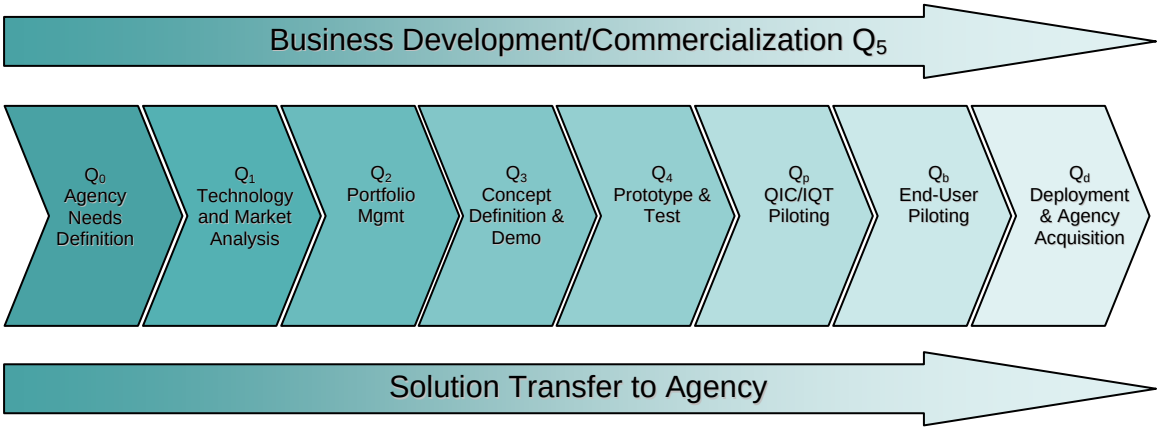

Figure 1. In-Q-Tel's "Q Process" (BENS, 2001:A-1)

Q_0: Agency Needs Definition

In the first step of the Q-Process, the Agency defines the areas in which it has an interest. First, the QIC surveys technology users across the Agency to find common requirements areas that fall within the Agency's strategic interests. The QIC then removes requirements that cannot be declassified and constructs a requirement that provides enough specificity for In-Q-Tel to pursue and organize the requirements into problem sets. The QIC, the agency's Advanced Information Technology Office, and CIO then prioritize the problem sets and devise "use scenarios," which gives hypothetical situations for how a resulting technology could be used to solve a problem. After this group creates a draft of problem sets, In-Q-Tel reviews the list to determine whether each problem set is technically feasible. Then the Agency's Executive Board approves the problem sets which are incorporated into the contract between the Agency and In-Q-Tel (BENS, 2001).

The current problem sets used by In-Q-Tel are: knowledge management, search and discovery, security and privacy, distributed data collection, and geospatial technology:

- Knowledge Management: The CIA, like most large organization, has large amounts of electronic data, often in multiple formats, stored in databases. Though these databases may contain information useful to the IC, it is difficult to sort and analyze raw information to produce useful information. Knowledge management refers to technologies that can search through data repositories and derive knowledge or insights by organizing and presenting relevant information to the user (In-Q-Tel, 2004).

- Search and Discovery: Internet traffic has increased at phenomenal rates and covers all languages, geographical locations and content. Search and discovery refers to "tools which contains powerful crawling, indexing and ranking capabilities to help users systemically and intelligently harvest relevant information" (In-Q-Tel, 2004).
- Security and Privacy: Cyber-arracks to computer networks occur regularly, but the reliance on the information contained in those networks is increasingly more important to an organization. Probably more than most organizations, the IC has a pressing need to protect its computer networks from outside attack. Security and privacy refers to maintaining the privacy of Internet users and establishing security protocols for an entire organization (In-Q-Tel, 2004).
- Distributed Data Collection refers to "tools used for the rapid deployment of distributed, economical data collection networks. These sensor networks provide rapid insights and alerts via machine-to-machine communication, reducing the need for human monitoring and intervention" (In-Q-Tel, 2004).
- Geospatial Technology refers to "fusing multiple data sources—maps, imagery, databases, location information and text—into a coherent picture. Geospatial information can be delivered over a variety of devices, from desktop workstations to wireless handhelds" (In-Q-Tel, 2004).

Q_1: Technology and Market Analysis

After In-Q-Tel receives the problem set from which it will work, they begin to identify solutions. Typically, companies that believe they have a technology to offer that falls under the description of a problem set category submit electronically through the In-

Q-Tel website a “white paper” explaining their technology solution. In-Q-Tel receives the majority of its leads on new technologies through companies’ direct proposals, but it does learn of new opportunities through other venture capital groups or government/industry leaders. In some cases, offices within the IC refer leads to In-Q-Tel about companies working on other IC projects if they believe that the offer a technology that may fit a particular problem set. Since 1999, In-Q-Tel has reviewed almost 2,000 business proposals and has entered into relationships with more than 20 companies (In-Q-Tel, 2004). Moreover, they network with 150 other venture capital groups in order to increase their deal flow of new technologies in which they could invest (Louie, 2002)

Once In-Q-Tel receives a proposal it undergoes a thorough vetting process. The first hurdle a new proposal must clear is to prove that it offers a solution to a problem set. If a proposal appears to offer an acceptable solution, In-Q-Tel will then assign a panel to assess three main aspects of the proposal: 1) the uniqueness of the technology, 2) the economic viability, and 3) whether or not there is a customer within the IC who may have an interest in the technology (Pepus, 2003).

The uniqueness of a technology and its feasibility for Agency requirements are important considerations that In-Q-Tel must evaluate before proceeding with an investment. In-Q-Tel looks to see whether other companies or technologies currently exist that perform the same function as that being proposed. For obvious reasons, if other companies have or are in the process of producing similar solutions, then investing in that particular firm would offer no additional value towards solving the Agency’s problem set, and the opportunity cost of investing in that firm would keep In-Q-Tel from serving other Agency needs (Pepus, 2003).

Any technology in which In-Q-Tel invests must be feasible. Though In-Q-Tel does not view itself as risk-adverse, it does not pursue the high-risk, high-reward opportunities that other venture capital groups do. A feasible technology is usually innovative, but usually does not fall into the conceptual but unproven technology category, which typically enter the realm of DARPA. Furthermore, a company in which In-Q-Tel invests must not only have a product that is useful to the Agency, but it must also have commercial utility. Without a commercial audience for the technology, In-Q-Tel will not consider an investment, regardless of how useful the technology would be for the Agency. Other federal acquisition methods exist to pursue those types of technologies (Pepus, 2003).

A second facet of any investment that In-Q-Tel reviews is the financial viability of the company proposing the technology. In-Q-Tel's position is that a company must be able to function financially in the short-term. If not, In-Q-Tel will pass on the investment (Pepus, 2003). One reason for this, and one of the ways in which In-Q-Tel differs from more traditional venture capital groups, is that the goal behind all investments is that it will result in a new technology. Though a commercial success is the goal of all investments, the Agency believes that there is still something to be gained if investment amounts to only a feasibility assessment or a prototype. But if the firm is not financially viable, then it increases the chance that the investment will yield nothing, and that is a result the CIA wishes to avoid (BENS, 2001).

The third aspect of any proposal that In-Q-Tel evaluates is whether or not a customer exists for the technology within the IC. If a promising proposal comes to In-Q-Tel that meets the other criteria, but In-Q-Tel cannot find a customer who has an interest

in buying into the technology after it is developed, In-Q-Tel will pass on the investment. In fact, many proposals come into In-Q-Tel that may have a promising commercial application, but because In-Q-Tel cannot identify an end-user within the IC, they do not commit to an investment (Pepus, 2003).

Q_2: Portfolio Management

Positioning itself to maximize its exposure to new investment opportunities and investing along side other successful venture capitalists are important factors that contribute to the overall success of a venture capital program (Winters & Murfin, 1988). As an investor in the IT market, In-Q-Tel maintains close ties with the industry and other venture capitalists in order to maximize their exposure to deal flow (Louie, 2002).

The CIA funds In-Q-Tel with approximately $35 million per year. Typical deals involve equity investing, product development funding, and warrants, but In-Q-Tel takes steps to maximize the probability an investment will succeed. In-Q-Tel reduces the risk associated with its portfolio and increases the value of its investments by partnering with other accomplished venture capital groups and leveraging its funds with other investors. For example, In-Q-Tel invests alongside corporations such as Ford, Nokia, and Motorola and venture capital groups such as Kleiner Perkins Caufield & Byers, Merrill Lynch, and Shell Ventures. In-Q-Tel estimates that for every dollar it invests in its portfolio of companies, other venture investors have contributed 2 to 20 times as many dollars into these businesses. The result is that $300 million in third-party venture capital backs the firms in which In-Q-Tel invests. Leveraging its capital provides considerably more value than if In-Q-Tel were to invest the Agency's funds alone (Louie, 2002).

In-Q-Tel provides assistance other than financial support designed to bring strategic advantage to its portfolio companies. In-Q-Tel offers its portfolio companies hands-on technical, management, and administrative services. They maintain an in-house technical team that works with portfolio companies to help facilitate the transition of technologies into the IC and the commercial market (Louie, 2002). Their financial and venture staff can also help companies setup appropriate account systems and financial controls, and they will advise them on financing opportunities both in the debt and venture areas. Additionally, In-Q-Tel will work with other venture capitalists to help companies raise additional capital or help them partner with other companies. These services are offered to their portfolio companies to give them the best chance to grow (Louie, 2002; Pepus, 2003). Another service that In-Q-Tel provides is helping portfolio companies identify and hire key personnel that will help the company succeed such as technical, management, marketing, financial, and human resource staff. Finally, strategy and communications staff will help companies develop marketing and communications plans (Pepus, 2003).

Q_3: Concept Definition and Demonstration

During the third step of the Q-Process, In-Q-Tel and the QIC analyze the technology to ensure it meets its intended capabilities. If the technology does not appear to hold the same promise as originally expected, this step was designed to keep In-Q-Tel from investing more money into a poor prospect (BENS, 2002). The QIC keeps close contact with directorates within the Agency to inform users and stakeholders of developing technologies that may serve their functions well. Moreover, they actively seek input from potential users so that these products could be tailored early in the development

process and increase the chance that products would solve Agency problems (Molzahn, 2003).

Q_4: Prototype and Test

During this stage, In-Q-Tel and the QIC develop a testing protocol to measure how well technology prototypes hold up to hypothetical scenarios. These scenarios are unclassified and serve to show that the technology will meet its intended use within the IC (BENS, 2001). Additionally, this stage helps with commercial marketing. Some see the CIA using a product as a key endorsement of the technology and a huge selling point to commercial and government markets.

The Agency has improved its ability to evaluate new technologies by creating a pilot program to test new solutions. The Agency promotes new technologies within by funding the testing by potential users. This encourages internal groups to attempt new solutions without having to use their own budgets to do so. If at the end of the pilot period the Agency determines that the technology was successful, they can pursue a contract to purchase it (Molzahn, 2003). The benefit of this approach is that the Agency would have already decided how best to implement the new technology as a solution, and the steepest part of the learning curve would have been climbed by the time the Agency proceeded with the acquisition.

Q_5: Commercialization

As stated previously, In-Q-Tel will not invest in a company if there is no commercial utility for its technology. The larger market for a commercial product will help keep unit costs lower than if the product was designed specifically for CIA use. Commercialization is a priority throughout the process, but this step formally recognizes

the fact that applications sometimes deviate from their intended purpose. It is necessary to keep the program on track and to check that commercial utility still exists (BENS, 2001).

Q_d: Deployment and Agency Acquisition

The last step in the Q-Process is transferring the commercial technology back into the Agency. The CIA's acquisition system handles the procurement of resulting technologies, and all acquisitions go through the normal process. The BENS panel found, however, that insertion of new technologies did not happen as efficiently as the Agency had hoped once the products became available commercially (BENS, 2001). To streamline the implementation of technology, the Agency directed the QIC to become more proactive in marketing new solutions to the IC.

In-Q-Tel's Strategic Direction in Relation to the Literature

A previous section discussed the determinants of success commonly attributed to corporate venture capital programs: strategic fit, program management, involvement with entrepreneurs, and return on investment. This section presents findings from the literature that relate to how the In-Q-Tel model, as designed, aligns with the success factors attributed to corporate venture capital programs.

Aligning In-Q-Tel to the CIA Strategic Interests

The CIA has chosen to use the QIC to align its strategic interests with In-Q-Tel's investment activities. QIC members represent a mix of functions and expertise across the Agency; the 13-member team has members with backgrounds in science and technology, government, and knowledge of CIA operations. Recently, the Agency realigned its IT under a Chief Information Officer to which the QIC now reports. This gives the group

more clout to break down barriers and promote In-Q-Tel capabilities within the IC (Molzahn, 2003).

Program Management

The CIA appears to understand that the In-Q-Tel relationship is a long-term solution and is committed to allowing the model to grow and develop. In its annual report, the CIA emphasizes that IT is at the core of intelligence transformation, and In-Q-Tel is a model of innovation that enables the Agency to access cutting-edge technologies (DCI, 2003).

In-Q-Tel's board sought a CEO that could make the concept work. They chose Gilman Louie, then the Chief of Online Projects at Hasbro. As an entrepreneur, Louie introduced Tetris to the United States and created an F-16 flight simulator game. The board believed that Louie had the credentials (entrepreneurial experience, access to Silicon Valley venture capitalists, and a deep grasp of IT) to lead the CIA's venturing organization (Laurent, 2002).

Involvement with Entrepreneurs and Venture Capital Community

One of In-Q-Tel's stated core activities is "reaching out to the technology community" (Louie, 2002). In-Q-Tel has developed relationships with leading Silicon Valley venture groups. For example, Kleiner Perkins, affiliated with well known start-ups such as AOL, Amazon, Genentech, and Sun, has invested alongside In-Q-Tel on three occasions (Marshall, 2002).

Return on Investment (Technology)

The CIA's primary objective for In-Q-Tel is not return on investment, but rather, return on technology. In-Q-Tel measures its success based on three factors (Louie, 2002):

- Delivering value to the Agency by harvesting successful technologies
- Building strong portfolio companies that will continue to deliver innovative solutions
- Creating financial returns that will allow the Agency to continue to invest in new technologies.

Getting feedback from the CIA about specific successes is not easy, but Louie (2002) reported to Congress that as of May 2002, In-Q-Tel had relationships with more than 20 technology companies. Of those investments, it has introduced 19 technology pilots into the CIA and 6 technology demonstrations, which the Agency maintains have produced promising results. Moreover, In-Q-Tel has identified 17 other technologies in which they did not invest for various reasons, but they have referred these technologies to the Agency to pursue through different contracting vehicles, yet another example of the value In-Q-Tel provides the Agency in its search for IT solutions.

Summary

This chapter described the various organizations responsible for technological innovation in the DoD and offered an explanation as to how corporations promote innovation. The discussion proceeded to address the role of venture capital and how corporations have used venture capital programs to supplement their own research and

development requirements. Finally, this chapter concluded with a description of the CIA's venture capital model, In-Q-Tel, describing its role in promoting technological innovation for the IC.

III. Methodology

Research Objectives

This thesis explores the viability of a government-backed venture capital fund to promote the introduction of new commercial technologies into sponsoring government agencies. This study relies on data gathered from interviews with 13 executive managers representing 13 companies from In-Q-Tel's investment portfolio to answer these questions: 1) Has the In-Q-Tel model created new business relationships between the IC and technology companies that would not have existed otherwise? 2) What services does the In-Q-Tel model offer its portfolio companies that promote their growth and development, and what value do portfolio companies place on In-Q-Tel contributions?

Research Design

Research Strategy

Investigators should consider three conditions when developing a research strategy: "1) the type of research question posed; 2) the extent of control an investigator has over actual behavioral events; and 3) the degree of focus on contemporary as opposed to historical events" (Yin, 2003:5). How an investigator addresses these conditions will help determine the appropriate research strategy. In the case of the first condition, the type of research question posed, this study explores how a government-backed venture capital fund can promote the introduction of new commercial technologies into sponsoring government agencies. In that respect, the nature of the research question can be categorized as exploratory and explanatory. It is exploratory in that the intent of this

research is to identify specific activities or events that affect the relationship between a government-backed venture capital fund and its portfolio companies and those companies' success. It is explanatory in that the findings are intended to promote an understanding of "how" and "why" specific activities or events affect that relationship and success of the model. According to Yin (2003), a number of research strategies can achieve the exploratory aspect, but a case study is well-suited for determining the "how" and "why." As for the second and third conditions, the intent of this study is not to control or manipulate the events being studied as in an experiment, but rather to understand the activities as they occurred in their natural environment. And as In-Q-Tel is a relatively new organization, the degree of focus is on contemporary events. For these reasons, the case study research strategy was chosen for this effort.

Case Study Design

Yin (2003) describes four categories of case study research. Two categories involve the number of cases that comprise a study, single case designs and multiple case designs. Two variants of these designs apply to how the cases are analyzed, either holistically or with multiple units of analysis. All are valid designs, but circumstances surrounding the cases and the research strategy will determine the appropriate design. Figure 2 illustrates the four case study categories.

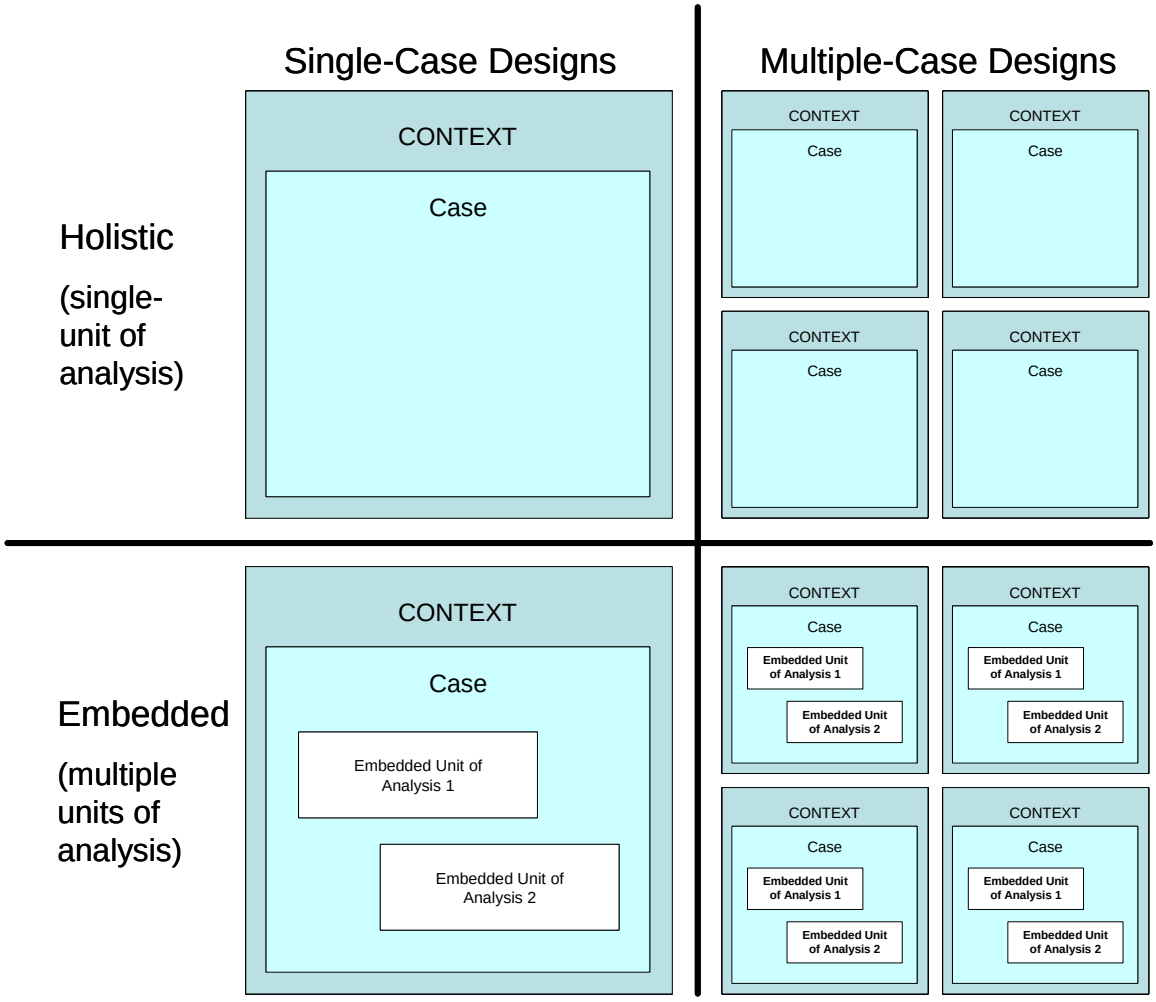

Figure 2. Basic Types of Designs for Case Studies (Yin, 2003:40)

Single Case Design

The design chosen for this research is a single-case design with embedded units of analysis. While multiple case study designs offer an advantage of having several units from which to draw data, single case study designs are appropriate on five occasions. First, the rationale for a single case may be used when testing a well-established theory that many believe to be true. If the case meets the necessary conditions to test the theory, then the findings can then be used to support or challenge its premise. Second, if a case is an extreme or unique situation, often found in clinical settings, then the results of a

single case study can offer previously unavailable knowledge important to a field of study. A third rationale for single a case is when the case selected is fairly typical and representative of others in the population. For example, the findings from a single case study of a major college football program could be applied to major college football programs in general. The fourth rationale for a single case study is to explore areas that have received little or no scientific research, a "revelatory" case. Finally, the fifth rationale is when the study is longitudinal, in that the study would focus on the same case at two separate points in time to report on the changes that occur (Yin 2003).

The fourth rationale, the revelatory case, applies to this study. Though the In-Q-Tel model has received attention in the media and by government policy makers, no objective study has explored whether it has effectively reached out to innovative businesses to bring technologies previously unknown or unobtainable into the IC. Furthermore, no study has addressed whether the In-Q-Tel model can affect the growth and development of these companies for long-term relationships with the CIA. These activities are key objectives of In-Q-Tel's strategic plan (Louie, 2002), and an impartial analysis and the lessons learned from this model as it relates to these activities could aid senior defense officials in a decision to pursue similar models for the DoD. Though other government-backed venture capital funds exist from which cases could have been drawn for this study, for example, the National Imagery and Mapping Agency's relationship with Rosettex and the U.S. Army's affiliation with OnPoint Technologies, the relative longevity of In-Q-Tel compared to other models combined with the amount of available information on the activities of In-Q-Tel and their portfolio companies support the decision to choose In-Q-Tel as the single case for this study.

Embedded Units of Analysis

The embedded units of analysis for this case are the companies that comprise In-Q-Tel's investment portfolio. In-Q-Tel publicly lists 21 companies in which they have an equity investment. They also have equity investments in 8 companies that have not been announced, primarily because these companies have expressed a desire to keep their relationship with In-Q-Tel anonymous at this time. Since its inception in 1999, In-Q-Tel has dropped three companies from its portfolio that have gone out of business (von Eckartsberg, 2004).

All 21 of the publicly listed portfolio companies were targeted for this research. Email requests were sent to a member of each company's executive management team requesting an interview to discuss their company's involvement with the federal government and their company's relationship with In-Q-Tel. 13 companies agreed to participate, 1 company declined, the data from 1 interview was unusable, because the respondent did not hold a position that offered a strategic viewpoint, and 6 companies did not reply after several attempts to schedule an interview.

Data Sources

Data for this study came from three sources: In-Q-Tel, In-Q-Tel's portfolio companies, and secondary sources. This section provides an overview for how data was obtained from each source.

In-Q-Tel

In-Q-Tel agreed to facilitate this study and assisted with introductions to members of its portfolio. Though In-Q-Tel's relationship with the CIA is public, many of their interactions with the IC are sensitive by nature. To avoid accidental disclosure of information that could have compromised security, the majority of data on In-Q-Tel came from their public website. When additional information was needed or questions arose that required clarification, In-Q-Tel's Director of Federal and IC Strategy and their Vice President for Strategy and Communications offered important assistance. In-Q-Tel also shared contact information of their portfolio companies' key leaders so as to bypass the usual public relations channels and give the interview requests greater credibility.

In-Q-Tel Portfolio Companies

Executive leaders from 13 companies that comprise In-Q-Tel's investment portfolio agreed to participate in this study. The interviews consisted of 12 questions; some questions required yes or no responses, while open-ended questions involved greater discussion. Additionally, supplemental questions supported the 12 primary questions, if warranted. All interviews were conducted telephonically and recorded for later transcription. Interviews ranged from 25 minutes to an hour, and took place between November 2003 and January 2004.

The positions of those interviewed included titles such as Chief Technology Officer, Vice President for Marketing, Chief Scientist, Founder, and Chief Executive Officer, and all individuals had strategic roles in their company and first-hand involvement with In-Q-Tel. Subjects gave their consent to have the interview recorded, but to ensure anonymity, personal or professional data to include personal names,

company names, product/technology information, or anything that might have identified a respondent or company were deleted from the transcripts prior to data analysis and not reported in this study. Data excluded form the transcripts did not impede analysis.

Secondary Data

Company websites and press releases were reviewed prior to each interview. Information gathered from these sources was used to help facilitate discussions and sometimes triggered supplemental questions when appropriate. Furthermore, literature related to venture capital programs and their activities acted as a baseline to strengthen validity.

Research Protocol

After establishing the purpose of this research, the next step was to develop a protocol. The case study protocol is essential as it guides the researcher in data collection and enhances the overall reliability of the effort. A good protocol provides an overview of the project, the procedures used to access the cases to be studied, questions to be posed, and a plan for analyzing the data and presenting the findings. Of these protocol characteristics, the "heart" of the investigative effort lies with the questions (Yin, 2003).

As to the "general orientation of questions," Yin (2003:74) states that case study questions should be aimed at the investigator and not the interviewee. He conjectures that the interview questions should serve as a reminder to the investigator of the purpose behind the study and be crafted with that purpose in mind. Furthermore, questions that investigators pose should have a foundation in other sources, which could be published literature, observations, or other interviews.

Interview Questions

The previous sections have addressed the overview of this study and how the data sources were identified and the data collected. This section focuses on the interview design and the justification for the questions posed. As stated earlier, the intent of this study is understand the "how" and "why" of the findings. Recording the perspectives and experiences of those with first-hand knowledge of In-Q-Tel contributions, In-Q-Tel's portfolio companies, brings credibility to the results of this study. To give these individuals every opportunity to share their knowledge, an open-ended interview was crafted to serve as a means to produce the data for this study.

The interview protocol was organized into three categories: perceptions of government as a customer, the role of In-Q-Tel as a venture capitalist, and an examination of the value In-Q-Tel brings to small technology companies. The rationale for these questions was based on literature related to corporate venture capital programs as well as In-Q-Tel's self-stated goals and activities.

Perceptions of Government as a Customer

The first category attempted to determine how small technology companies that make up In-Q-Tel's portfolio perceive the federal government as a customer.

The questions posed to senior managers are as follows:

Q.1) Prior to your company's relationship with In-Q-Tel, did your company consider the federal government as a potential customer?

Q.2) Prior to your company's relationship with In-Q-Tel, had your company entered into a contractual agreement with the federal government to sell a product or service?

Q.3) Did your company have concerns about entering into a contractual relationship with the federal government?

Q.4) Does your company have a contract in place with the federal government to sell your product or service? If so, what is your opinion of the contracting process?

Q.5) Based on your experience with the federal government to date, will your company pursue contacts with the federal government in the future?

The Role of In-Q-Tel as Venture Capitalist

The second category examines the contributions In-Q-Tel has made to its portfolio companies. Several activities In-Q-Tel performs include reaching out to the technology community, negotiating strategic relationships, nurturing portfolio companies, and transferring technologies to the IC (Louie, 2002). Many of these activities are similar to the activities performed by other venture capital groups and are considered important to a successful venture capital program. The questions posed to senior managers include:

Q.6) How did your relationship with In-Q-Tel come to be? Did you seek them out, did they find you, or did others bring you together?

Q.7) Could you describe the evaluation process your company underwent before entering into a relationship with In-Q-Tel? For example, how would you characterize the due diligence applied by In-Q-Tel to your company's technology offering, management team, and financial health?

Q.8) Does your company have a clear understanding about how your technology fits the needs of the IC? Has In-Q-Tel actively communicated IC technical requirements to your company either directly or by facilitating communication between your company and the IC?

Q.9) Has your relationship with In-Q-Tel affected how your company has developed or marketed its product offerings? If so, in what ways?

Q.10) Has your relationship with In-Q-Tel helped your company develop networking opportunities with other investors or companies? Have these networking relationships resulted in additional investments, technical assistance, or new market opportunities for your company? Do you consider these relationships valuable to your company's success?

The Value of In-Q-Tel Contributions

The final category explored addressed the value portfolio company's place on In-Q-Tel's contributions and services. The questions included in this section are:

Q.11) What do you consider to be In-Q-Tel's most important contributions to your company? What contributions have added the least value or detracted from your company? How does In-Q-Tel compare to others venture capitalists with respect to these contributions?

Q.12) Since engaging with In-Q-Tel, do you believe your company's outlook to be stronger, weaker, or about the same? Can you attribute In-Q-Tel contributions to your company's outlook?

All interviews ended with the question, "What is important that we did not discuss?" The purpose behind this question was to offer the subject an opportunity to express any thoughts he or she deemed relevant to the conversation.

Data Analysis

For the data analysis, telephone interviews were transcribed and organized to identify patterns among the respondents. This data analysis technique is referred to as pattern-matching. Yin (2003) describes pattern-matching as a desirable case study analysis technique that compares the study's results with a predicted outcome. To strengthen the validity of pattern-matching analysis, the predicted outcomes should be defined prior to data collection.

The predicted outcomes for this study were derived after a thorough review of the extant literature as it relates to each investigative question. A brief review of the

applicable literature precedes the data analysis as related to each investigative question in Chapter 4.

Summary

This chapter described the objective of this study and justified the research strategy employed. It explained the design and the justification for selecting the single case study with embedded units of analysis. This chapter proceeded into a discussion of the interview questions posed to the In-Q-Tel portfolio companies and validated their inclusion with references to extant literature. Finally, this chapter concluded with a description of the data analysis techniques used to evaluate the data. The results of this analysis are the topic of Chapter 4.

IV. Data Analysis

The purpose of this chapter is to report the data collected for this research as it relates to the 13 firms studied. This thesis explores the viability of a government-backed venture capital fund to promote the introduction of new commercial technologies into sponsoring government agencies, the lessons from which could aid senior defense officials in the creation of similar models for the Department of Defense (DoD). This chapter analyzes the collected data to provide to address two research questions: 1) Has the In-Q-Tel model created new business relationships between the IC and technology companies that would not have existed otherwise? 2) What services does the In-Q-Tel model offer its portfolio companies that promote their growth and development, and what value do portfolio companies place on In-Q-Tel contributions?

The chapter is structured as follows. A discussion of each research question begins with a review of supporting literature. After establishing the foundation for each investigative question in the extant literature, the discussion proceeds to an explanation of the data derived from a pattern-matching analysis.

Question 1

Has the In-Q-Tel model created new business relationships between the IC and technology companies that would not have existed otherwise?

Supporting Literature

The first section deals with how small technology companies that make up In-Q-Tel's portfolio perceive the federal government as a customer. The premise behind Question 1 is that the IC is not tapping the technologies produced by innovative companies. Literature is replete with observations by government and industry leaders who believe that the federal government cannot access the technologies it needs because the companies producing these technologies do not consider the government as a customer. Some of those reasons include differences in culture (Sorett & Campos, 2003), distrust of the government and its bureaucracy (Laurent, 2003; Held et al., 2002) and the belief that the government will not commit to long-term relationships (Lewis & Holzer, 2002). A foundation of the In-Q-Tel model is that it serves to bridge the gap between the federal government and the innovation taking place in the commercial sector by identifying new and relevant technologies and investing the appropriate capital to develop these firms and their technologies.

Findings

Table 1 summarizes the data as they relate to the companies that comprise In-Q-Tel's investment portfolio and these companies' perceptions of the federal government as a customer. Table 2 depicts presents common responses given by these companies' senior executives. I assessed these views based on data collected from interviews with an executive leader from each company. Based on pattern-matching analysis of these data, I

identified three distinct categories of companies that make up In-Q-Tel's portfolio. These categories are titled Red Companies, Yellow Companies, and Green Companies. Red companies are companies that had not previously identified or actively pursued the federal market prior to their relationship with In-Q-Tel (Companies 3, 5, 12, and 13.) Yellow companies are companies that did consider the federal government to be a viable market but had yet to make a sale and/or had significant concerns about contracting with the federal government prior to their relationship with In-Q-Tel (Companies 2, 4, 6, and 7.) Green companies are companies that actively pursued the federal market, had federal contracts or schedules in place prior to their involvement with In-Q-Tel and had no significant concerns about contracting with the federal government (Companies 1, 8, 9, 10, and 11.)

Table 1. Perceptions of Government as a Customer

	Q.1) Did your company consider the government as a potential customer prior to your relationship with In-Q-Tel?	**Q.2) Had your company entered into a contractual agreement with the government to sell a product or service prior to your relationship with In-Q-Tel?**	**Q.3) Did your company have concerns about contracting with the government?**	**Q.4) Based on your experience to date, will your company pursue contacts with the government in the future?**
Company 1	"Yes"		No	"Absolutely"
Company 2	"Definitely"	"Yes"	"Definitely"	Yes
Company 3	"Not seriously"	No	Yes	"Yeah, we certainly would now."
Company 4	"Yes"	No, but "we think it would have been inevitable."	Yes	"Yes, absolutely"
Company 5	"Not in a serious or focused way and not as an initial priority"	No	"We did"	"Absolutely"
Company 6	"Yes"	No	"No"	"Absolutely"
Company 7	"Yes"	Yes	"Yes"	Yes[1]
Company 8	Yes	"Yes"	No	"Yes"
Company 9	"Yes"	"Yes"	No	"Absolutely"

[1] The respondent's actual response was, "it depends" the rationale being the project must be profitable to the company. My assumption for this question is that no company would pursue a project that did not offer the potential to make a profit, so in that context, the answer is yes.

	Q.1) Did your company consider the government as a potential customer prior to your relationship with In-Q-Tel?	**Q.2) Had your company entered into a contractual agreement with the government to sell a product or service prior to your relationship with In-Q-Tel?**	**Q.3) Did your company have concerns about contracting with the government?**	**Q.4) Based on your experience to date, will your company pursue contacts with the government in the future?**
Company 10	"Yes, absolutely"	Yes	"No"	"Absolutely"
Company 11	"Absolutely"	"Yes"	No	"Absolutely"
Company 12	"We thought about it, but not a significant part of our business"	"No we didn't"	Yes	Yes
Company 13	"I considered it"	"No"	"Not really"	"Yes, certainly"

Table 2. Respondent Observations Regarding Government as a Customer

	Red Companies				Yellow Companies				Green Companies				
	Company 3	Company 5	Company 12	Company 13	Company 2	Company 4	Company 6	Company 7	Company 1	Company 8	Company 9	Company 10	Company 11
Government market is difficult to access	✓	✓		✓			✓				✓		
Our company lacked key personnel with government sales experience	✓	✓	✓		✓[†]	✓	✓	✓[‡]					
Protecting our IP was a significant priority	✓		✓		✓		✓						
Government market is slow-moving, bureaucratic, and/or inconsistent			✓	✓	✓	✓		✓			✓		

[†] Not attributed to a direct statement by the respondent, but the company's background and responses to other interview questions support this conclusion.
[‡] Not attributed to a direct statement by the respondent, but the company's background and responses to other interview questions support this conclusion.

Red Companies

Of the 13 companies participating in this study, I identified four (Companies 3, 5, 12, and 13) as fitting the description of a red company. Though red companies did not actively engage with the federal market before their involvement with In-Q-Tel, they did not necessarily reject the federal market either. Traits associated with red companies are: the lack of key personnel with government experience; beliefs that the bureaucracy they need to overcome in order to deal with the government market makes the market as a whole unattractive; and the size of their companies hinder their ability to make inroads into federal markets. While these companies did not initially consider capturing government business as a major part of their strategy, all believed their technologies could fit government applications.

Company 3 typifies a company that government would have had difficulty accessing through the usual acquisition channels. Located far from the nation's capital region, Company 3 did not view the federal market as a feasible opportunity. They believed that their technology could be useful to the government, but they did not understand the federal market or know how to approach it. Furthermore, others had advised them to be cautious of the government contracting process, saying that it could potentially compromise their intellectual property (IP) rights. Because they lacked personnel with experience selling to the government, and they believed that their small size would make it difficult to compete with more established government contractors, Company 3 decided to focus instead on the commercial sector. Their co-founder observed, "Government is just a different animal, and your commercial experience might not be all that helpful to you [when pursuing the federal market.]"

Company 12 also had concerns about dealing directly with the federal government, though they reached that market indirectly and in a limited way by working through defense contractors that performed systems integrator roles for the government. Company 12 shared characteristics with Company 6, in that they had no in-house government sales experience, and they did not have the internal marketing and contract management capacity to target the government market.

To illustrate how perceptions of the government being a difficult customer can form, the executive leader from Company 6 told of a deal with a major defense contractor where they were presented with a "100-page contract from [company deleted] that was full of these sensitive IP terms." That particular deal required them to hire outside legal counsel – a substantial cost for a small company – to help them move through the process and ensure that they preserved their IP rights. This deal was unlike any that they had closed with their commercial customers, and while their contract was issued by the systems integrator, not government, Company 12 (rightly or wrongly) associated the process with an overly-bureaucratic federal procurement system. The whole experience left them discouraged and reinforced their opinion that the government market was difficult and costly to engage.

Whereas Companies 3 and 13 cited little or no experience as a reason for not pursuing the government market, Company 5 had a wealth of knowledge pertaining to the government and still chose not to target that sector. The founder of Company 13 had been a program manager within the DoD and had spent several years employed by companies that did significant government business. While this executive leader understood the government acquisition system and had no concerns about the process, he

remarked that as a small company, their opportunities for success would probably rest in markets other than the government.

Company 13's executive leader gave several reasons for not targeting the government initially. First, they believed that working with the federal government was too time consuming. Second, they thought that it was difficult to find the right agency with the right requirement at the right time. And finally, they noted that government tends not to adopt new technologies early, particularly unproven technologies originating from small companies. This company claimed that these hurdles are difficult for small companies to overcome.

Company 5, the fourth red company, did not rule out government as a customer, but they did not make them a priority either. Their executive leader explained that they arranged an introductory meeting with the CIA's Chief Information Officer to discuss their technology offering and to probe for interest within the IC, but the meeting ultimately led nowhere, and the company did not pursue the matter any further. Sometime after the meeting, but before September 11, 2001, In-Q-Tel invested in this company and made it part of its portfolio. The leader suggests that in retrospect, the IC's requirements that became apparent after September 11th and the nature of Company 5's technology might have brought the two parties together without the intervention of In-Q-Tel, but since the investment had already taken place, there is no way to know if that would have been the case.

Yellow Companies

Four of the companies participating in this study (Companies 2, 4, 6, and 7) fit the description of a yellow company. Yellow companies actively targeted the government

market but had yet to make a government sale and/or had significant concerns about dealing directly with the federal government. Yellow companies had at least two of the following characteristics: they stated concerns about protecting their IP (Companies 2 and 6); they had little or no knowledge about how to access or sell to government (Companies 2, 4, 6, and 7); their opinion of the government market had been influenced by others who advised caution when dealing with government (Companies 2, 4, and 6).

Prior to their involvement with In-Q-Tel, Company 2 already had a small number of contracts in place within the IC. But Company 2's CEO explained that he initially had concerns about government compromising their IP during the contracting process. "The folklore is that the government has a reputation for 'poaching' technology, either by getting a hook into some part of the IP or putting some kind of export restriction [on the technology.]" However, after dealing with government over time, this company's founder had come to see government differently, identifying ignorance and different motivations (i.e., profit is the primary concern for commercial businesses whereas meeting requirements is most important for government) as reasons for the mistrust between government and the commercial sector.

Company 6 had no federal customers prior to their relationship with In-Q-Tel. While they could clearly see opportunities in the government sector, this company lacked experience dealing with government and did not know how to access the market. Another concern they had, if they did eventually sign a contract, was how to protect their IP. Today, Company 6 says that many of their initial concerns were not valid, but protecting IP is always a sensitive area.

Company 4 also lacked experience in the federal market. To counter that deficiency, they had hired outside "trail guides" to show them around the Washington, DC-area with the intent of gaining important introductions to potential customers and learning how to go about securing government business. Though they had no previous sales to the federal government, they believed it was inevitable. Others had advised Company 4 that the government market could take a while to develop, but they were committed to entering that market. They were looking for an opportunity.

Company 7 is the last yellow company of the sample. They had limited experience working with the federal government, but had no significant concerns about the procurement process. The primary observation they had was that government contracts were unpredictable. Their frustration was that they never knew from year to year whether the contract would be renewed. They just could not make significant advances into the government market.

Green Companies

Companies 1, 8, 9, 10, and 11 represent the green companies from In-Q-Tel's investment portfolio. Whereas lack of experience with the federal government and concerns about dealing with the government market characterized red and yellow companies, green companies had few concerns. They actively targeted government customers and had achieved success in the market.

Green companies had a focused government sales strategy before In-Q-Tel's involvement. For example, Company 8's organizational structure includes a VP for Government Sales. Company 9's CEO had at least 15 years of experience dealing with government in multiple companies. Company 10 formed a sales team dedicated to the

federal market. Company 11 was formed as a result of a merger with another company that had listed government as a customer for 20 years. Green companies' perception of the government as a customer is likely a direct result of the focus and experience these companies had dealing with the federal market.

Question 2

What services does the In-Q-Tel model offer its portfolio companies that promote their growth and development, and what value do these companies place In-Q-Tel contributions?

Supporting Literature

In-Q-Tel activities include analyzing market trends, reaching out to the technology community, negotiating strategic relationships, nurturing portfolio companies, and transferring technologies to the IC (Louie, 2002). Similarly, corporations rely on venture capital programs to identify firms, technologies, or markets that may offer new opportunities, or strengthen existing products or services in which they have an interest (Rind, 1981; Sykes, 1990; Winters & Murfin, 1988). With regards to the activities venture capitalists perform to grow and develop their portfolio companies, Hellman & Puri (2002) identify three roles: providing value-added services, "professionalizing" a firm, and helping a firm establish itself in the marketplace.

This section examines In-Q-Tel's activities as a venture capital firm and how these activities affect their portfolio companies. To support this analysis, three facets related to how In-Q-Tel contributes to the growth and development of its portfolio companies are examined: 1) the identification of investment opportunities; 2) the due

diligence applied to companies prior to investing; and 3) the contributions In-Q-Tel makes to its portfolio companies and the measure of their value towards company success.

The first facet is based on the assumption that before a venture capital firm can make a promising investment, it must first find the appropriate company. The market for good investments is competitive and opportunities are most often the result of assertive investors with close ties to the market (Winters & Murfin, 1988).

The second facet considers the due diligence that venture capital firms apply to their investments and is based on the assumption that thorough vetting of the company will mitigate the risks associated with investing and increase the probability for success. MacMillan et al. (1987) note that most successful ventures in high-tech markets are firms that have demonstrated high-tech products that are acceptable to the market. These companies have created a functioning prototype and have built consensus among other investors for having a "sure bet" technology.

The third facet considers that other than financing, venture capitalists can provide services to their portfolio companies, which add value.

Findings

Identifying Promising Investment Prospects

Researchers argue that successful corporate venture programs require maximum exposure to investment opportunities (deal flow) to better their chances for success (Winters & Murfin, 1988; Sykes, 1990). In-Q-Tel has received thousands of submissions by companies that believe their technologies may fit IC requirements (Louie, 2002), but the number of proposals alone do not guarantee that a venture capital fund will achieve

success. When it comes to deal flow the quality of investment opportunities is more important than the quantity. Winters & Murfin (1988) suggest successful corporate venture programs maintain an active presence in the venture community to build solid networks and invest alongside trusted investment partners. Table 3 lists the portfolio companies surveyed and the origin of their relationship with In-Q-Tel based on their responses to the question, "How did your relationship with In-Q-Tel come to be?" The purpose behind this question was to determine how active a government venture capital group, In-Q-Tel, would be as an investor in the technology sector and work with and compete against other technology venture investors. If the source of In-Q-Tel investments came primarily from direct submissions to In-Q-Tel by their portfolio companies, a passive deal flow, then one could argue that In-Q-Tel's prospects may be suspect. If responses showed that In-Q-Tel actively identified investment opportunities, in that they sought out new ventures or they relied on trusted members of their network[§] for referrals, then one could conclude that In-Q-Tel would have increased the probability that their investments would succeed.

[§] In the context of this section, "network" refers to a company's associates. Network members could sit on an advisory board, they could belong to the company's industry, they could be partners, investors, or any trusted associate that helps the company perform its mission or engage others that could be of assistance.

Table 3. Identification of Investment Opportunities

	Origin of Investment Relationship	Comments
Company 1	Company 1 & In-Q-Tel	Company 1 initially approached In-Q-Tel, but they could not generate interest. In-Q-Tel reengaged Company 1 after receiving an investment from a high-profile firm.
Company 2	Network Member	Member of Company 2's advisory board brokered a meeting between Company 2 and In-Q-Tel / QIC.
Company 3	Network Member	Another venture capital firm brokered a meeting between Company 3 and In-Q-Tel, but nothing came of it. In-Q-Tel reengaged Company 3 approximately one year later.
Company 4	Company 4 through Network Member	A member of Company 4's network referred them to In-Q-Tel
Company 5	In-Q-Tel	None
Company 6	In-Q-Tel	None
Company 7	In-Q-Tel	None
Company 8	No data	None
Company 9	Company 9 through Network Member	Company 9 already had existing contract with IC agency, but this agency referred Company 9 to In-Q-Tel to for an IC-desired product enhancement.
Company 10	No data	Company 10 was aware of In-Q-Tel prior to their investment in the firm, but cannot recall how the relationship was initiated.
Company 11	Company 11 through Network Member	Company 11 already had existing contracts with an IC agency, but this agency referred Company 11 to In-Q-Tel to for an IC-desired product enhancement.
Company 12	In-Q-Tel through Network Member	A company 12 investor referred the company to In-Q-Tel
Company 13	In-Q-Tel through Network Member	A Company 13 board member and an associate of In-Q-Tel asked In-Q-Tel's CEO to sit through a practice presentation that Company 13 was pitching to other investors. The CEO was impressed by the presentation and directed In-Q-Tel analysts to conduct a comprehensive review that led to an investment in Company 13

There are three categories that apply to the way In-Q-Tel's portfolio companies came to their attention. The first way is a company submitting an unsolicited technology proposal to In-Q-Tel, a passive approach whereby the deal presents itself to In-Q-Tel. The second method is where In-Q-Tel searches the market for viable technologies and initiates contact with a company, an active approach. The third method involves networks, either In-Q-Tel's, the company's, or both, bringing the two parties together. This table shows that investment opportunities came from active market research and through networks.

Active Identification

In the cases of Companies 5, 6, and 7, In-Q-Tel initiated the contact; these companies did not seek out In-Q-Tel as an investor. They did not submit a technology proposal to In-Q-Tel directly, nor did they request a meeting through a member of their network. In these cases, In-Q-Tel found these companies through thorough market research. In two cases (Companies 5 and 7), the respondents were surprised that In-Q-Tel even knew who they were.

In the case of Company 1, their initial contact with In-Q-Tel came from an unsolicited technology white paper that they submitted directly to In-Q-Tel. However, In-Q-Tel did not act on the proposal at that time. Approximately one year after Company 1 had approached In-Q-Tel, they received backing from a leading Silicon Valley venture capital group. Soon afterwards In-Q-Tel reengaged with Company 1, and their relationship began. This scenario initially fit the passive approach, but was classified as an active approach because of the time that had passed.

Networking

The most common source of introductions that led to In-Q-Tel investments, though, was through network members, either through a company's network, In-Q-Tel's network, or a combination of the two. Introductions through business networks applied to 7 of the 13 cases. In two cases, Companies 3 and 12, other venture capitalists referred or brokered meetings between In-Q-Tel and the companies. In the cases of Companies 2 and 13, company advisors or board members arranged meetings with In-Q-Tel to demonstrate their technologies. And in the cases of Companies 9 and 11, IC agencies had contractual relationships with these companies, but the agencies wanted modifications done to the technologies to better serve the IC. These agencies referred In-Q-Tel to Companies 9 and 11 to study the possibility of investing in product development. The last case that relied on a network referral was Company 4, which was looking to penetrate the government market and was pointed in the direction of In-Q-Tel by an associate providing guidance on doing business in Washington, DC.

Value-Added Contributions

As detailed in Chapter 2, venture capitalists provide a variety of services to their portfolio companies. Each company was asked to identify the contributions In-Q-Tel made to their company that they considered valuable. The question was open-ended in that respondents did not chose contributions from a list, but they were given the areas of financial assistance, managerial assistance, and technological assistance to help them put the question into context. Table 4 provides the categories of valuable contributions based on each company's responses, the frequency of the contribution cited, and the company attributed to each contribution.

Table 4. In-Q-Tel Value-Added Contributions

Contribution	Frequency	Companies
Networking, Key Introductions, Market Access (Government)	10	Companies 2, 3, 4, 5, 7, 8, 9, 10, 12, 13
Validation of Company / Technology	9	Companies 1, 2, 3, 4, 5, 6, 8, 10, 13
Funding	9	Companies 1, 2, 3, 4, 6, 8, 10, 11, 13
Developmental Assistance	4	Companies 3, 6, 7, 13
Marketing	3	Companies 1, 6, 8
Helping Understand Government Requirements	3	Companies 6, 8, 13
Managerial Assistance	2	Companies 1, 6

According to the responses collected, In-Q-Tel portfolio companies value three contributions most: 1) networking in In-Q-Tel's circle of influence to include access to government and commercial markets, 2) the validation of their company and/or technology, and 3) funding. Other valuable contributions cited by more than one portfolio company include: assistance developing technologies, managerial assistance, marketing, and helping companies understand government requirements.

Networking, Key Introductions, and Market Access

The first value-add contribution most cited in the data was the networking and access provided by these companies relationships with In-Q-Tel. Ten respondents believed that In-Q-Tel's network helped them in a number of ways. One aspect of that network is publicity that is received by being a member of In-Q-Tel's investment portfolio. In-Q-Tel's public relations group actively promotes itself and its portfolio companies, and the In-Q-Tel model has received much attention in the media. For

example, articles in The Wall Street Journal (Grimes, 2003), New York Times (Cortese, 2001), The Washington Post (Loeb, 2001) and many other publications have promoted positive news about In-Q-Tel and its companies. The publicity serves to open doors for many of In-Q-Tel's portfolio companies, though in one case, a respondent from Company 4 stated that the media often get it wrong and sensationalize the relationship between the firm and the IC. But the publicity is valued by most members of the portfolio that receive it.

Another important aspect of this category cited by respondents is the introductions to individuals that can make a significant impact to a company's business. Often these include members of government, industry, the investment community, and other portfolio companies. In-Q-Tel brings together these groups regularly in order to help portfolio companies identify new opportunities to improve their business. Company 12 mentioned that they are engaged with a leading venture capital group that was a direct result of an In-Q-Tel-sponsored conference. Company 2 said that In-Q-Tel has made a significant impact by providing high-level introductions at major company that resulted in strategic utility outside of the government market. And several portfolio companies have partnered with one another in an effort to enhance their product offerings and/or improve their market share as a result of active In-Q-Tel networking efforts.

One of the most important networking activities that come from a company's relationship with In-Q-Tel is access to the government market. Several companies mentioned that In-Q-Tel has opened doors inside the IC by actively promoting the technologies of their companies within. In-Q-Tel has a unique perspective in that its charter puts it in direct contact with senior CIA staffers with real knowledge about the

Agencies technology. It is In-Q-Tel's job to go out and find the companies that can fill these requirements. The predicate for being an In-Q-Tel portfolio company is that your company provides a technology that has utility within the IC; therefore, inclusion in In-Q-Tel's investment portfolio affords a company direct access to defined customer.

Validation of Technology

Technological validation, along with funding, ranks as the second most cited contribution In-Q-Tel makes to its portfolio companies. Nine of the 13 companies believed that the very nature of their relationship with In-Q-Tel gave their company credibility with other their customers and other investors. Many of the companies that identified validation as a valuable contribution suggest that their small size and the newness of their technologies make it difficult to penetrate not just government markets, but commercial markets as well. They described wary customers skeptical about taking a risk with a start up company with an unproven technology. Company 3's co-founder explains:

> "What [our] company claims to be able to do technologically is difficult for a lot of fairly savvy folks to accept. We've frankly spun our wheels quite a bit. [Customers] said they were enthusiastic about what would flow from what we claimed to be able to do. But they didn't believe we could do what we actually claimed, and they just didn't want to spend the time and resources to test drive to see whether or not it was for real. The In-Q-Tel imprimatur was enormously helpful in overcoming that barrier."

In-Q-Tel's reputation for rigorous technological due diligence not only makes the technology more attractive to customers, but it also makes it easier for portfolio companies to secure financing from investors. Twelve of the 13 companies interviewed received financial backing from sources other than In-Q-Tel. But many respondents noted that In-Q-Tel's validation helped convince other investors of their company's

viability. Company 6's Chief Technology Officer describes how In-Q-Tel's validation helped secure additional funding:

> "In-Q-Tel has established a little bit of a brand name for itself, and in terms of securing additional rounds of venture financing from other well-known venture capitalists, having the blessing of In-Q-Tel is no small thing. People look at In-Q-Tel on Sand Hill Rd., at least from my perspective, as a company which is very technology savvy; they have deep connections to a space that is growing right now. And when a [venture capital] company sees that In-Q-Tel has invested in something, the likelihood that they take a meeting and are favorably disposed to believe you when you say your technology is revolutionary is very helpful. It is something we've experienced first-hand."

Funding

The third contribution valued by portfolio companies is funding. Nine of the 13 companies said that the funding was an important contribution to their company's success. Most companies desperately needed a cash infusion to survive, while a few believed that In-Q-Tel's intangible contributions offered more value. Those companies accepted only enough funding to maintain a relationship with In-Q-Tel. However, the decision to accept funding from In-Q-Tel or anyone else was not taken lightly.

Company 2's outlook was that the number one job of any venture capitalist is to provide cash up to the point where a firm can sustain itself with its own revenue, but a company should never take funding unless it needs the near-term liquidity. Company 3's founder echoed that point and explained that accepting outside funding has serious trade-offs: "As a software company – a technology company – all you really have is your people and your technology. Is it really worth it to take development money from somebody or is it better to fund it yourself?" But for many cash-strapped companies, they have little choice. In Company 3's case the answer was clear: "We were virtually on

death's door – literally within weeks of having to shut the company down. [The money] made a big, big difference."

Companies 4, 6, and 10 represent companies that said the money was important but that valued the intangible benefits more than the money. Company 4 had already secured a multi-million round of funding prior to accepting additional funds from In-Q-Tel. The purpose behind the large cash-infusion was to support the growth of the company, to pursue product modifications, and to demonstrate their stability to their multi-billion dollar clients. But in the case of their In-Q-Tel investment, Company 4 states flatly that "the money was secondary," because In-Q-Tel brought so much more:

> "Quite frankly, we would have taken $75K from them. We ended up taking substantially more than that, but we would have done something tiny or less. Anything to get the relationship…to have them on the team with you. There are 6,000 companies that would like to have them on their team, and there is only 1% that got them."

Company Outlooks

The last area analyzed deals with the outlook each company has regarding their future and how it relates to their relationship with In-Q-Tel. The basis for including this question is to determine whether In-Q-Tel contributions aid in the growth and development of their portfolio companies. Table 5 lists each company interviewed and shows what they believe to be their outlook and whether they can attribute that to In-Q-Tel contributions.

Table 5. Portfolio Company Outlooks

Company	Projected Outlook	Attributable to In-Q-Tel?
Company 1	"Stronger"	"Partially"
Company 2	"Absolutely stronger"	"Yes"
Company 3	"Dramatically stronger"	Yes
Company 4	"An order of magnitude [stronger!]"	Yes
Company 5	"Stronger"	"Yes"
Company 6	"Way stronger"	"Absolutely
Company 7	"Stronger, without a doubt."	Yes
Company 8	"Slightly stronger, but about the same.	N/A
Company 9	"Absolutely stronger"	Yes
Company 10	"Somewhat improved"	Yes
Company 11	"Stronger"	"A portion of it"
Company 12	"We have a much higher probability of success."	Yes
Company 13	"Stronger, definitely"	Yes

Nine of the 13 companies (Companies 2, 3, 4, 5, 6, 7, 8, 9, 12 and 13) interviewed believed unequivocally that In-Q-Tel contributions have made their outlook stronger. Companies 1, 10, 11 believed that their outlook has improved somewhat or that their stronger outlook is partially attributable to In-Q-Tel. Company 8 believes that its outlook has remained the same.

Of those companies that believed their outlooks to be stronger, the primary reasons they believed that to be the case are tied to the contributions identified in the previous section. In most cases, the improved outlook comes from the access to the

government market that these companies had not fully penetrated prior to their involvement with In-Q-Tel. Company 6 sums up In-Q-Tel contributions attributable to their outlook this way:

> "I would say they have been good in all three dimensions: as a venture firm, a technology innovator and leader, and as a part of the CIA inserting technology. I can't say enough about how the doors they opened for us have been fantastic. And I believe that a lot of the users of our technology with in the Agency are very happy users. I've got to think that they are pulling for In-Q-Tel too, because we would have never hooked up had it not been for In-Q-Tel.

Of the companies that believed their outlooks had improved slightly or that had would attribute their success partially to In-Q-Tel, there were several reasons given. In the case of Company 1, their respondent noted that In-Q-Tel has provided value to the firm, but there are other facets of their business that are evolving as well. For example, their market is growing and they are executing better as a company, which have helped the company achieve success outside In-Q-Tel's area of influence. Company 10 believed that there business has somewhat improved, but their reason is that their relationship with In-Q-Tel has just begun and the benefits of their relationship have yet to be realized. Company 10's respondent believed that they would have had success in the government market without In-Q-Tel, but he noted that they have helped open doors, which has certainly helped. Company 11 also attributes a portion of their success to In-Q-Tel. The reasons they state are similar to those of Company 10 in that they had already penetrated the government market. In their opinion, In-Q-Tel is a useful intermediary, but they believe that ultimately their success is determined by their relationship with the customer much more than with In-Q-Tel.

Company 8 was the only company that believed that their outlook was not affected much by their relationship with In-Q-Tel. Their reason for this outlook is based on the relative amount of business that they derive from government compared to their commercial customer base. Company 8 was engaged with government prior to their relationship with In-Q-Tel, but has made a strategic decision not to be heavily invested in the government market, but to focus on more of the commercial opportunities instead. While they value the government base, the amount of revenue that streams from it will not make or break the company.

Summary

This chapter reported the data collected for this research as it relates to the 13 firms studied. It addressed the two primary research questions: 1) Has the In-Q-Tel model created new business relationships between the Intelligence Community (IC) and technology companies that would not have existed otherwise? 2) What services does the In-Q-Tel model offer its portfolio companies that promote their growth and development, and what value do these companies place on In-Q-Tel contributions?

As for the first question, the data showed that three categories of companies made up In-Q-Tel's investment portfolio: red companies, which had not done business with the government or had had not actively sought to penetrate the government market; yellow companies, which did consider the federal government to be a viable market but had yet to make a sale and/or had significant concerns about contracting with the federal government prior to their relationship with In-Q-Tel; and green companies, which are companies that actively pursued the federal market, had federal contracts or schedules in

place prior to their involvement with In-Q-Tel and had no significant concerns about contracting with the federal government.

The second question addressed how In-Q-Tel identifies prospective firms in which to invest and whether its services contribute value to its firms. The data suggest that there are three methods by which In-Q-Tel identifies firms, passive identification, active identification, and identification through their networks. The data also show that In-Q-Tel contributes value to their portfolio companies in several ways, but the most significant areas are in validation of their products, providing access to the government market and networks, and funding.

Chapter 5 presents the results of this data and reviews the limitations of the study. It offers useful findings based on the data for similar programs for the DoD and suggests areas for further research.

V. Conclusions and Recommendations

The purpose of this chapter is to present the conclusions drawn from the data analysis. It identifies the limitations of this research and offers recommendations for senior DoD decision makers and other researchers regarding the viability of government-backed venture capital funds to promote and the introduction of new commercial technologies into sponsoring government agencies. This chapter answers the two investigative questions from the data analyzed in Chapter 4: 1) Has the In-Q-Tel model created new business relationships between the IC and technology companies that would not have existed otherwise? 2) What services does the In-Q-Tel model offer its portfolio companies that promote their growth and development, and what value do portfolio companies place on In-Q-Tel contributions? Based on the propositions of these two questions, this chapter then addresses the answer to the primary research question of this study; can a government-backed venture capital fund promote the introduction of new commercial technologies into sponsoring government agencies?

Conclusions

This section presents three propositions based on the analysis of the data from Chapter 4. First, the In-Q-Tel model has created new relationships between the IC and technology companies that would not have existed otherwise. Second, the services provided by In-Q-Tel that aid the growth and development of their portfolio companies include validation of the companies' technologies, networking, and access to the

government and commercial markets. Finally, the In-Q-Tel model can promote the introduction of new commercial technologies into sponsoring government agencies.

Proposition 1

The In-Q-Tel model has created new relationships between the IC and technology companies that would not have existed otherwise.

Discussion

The data indicate that the In-Q-Tel model has created new relationships between the IC and technology companies that would not have existed otherwise. In the case of red companies, the role In-Q-Tel played was obvious. Red companies (companies that had not previously identified the government as a customer or actively pursued the federal market prior to their relationship with In-Q-Tel) represented cases that led one to conclude those companies' paths might not have crossed with the government. Two or more of the following traits applied to red companies: they lacked personnel with experience in the government market; they believed that the government market was onerously bureaucratic; and they presumed that barriers exist that limit small companies opportunities to the federal market. However, when asked if their companies would pursue government contracts after their engagement with In-Q-Tel, leaders of all four companies emphatically stated "yes." When asked how they would characterize their outlook since engaging with In-Q-Tel, they responded "stronger" as a result of that engagement.

In the case of yellow and green companies, the conclusion is not as clear as with red companies, but findings support the conclusion that the In-Q-Tel relationship has created new opportunities between these companies and the IC. Yellow and green

companies had fewer concerns about dealing with the government as a customer. Some were actively pursuing the federal market, and some had contracts in place with the government – even within the IC. On face value, one could argue that companies actively pursuing IC customers, and in some cases, already achieving a presence in that market, did not need an entity such as In-Q-Tel to promote a relationship. What benefits did the In-Q-Tel model offer its IC clients that they could not achieve on their own?

The answer to that question is traced to the services that In-Q-Tel provided its portfolio companies. While 6 of the 13 portfolio companies had existing Government customers, prior to In-Q-Tel, there was no concerted effort to match companies with in-demand technologies to IC customers who had a requirement. In-Q-Tel served in that capacity. The data show that 9 of 13 companies valued the technological validation and network access they received by being a member of In-Q-Tel's investment portfolio. Of the 6 companies with existing Government business, 4 said that validation and networking offered value in reaching new customers within the IC. Because In-Q-Tel thoroughly vetted companies and their technologies, respondents believed that customers who respected In-Q-Tel's analysis were more likely to consider a new technology or agree to meet with an In-Q-Tel portfolio company. One respondent commented that his company's position as an In-Q-Tel portfolio company allowed it to "rise above the noise," particularly after the events of September 11 when untold numbers of companies wished to pitch their technologies to national security institutions. It is unlikely, given the increased operations tempo, those agencies could dedicate the amount of resources necessary to thoroughly review and comprehend all proposals received or scour the market to find the technologies they needed.

While no one can conclusively say that the IC would not have come together with In-Q-Tel's portfolio companies on their own, history as described by the CIA's former Director of Science and Technology indicates that would have been unlikely (Laurent, 2002). In-Q-Tel claims to have succeeded with respect to this proposition (Louie, 2002), and the data from this study support that claim. The In-Q-Tel model has created new relationships between the IC and technology companies that would not have existed otherwise.

Proposition 2

The In-Q-Tel model aids the growth and development of its portfolio firms; their most valuable contributions include: validation of portfolio companies' technologies; providing its portfolio companies access to its network; and funding companies and their technologies.

Discussion

The data detailed in Chapter 4 support the proposition that In-Q-Tel contributions support the growth and development of its portfolio companies. While In-Q-Tel offered many services to its portfolio companies that were valued and used to varying degrees, three contributions stood out: the validation of a company's technology that came from being a member of In-Q-Tel's portfolio; access to In-Q-Tel's network within the IC and other venture capital groups; and funding.

Two of In-Q-Tel's contributions serve as competitive advantages for its portfolio companies: technological validation and network access. In the case of technological validation, 9 of 13 companies interviewed believed that this contribution resulted in customers and investors inside and/or outside of government having greater respect for

the technology offerings. An equal number believed that their affiliation with In-Q-Tel resulted in greater access to customers and investors that were part of In-Q-Tel's network. Companies claimed that these contributions resulted in increased market opportunities and subsequently their growth and development as a company.

Companies that make up In-Q-Tel's investment portfolio underwent rigorous technical due diligence. Company 9's CEO described it as "expensive and painful…a bunch of PhDs sitting in my office for two or three months asking questions that no commercial customer, even Fortune 500 customers, had asked us…the stuff that many people wouldn't even know *how* to ask." Feedback from portfolio companies support the claim that customers within the IC and elsewhere as well as other investors know of In-Q-Tel's reputation and respect the amount of due diligence they apply to a company before making an investment. Furthermore, companies explained that their customers and investors understand that a customer base has been identified and has bought into the technology before In-Q-Tel will proceed with an investment. The companies that cite validation as a value-added contribution claim that In-Q-Tel's commitment to a firm and its technology carried considerable weight with customers and investors who are looking to minimize the risks associated with new technologies.

As for access to In-Q-Tel's network, portfolio companies that identified this factor as a value-added contribution commented on the difficulty of penetrating the government market. These companies described In-Q-Tel as a tremendous ally for accessing the IC. In-Q-Tel's close relationship with the QIC offers insight into the IC's IT requirements, and In-Q-Tel knows what technologies are applicable to the IC and who the potential customers are. Furthermore, since In-Q-Tel's success depends to some

degree on introducing as many applicable technologies as possible into the IC, it actively promotes its portfolio companies and looks for opportunities to bring them together with customers and investors that can make a positive impact. The ability of portfolio companies to successfully use this network was affected in no small part by the validation they receiver from being affiliated with In-Q-Tel. Respondents claimed that once they became an In-Q-Tel company, phone calls were returned and meetings happened more readily than before their relationship.

The third contribution identified was funding. The literature, as established in Chapter 2, confirms that funding is critical during companies' early stages until they can generate enough revenue to sustain themselves. Companies varied on the importance In-Q-Tel funding played in their development; several mentioned that it was absolutely critical while others explained that In-Q-Tel funding was minor compared to other contributions. However, since companies that accept venture capital typically give up some degree of control, it is assumed that companies carefully considered the consequences, and the funds provided at least some utility if not being critical to a company's ability to continue operations.

Perhaps the most important determinant of whether In-Q-Tel contributed to the growth and development of its portfolio firms came from the answer respondents gave to the question, "Since engaging with In-Q-Tel, do you believe your company's outlook to be stronger, weaker, or about the same?" Outside analysis can conclude the value of In-Q-Tel contributions had towards the success of its portfolio firms, but given the subjective nature of this investigative question, the opinions of the portfolio companies regarding In-Q-Tel contributions was an important measure. No firm believed that their

outlook became weaker after engaging with In-Q-Tel, and 12 of the 13 companies believed that their outlook is at least somewhat stronger that before.

Taking into account the contributions In-Q-Tel offers its portfolio firms and the value these firms place on the relationship, the In-Q-Tel model aids the growth and development of its portfolio firms.

Proposition 3

A government-backed venture capital fund can promote the introduction of new commercial technologies into sponsoring government agencies.

Discussion

Government-backed venture capital fund can promote the introduction of new commercial technologies into sponsoring government agencies. This study supports this finding in two important ways. The In-Q-Tel model has shown that it created relationships between its client, the CIA, and companies that promoted applicable technologies that would not have happened otherwise. This study has also shown that the In-Q-Tel model offered value-added contributions that created competitive advantages for the companies in its investment portfolio. Furthermore, the literature supports the claim that corporate venture capital programs, of which the In-Q-Tel model has many similarities, can bring strategic benefits to its sponsoring organization.

Limitations

Several limitations affect this research: respondent bias, researcher bias, and the performance measures. It is understandable that the respondents may not have been fully forthcoming in their responses. Though the interviewer guaranteed anonymity, that

guarantee was based on the level of trust between. The fact that In-Q-Tel provided the contact information could have affected the respondents willingness to be frank in their assessments based on their concern that their comments could get back to In-Q-Tel. At the same time, interviews with strategic leaders were an invaluable source of first-hand data. So long as this limitation is stated upfront, it is one worth accepting based on the overall importance and applicability of the data.

A second limitation that must be noted is the potential for researcher bias. The interviews were conducted by the researcher, which could affect how the data was interpreted or influenced the direction of the discussion. To counter this tendency, all interviews were recorded and transcribed verbatim. Data analysis did not occur until several weeks after the interviews took place to allow for a period that the interview details could "fade."

Another limitation concerned the evaluation measures. There were several measures that could have been used to evaluate how the In-Q-Tel model performed as a venture capital group. Some of the more common include strategic value of the program as defined by the sponsor or return on investment. This research focused on one aspect of the viability government-backed venture capital funds have towards promoting the introduction of new commercial technologies into sponsoring government agencies, and that aspect comes from the perspective of the companies that make up the portfolio. The limitation of this approach is that it does not take into account the opinion of the CIA, the agency that ultimately sponsors the model, to determine whether their investment in In-Q-Tel met their expectations. The CIA, however, chose not to participate in this study.

The strategic value of the technologies introduced into the IC as a result of the In-Q-Tel model is largely a function of the CIA's satisfaction with the technologies it receives. If the CIA is satisfied with a technology that results from an In-Q-Tel investment, and that technology is incorporated into an IC program, then In-Q-Tel counts that as a deployment success. Only the CIA, however, can answer whether the return on these technologies was worth the investment. If In-Q-Tel had produced only one or two technology pilots, but the overall value of those contributions to the CIA's operations had been great, the amount invested could be irrelevant to the Agency, whatever the financial return. On the contrary, if In-Q-Tel produced dozens of technology pilots, but the Agency believed that the overall value was marginal, then the Agency might take a dim view of their relationship with In-Q-Tel, especially if their investment also produced financial losses.

Because many of these deployment successes are not part of the public record (for obvious reasons,) details of successes cannot be disclosed. Without knowledge of the technology deployments and the value placed on these technologies by the CIA, this measure of strategic value holds little meaning for those outside the Agency.

Secondary sources, however, do support the idea that the CIA is satisfied with the In-Q-Tel model. In the DCI's 2002 annual report, Director Tenet labeled In-Q-Tel a success at "[deploying] novel commercial technologies to meet critical mission requirements" (DCI, 2003: n. pag.). Furthermore, since Louie's congressional testimony in 2002, In-Q-Tel has publicized 14 additional investments (In-Q-Tel, 2004). The CIA's continued support of In-Q-Tel combined with data derived from portfolio companies suggests that this limitation does not discredit the results of this study.

As for return on investment, In-Q-Tel does use this measure to evaluate its performance. Even though return on investment rarely serves as the primary objective of a strategic venture capital program, it cannot be overlooked. One reason is that In-Q-Tel's business model relies on investment returns to fund future investments. Another reason identified by Winters & Murfin (1988) and Rind (1981) is that investments that hold strategic value will likely hold financial value too.

For this thesis effort using return on investment proved unworkable. While the CIA's funding of In-Q-Tel is a matter of public record, In-Q-Tel invests primarily in private companies (only 1 of the 13 companies interviewed was publicly-held.) The valuations of these companies are closely guarded and can be extremely subjective figures. Moreover, In-Q-Tel entered into non-disclosure pacts with its portfolio companies, and they are bound to not share financial information with third parties. And even if access to financial details was granted, providing a meaningful analysis of financial performance would be unlikely.

Many researchers, knowing the limitations of financial performance measures for new ventures, have tried various ways to provide an objective performance analysis for new ventures (see Miller et al., 1988; Venkataraman & Ramanujam, 1987; McGrath et al., 1992); however, there is no consensus on financial measures to judge overall performance. Acknowledging the importance of financial performance, but appreciating the difficulty of producing a meaningful analysis given the constraints of In-Q-Tel's nondisclosure pacts and the lack of a viable financial performance measure, this study did not include financial return on investment as a performance criterion.

Recommendations

For Further Research

This study focused on whether a government-backed venture capital fund can promote the introduction of new commercial technologies into sponsoring government agencies. This research question was taken from the perspective of the companies that made up In-Q-Tel's investment portfolio. It relates to the identification of companies that can meet the IC's technology requirements and focuses on the contributions of In-Q-Tel that help promote and develop these companies. An analysis from the perspective of the users within the IC would offer a useful measure of the model's effectiveness. However, gaining access to the users in any meaningful way may prove to be a difficult proposition given the secretive nature of the IC and its application of the technologies.

For DoD Senior Leaders

The In-Q-Tel model has shown that a government-backed venture capital firm to be a capable acquisition vehicle for linking the IC's requirements to companies with the best chance of meeting them. In-Q-Tel's staff, with its ties to the technology sector and other venture investors, uncovered promising firms and technologies that may have previously been outside the IC's scope. Many of the companies interviewed claimed that In-Q-Tel helped clear the hurdles they experienced when dealing with the IC. These companies had technologies that fit IC needs, but it is unlikely the technologies would have been applied to those requirements without an organization dedicated to that very purpose. In-Q-Tel brought credibility in that it had ties to the communities in which it operated, but it also brought funding which established it as a serious player.

There are three recommendations for those in a position to pursue such a model. First, any venturing program must be staffed by individuals that have close ties to the technology industries they will pursue. A common response by those interviewed was that In-Q-Tel partners knew a tremendous amount about the companies' technologies, and how they could be applied within the IC. Many respondents said that In-Q-Tel had a far greater understanding of their technology than other investors and even their other customers. This type of knowledge serves two purposes. It makes it easier to co-invest with others who may have a deeper understanding of the business aspects than government, but may not share the government's understanding of the technology details. Thus the relationship helps complement the other parties' weaknesses. Second, it helps ensure that the venturing program will pursue the technologies that best fits the sponsoring agency's technology requirements.

The second recommendation for senior leaders concerns the pursuit of commercial technologies as opposed to government-only technologies. As explained, an advantage of the In-Q-Tel model is that they pursue only commercially-viable technologies that also serve a purpose in the IC. This focus on the commercial side gives the portfolio companies a better chance to succeed. Because the government technology market relative to the commercial technology market is considerably smaller, pursuing government-only technologies will limit companies' ability to sell to larger markets. Also, other investors are unlikely to co-invest if the investment does not offer a reasonable chance to achieve high financial returns. If government attempts to invest in government-only technologies, it runs the risk of making poor investments and bearing the risk alone.

The third recommendation is to keep any venturing program at the DoD level. In an interview with Government Executive magazine, A.B. Krongard, the CIA's executive director, warned that expanding In-Q-Tel-type organizations throughout government risks diluting technology gains (Laurent, 2002). This is a valid argument. Though there are many investments to be made, the literature suggests that good deals are few and far between. Maintaining several venture capital programs within the DoD runs the risk of having organizations competing for the same companies or diluting the talent that would be available to run these organizations. Given the joint nature of DoD operations, a single venture capital program that focuses on the services' joint requirements and works alongside In-Q-Tel and doesn't compete against it offers the best chance for a successful program.

Summary

This chapter addressed the two investigative questions of this research and primary purpose of this study and concluded that: 1) the In-Q-Tel model has created new relationships between the IC and technology companies that would not have existed otherwise; 2) the services provided by In-Q-Tel that aid the growth and development of their portfolio companies include validation of the companies' technologies, networking and access to government and commercial markets; and 3) the In-Q-Tel model can promote the introduction of new commercial technologies into sponsoring government agencies.

This chapter proceeded to discuss the limitations of this study. Specifically, this study focused on the performance of the In-Q-Tel model from the perspective of its

ortfolio companies. This chapter concluded with a recommendation for researchers to explore the value of the In-Q-Tel model from the perspective of the users in the IC, if possible. It also offered three recommendations to senior DoD leaders in the event the DoD opts to pursue a similar model: 1) staff any program with individuals with close ties to the sectors they will pursue; 2) do not invest in government-only technologies; and 3) keep the program at the DoD level so as not to dilute the talent needed to run the program or compete against other services for similar requirements.

Appendix A: Company 1 Interview

November 17, 2003

Company 1 I believe the answer to that is yes, and the only reason I'm hesitating is because I don't recall some of the timing of our early deals. I'm pretty sure the answer is yes, although it may have been through a systems integrator. No, I'm sorry. I take that back. I've now reconstructed events. The answer is unequivocally yes.

Interviewer OK. So, yes; they did.

Did your company consider the federal government to be…well, obviously you would have considered them as a potential customer so I won't need you to answer that.

Did your company have concerns about entering into a contractual relationship with the federal government?

Company 1 Not in the sense that we were concerned about the government as a customer or a partner. We actively sought government customers out from the beginning of our sales process.

Interviewer Prior to your company's relationship with IQT, had your company entered into a contractual agreement with the federal government to sell a product or service?

Interviewer Oh, OK.

How has your company's opinion of the federal government as a potential customer changed since you've entered into a relationship with IQT?

Company 1 I don't think our opinion has changed. Our ability to execute has certainly improved, and we're delighted with our relationship with the federal government as a customer.

Interviewer Oh, OK

Does your company have a contract in place with the federal government to sell your product or service? If so, what is your opinion of the

contracting process?

Company 1 Well when you say, “do we have a contract in place right now,” we have current customers, and we’re getting new ones all the time. So we sell perpetual license-based software, and then there is maintenance in addition to that which is an ongoing, renewable process. So I guess the short answer to that is yes.

Interviewer OK. And what is your opinion of the contracting process?

Company 1 I don’t get heavily involved with it, although I was the point person for the IQT relationship. I think it’s no different than anyone who would have had any experience with the federal government would expect.

Interviewer OK. So you mean that it was…

Company 1 I mean it was no more burdensome or complicated than probably some of our commercial transactions. And some cases it was somewhat easier in that we always ask our customers to be references, and we’ve had more success, I think, with some our federal accounts than we’ve had with some of the commercial accounts.

Interviewer OK. So based on your experience, your company probably will pursue additional contract with the government in the future?

Company 1 Absolutely.

Interviewer OK. The next questions are going to talk a little about IQT.

Would you be able to describe the evaluation process your company underwent before entering into a relationship with IQT? And by that I mean, how would you characterize the due diligence applied by IQT to your company’s technology offering, management team, and financial health?

Company 1 Well, I looked at IQT as a tech-savvy VC in terms of the process they went through. So I would say that they did as much due diligence as any VC would do, plus they had the benefit of their clients or customer

providing them feedback in terms of the usefulness of the product and technology.

Interviewer OK

Company 1 Does that answer your question? I guess you have to have venture funding as your frame of reference. There were multiple meetings, at multiple levels. Every member of the [unintelligible] management team was involved. As the [position deleted] I was the point person for the ongoing logistics and coordination of that process as well as the final negotiation of the statement of work. The terms and conditions were set by the board, so I wasn't involved with that, but that is no different than any other venture deal. We did present to some of IQT's clients, and I believe that was somewhat different than you would have with a venture capitalist because they wouldn't have any clients, per se. Right? So I think IQT had the benefit of additional, knowledgeable eyes and ears on the [company deleted] product and technology.

Interviewer Do you believe [company deleted] has a clear understanding about how your technology fits into the needs of the IC? And I guess more specifically, has IQT actively communicated their technical requirements, either directly or by facilitating the communication between [company deleted] and the IC customer?

Company 1 To the extent they can do that, I believe they have. We had a very structured statement of work that we entered into along with the financing and that drove a lot of the technical definition of the products extensions that they needed to see. So in that sense it was not equivocal at all. It was clearly spelled out. And any adjustments that have been made have been handled through the program management function that IQT has that the day-to-day interface for [company deleted].

Interviewer OK. Has your relationship with IQT affected how your company has developed or marketed its product offerings, or are they pretty much in line with what you had originally planned?

Company 1 There have been no, what I would call, material or architectural or directional changes as a result of the IQT relationship. But I will tell you that what they've asked us to develop is consistent with our overall plan, just some of the specifics that they have looked for have been different

than we may have developed in terms of the order of priority and things like that.

As far as marketing is concerned, we've used the relationship to huge advantage. They are a great validator in the federal government, and in fact, in the commercial space as well. And, while I wouldn't say that it has changed our marketing plan, it certainly amplified our message and validated our message.

Interviewer OK. And kind of along the same lines, in what ways has IQT contributed to your company. For example, could address how they've assisted your company in capabilities such as developing technologies, financial backing, or managerial assistance? Are there any examples in those particular areas that are worth noting?

Company 1 They're not involved operationally from a management standpoint, so there is not necessarily a contribution there.

From a financial standpoint it's obvious. They partially funded the company, and we used that for operating capital during a time when we were not cash-flow-break-even. So that was positive.

I think – maybe this counts as management – I think that some of the process that we had to put in place to satisfy their statement of work in terms of quality control, testing, documentation, I think has been beneficial for a young company that perhaps hasn't had that discipline in place.

As far as benefiting the company from a marketing and sales perspective, I mean they are advocates for us. They evangelize [company deleted]. They host visits from other parts of the federal government, who want to learn about IQT portfolio companies, especially [company deleted] technology. They're called in as advisors in certain parts of the government, as I understand it, when it comes to this kind of technology. So we look at them as a very strong advocate for us inside the federal government space, and we could pretty much point directly to some deals or sales that we've gotten that I believe have been positively influenced by IQT.

Interviewer OK. Has your relationship with IQT helped your company develop networking opportunities with other investors or companies? And have these networking relationships resulted in additional investments, technical assistance, or new market opportunities? And also, along the same lines, have other investors referred you to IQT. I mean, how did that relationship take place?

Company 1 Well they co-invest a lot with Kleiner, Kleiner-Perkins. And I believe that is how they got to us.

Interviewer OK. So they approached you, in fact, rather than the other way around?

Company 1 Yes. Although we knew about them and at several times had tried to interest them to no avail, and then we got the Kleiner investment and I think that itself was a huge validator for IQT and got their attention. So that is how the relationship started.

I think on the other side, we're not looking for financing and they do recommend from time to time companies that we should talk with or try to network with. They encourage their portfolio companies to come together. They have a forum once a year where everyone presents and in case there are opportunities to work together. They are always on the lookout for that, but it is more of a suggestion than anything else.

Interviewer Now has [company deleted] had any concerns protecting their intellectual property rights?

Company 1 We did when we signed the statement of work and the financing, but we handled that upfront with the legal agreement.

Interviewer What do you consider to be In-Q-Tel's most important contributions to your company?

Company 1 There have been a lot of them. Certainly the funding was a great benefit. But obviously I've talked through this with you, I believe the validation that they've provided us in terms of the quality of the product, their reputation being behind the company has been just an incredible asset for us.

Interviewer Of the contributions they given to you, do you have any that would have offered the least value or that have detracted from the company?

Company 1 Not detracted. Again, pitting some of their priorities in the development program has proven… there are challenges from time to time. There are some idiosynchratics requirements that we may not be able to offer the

rest of the market because they are not relevant, for example. But those are few and far between, and they have in fact proven to be very flexible when it comes to that so I really, to be very honest with you, see very little, if any negative elements to the relationship. It's been all upside for us.

Interviewer Since engaging with IQT, do you believe your company's outlook to be stronger, weaker, or about the same

Company 1 Stronger.

Interviewer And can you attribute that to IQT contributions?

Company 1 I think partially. You know this all about adding up a lot of intangible assets of a working business. Our market's growing. We have an excellent product. We're executing well. And just like a lot of marketing, IQT has helped us expose that level of success and capability to the market place, and gave people confidence to do business with us. While I can't say they were primarily responsible, they certainly provided part of the impetus for our success.

Interviewer You have mentioned that you have other investors that have backed you, correct?

Company 1 Correct.

Interviewer How would you compare the due diligence that IQT applied during the evaluation stage to that of other VCs in general?

Company 1 Other than having their clients involved in the process, I didn't see much difference between them and traditional VCs. They have the benefit of knowing specifically what they want and having the opportunity of looking across the market. They came well educated and knew what they were looking for. So in some sense, they were satisfied with the product pretty quickly. The terms of the deal were pretty easy to negotiate. They were really a strategic round investor. So there wasn't a whole lot of range of motion there. And then, I think they wound up becoming our advocates a lot more quickly than a venture capitalist. So

at the working level, once the partner and the associate and the program manager decided that this is something they wanted to do the wound up having to sell us inside their client so they wound up becoming cautious, but real allies, if you will.

Interviewer Now when you were mentioning they knew what it is they were looking for, do you find that with other venture capital groups that they are looking at you more as a financial investment rather than an investment in growing your technology? Obviously they kind of go hand in hand, but do you find any difference in they way you are evaluated?

Company 1 Well clearly there is no client on the other side of a venture capitalist, so the whole transaction is financial, right? They are trying to gauge how big this business is going to become and what their return on investment is. From a [company deleted] perspective IQT, and Gilman Louie publicly talks about this all the time, it's about the technology. And while they want to make astute investments, the reason their in place and their mission is focused on identifying technologies that will advance the cause of the intelligence community. And I think that gives them a slightly different perspective in terms of what criteria they have to satisfy. In some sense it may be a little bit harder because not only do they have the financial hoops they need to jump through, their client has to be comfortable with the technology as well.

Interviewer How would you compare the deal structure you have with IQT with that of other VCs?

Company 1 I didn't get heavily involved with that part of the process, but I would probably say it was no different. When it got down to that part of the deal, the partner acted like a traditional venture capitalist. There was a negotiation over valuation, etc. So that looked pretty normal to me.

Interviewer Generally speaking, what do you consider the most important contributions a venture capitalist could make to your company?

Company 1 That is sort of a loaded question depending on where you happen to sit at any point of time. I guess venture capitalists, and [company deleted] has been fortunate, I think this has been the case, you want smart money. You want reasonable financing and you want your venture capital partners to open doors for you, to have their own sort of brand

recognition so you can say you're a Kleiner company or an IQT company, and that means something. And I think the other major item you look for is networking and doors opening. Can you network us into a certain organization? Can you set up a commercial partnership? And there are a number of things you could look to your board and your venture capitalists to help with.

Interviewer How would you say IQT compares to other venture capitalists?

Company 1 On the federal government side they've opened a lot of doors for us, or at least facilitated us opening those doors. Clearly they are not going to have a huge amount of commercial influence. And as far as partnering, they are not in the game of brokering us with Hewlett-Packard or IBM. That is just not the mode in which they operate, nor is that something we expected from them.

Interviewer What contributions to your company does IQT make that are more valuable than other venture capitalist?

Company 1 Within the federal government, the [unintelligible] of IQT speaks volumes in terms of the quality of your product, the quality of your organization, the sort of the "wink" about who uses your software. So it really winds up giving us a huge boost in a lot of places that pay close attention to what they do.

Interviewer Are there any contributions that you get from venture capitalists in general where you believe IQT contribution pale in comparison?

Company 1 No.

Interviewer So across the board you believe they are at or better than other venture capitalists?

Company 1 Well you've got to remember, they invested after Kleiner Perkins did. Now Kleiner had to take a great leap; we didn't even have revenue when they invested. So IQT at least had the benefit of knowing we at least had some revenue and were able to talk to paying customers. So, I mean, when you're talking about venture capital, you know there are a lot of

ways to rate that. So as far as their risk profile is concerned, I would say that Kleiner took a bigger risk with us, if you will.

Interviewer Is there anything that we did not discuss that you feel is important that you'd like to talk about?

Company 1 If you can tell, I'm a big fan of the relationship. They been an excellent partner for us, and our [position deleted] is a very professional and savvy individual and does a great job bridging the clients with [company deleted] in terms of all the different requirements. They've just proven to be everything we could have expected of them as a partner.

Appendix B: Company 2 Interview

November 19, 2003

Interviewer My first question is, prior to your companies relation ship with IQT, did your company consider the Government as a potential customer?

Company 2 Definitely. They were our only customer to date. We had originally been funded by DARPA and I had begun selling systems into a couple other parts of the IC.

Interviewer So I guess my second question then is, prior to your relationship with IQT, had you entered into a contractual agreement with the Government

Company 2 Yes.

Interviewer Did you have concerns about entering into a contractual relationship with the federal Government?

Company 2 In the first place?

Interviewer Right.

Company 2 Yes, definitely.

Interviewer What might some of those concerns have been?

Company 2 The folklore around government contracting is that the US Government has a history or reputation of poaching technology, either by getting a hook into some part of the IP or putting some kind of export restriction, or something. I haven't actually seen this borne out as much, but especially in the beginning when I didn't have that much information, the folklore was very cautionary.

Interviewer Have you found that to be the case [the Government as a customer]?

Have they been better, worse, or about the same?

Company 2 They way they are different is that instead of the traditional image of the Government as being a monolithic, borg-like creature – do you remember from Star Trek? – there is this image [that it] has no humans in it. Obviously that is completely wrong. In fact, every contract that we signed had a completely human face on the other side. There was a person that we were trying to support. From the very first contract to the latest one we've done since there has been a specific group of people that we could have a conversation with, and come to trust. And we've come to trust them actually much faster than I could have seen in the commercial world. It just seems that the folklore was wrong.

I think I see where that folklore comes from. It seems that the people on the other side of the table are not motivated by the same types of financial concerns that a person in a regular company is motivated by. So beyond just investing, the people in the commercial world get bonuses based on whether they pick the right product, and people get a promotion if their program does quite well, and the promotions seem to be quite different than happens in the federal government. So they [the federal Government] are often price-insensitive, but they are concerned about things a commercial company doesn't understand. And the things they're concerned about tend to make the Government lean towards things that create a folklore of poaching.

Interviewer Has IQT in any way affected your opinion of the federal Government as customer or of the contracting process? Have they been actively involved in changing that opinion, or is that more [of a case] of you dealing with the federal Government directly?

Company 2 If anything, IQT has hurt my impression of the Government's ability to do contracting.

Interviewer How so?

Company 2 IQT itself doesn't have procurement officers, so the people who negotiate the IQT contracts have very little context for actually creating contracts that can be transitioned to the Government.

If I had no contact with real Government procurement officers and real Government contracting, I wouldn't know any better, but the agency is a whole lot better at it than IQT is.

Interviewer A final question here, your company has – and I'm basing this on your previous responses – you do have contracts in place currently with the federal Government?

Company 2 Right. Not many, we're still a small company and we're working on more. And one that I think will be very important to us has been radically accelerated by IQT, but not because IQT itself created the contract. They were a catalyst for the contract happening. But it was…I need to give you more information for this to make sense, but I can't do this if you're recording me.

Interviewer OK. If you want I will hit "pause" and take this off the record.

Company 2 Sure.

Conversation paused

Interviewer OK, could you describe the evaluation process your company underwent before you entered into a relationship with IQT? For example, how would you characterize the due diligence applied by IQT to your company's technology offerings, management team and financial health? That question covers a lot, but if there areas that you believe are worth mentioning…

Company 2 Well I can compare it to two things that IQT is trying to merge. We can compare it to a traditional VC or we can compare to a visionary procurement in the IC. And I really mean visionary procurement, because traditional procurement doesn't have a tasking to seek things out – people show up with things they want to have bought, right? But there are people within the community, some of our earliest customers, who said, "Look, I know how to work the contracting process. These are some things we have to get in here. So I'm going to get something done, somehow, so that it can happen." And that I would call a visionary procurement process. They may have a procurement officer helping them, but the usually a program manager that feels they know enough

about the system to get a contract done.

IQT is kind of a merger between that and a VC, so the due diligence is something of a hybrid between the two.

A traditional VC probably spends a whole lot more time analyzing the "big picture" business model than IQT does, because a traditional VC usually has no context for a particular product or particular technology area, so they have to spend a lot more time getting comfortable with it. And IQT does that as well. They will only invest in a company if they understand its business model in depth because it is going after something they understand, or they will go in with another VC that they believe has done that due diligence. And that is good. That is required for their list of "check boxes" they need to complete. The thing they do is different from a traditional VC is that they take a look at the technology from an operational perspective that really only a strategic user, or strategic investor can do. So from that perspective, they would like to be identified with strategic investors like [venture fund deleted] or [venture fund deleted] or somebody who has an application area in mind and who is trying to buy stock. But the way they are different in that, they don't necessarily need, or there is no requirement for them to understand the huge business model. The big picture business model isn't critical for them to understand, but the application of the technology, at least the business fit is a required part of the due diligence, so they spend a lot more time on that.

Interviewer Do you believe that your company has a clear understanding about how your technology fits into the needs of the IC? And has IQT been the one to actually communicate the technical requirements to your company, either by facilitating the communication or bringing you closer with your IC customer?

Company 2 That is a complicated question. Let me try to separate it into pieces. But I'm not sure if I've answered the previous question completely.

They [IQT] also did a bunch of foci and interviewing of the management team – traditional sorts of VC things. I don't know if you want to hear about it.

Interviewer Sure.

Company 2 They spent more than a year performing due diligence on us before they invested.

Interviewer That is quite a long period.

Company 2 The only reason they did that is that I first approached them before they were ready to invest, and I just kept talking to them, so they had 441 days of experience with us before they signed a deal.

Interviewer How did you come to get together with IQT? It sounds as though you sought them out, or did they seek you out, or were you referred by others?

Company 2 Most small companies that succeed put together advisory boards, sort of social networking people that give them advice about how to go about their impossible tasks. A couple of our advisors knew people who worked at either the QIC or IQT and they introduced us, and we started talking. But we were very early stage and IQT was really just getting set up into its current model – around the 2000-01 time frame is when we started talking to them.

Interviewer So it took them well over a year until they were ready to make that investment?

Company 2 Right, right. That's largely because they wanted to conduct more due diligence, and the needed to understand who the heck we were.

Interviewer Going back the other question; let me break it down to make it a little more clear. I think in some ways you've already stated this, but do you believe you understand very clearly what it is that the IC is expecting from your technology? I understand that a lot of the time the actual use is unknown, and that is not something they are willing to share, but does that in any way affect how to go about developing you product or marketing your product to the IC?

Company 2 I can't tell if I would screw up you statistics or not, because we are focused on selling to the IC and petroleum companies, so we have cleared staff. I have a secret clearance, and I'm waiting for a polygraph date. We have people who spend a lot of time working with the Agency and other parts of the IC. I don't know really how to separate our understanding that we got from them from the understanding we got from IQT. I think we really do understand what the IC wants from us

and can get from us, and how best to offer it to them. We've got a bunch of integrator relationships that remind us everyday what we are supposed to be doing, and saying that it guides our development process is a dramatic understatement.

Interviewer And that was going to be my next question, so whatever their requirements are, that does have a huge bearing on how you're going to develop your product. Being the large customer that they are, is that a true statement?

Company 2 Who is "they?"

Interviewer The IC. And I also understand that as you've said, energy is the second facet of your customer base.

Company 2 We basically try to pick those product enhancements that meet both communities' needs as much as possible. And when we come across requirement or product capability to when that is only applicable to one, it gets more scrutiny. Nonetheless, these two communities happen to have a whole lot in common, which is why we chose petroleum as the second place to go because it looks so much like the IC.

Interviewer That is interesting. Would you be able to tell me some ways that IQT has been able to contribute to your company? And the three areas I'm looking at – you don't need to address them all, just the areas that are noteworthy – are in developing your technology, financial backing, or the managerial assistance mode of your operations.

Company 2 They certainly are valuable in all of those. Those are the sort of functional areas where you would expect a VC to be helpful. But they do something else that only a strategic investor can do, and I would put this as their highest "value-add," and really I would put this as a "value-add" to both the community [IC] and the companies. The whole purpose of a strategic investor, the reason wants to be engaged with a strategic investor from either side, is that people in the investment group, the actual humans at IQT, became personally responsible for getting the technology…getting something to happen with the technology in the community. And that single facet is the most important thing. It is the personal responsible of the people at IQT. They have a strong attachment to the people in the community, they feel responsible to the

community, and as soon as they put their name on a company, they feel responsible for the company. In the VC world, and this is a horrible analogy, they call it getting pregnant. So a VC, once they're in a deal is called "pregnant", because they can't get out. I mean the only way they can get their money out is to somehow have enough control over the company to dissolve it and take their money back. So once a VC is invested in a deal, they are called "pregnant". A strategic investor has an incredible responsible to their limited partner, whoever is their host company. So the fact that there are these humans in the middle who feel responsible to both groups is really, really valuable. And everything depends on the quality of those people. They must be really well-connected and shrewd on both sides. They have to thoroughly understand the community. They have to have "been there, done that," and talk about it. [Name deleted] is our liaison at IQT and he worked at [organization deleted], he has tickets coming out of his ears, and he hangs out with us, and he knows us personally, and gets engaged with us. And he does that with all his companies. He is the most valuable person I have met in that community. And he is as IQT. What it does for the community is it makes it so that when we go out there, this fumbling small company, and make errors, which all small companies do, left and right, the community can eventually get a message to [name deleted] and [name deleted] can come to us and say, "Hey guys, what did you do!?" Or it can go the other way and we can say, "Hey [name deleted] look at these guys, they are like elephants and they are trampling us, and he can either tell us how not to get trampled or go ask them to stop." I don't know how the Government can set that up any other way than through IQT.

Interviewer That is very good to know.

Company 2 Well they could actually simplify IQT in some ways, and still have that. In terms of the money put into IQT, some of that could be focused on [name deleted]-like activities. They don't have enough [name deleted], but they have a bunch of other stuff.

Interviewer How has IQT helped your company develop networking opportunities? Or have they? Either with other investors or potential customers? Have they helped with customers outside the IC?

Company 2 Oh yeah. You know there are two parts at IQT. There is the part that [name deleted] is involved with and then there is the VC group. And, it really it is an amazing thing that they are still together. Their goals,

motivations, personalities, and everything else are diametrically opposed. It is a real tribute to everyone there that they managed to stay together and continue to work it out on a day by day basis. So I often think about [name deleted] and his group at the QIC. He is [unintelligible.] He works a lot with the people in the QIC, but he is an IQT employee, not a CIA employee. Those guys are obviously really helpful and interact with the community.

The guys on the other coast, if they know anything about the community, it's because they learned it from somebody like [name deleted]. And what they do is try to help you with all the non-government oriented stuff. And they have done 5 or 6 things that even the best VC would have been hard pressed to do. Three months may go by and they are just listening, and then they will take one action that is really powerful, such as introducing you to someone that is at the top of a major company, and make a meeting happen with that person. Or they may take two companies and help you partner in a way that is strategically useful outside the Government. And they do that better than or at least as good as any other VC out there. Is that the answer you're looking for?

Interviewer Yes, that is the context I was looking for.

Company 2 They'll introduce you to people or they'll drive a strategic relationship that they think should happen. And because they are not necessarily required to get a high return on stock dollars, they can do those introductions and drive those interactions in a way that is higher-minded than often another VC might be able to do. Maybe. You could debate that.

Interviewer Has you company dealt with protecting your IP? And have you been asked to share those with the IC. And if you have, is that an area of concern, and has IQT helped?

Company 2 That is what I was referring to earlier when I talked about Government poaching. I don't want to say that the Government is stupid, but it is really unwise to even ask for that stuff, because it sets them up as a non-normal customer. They are already weird enough. There would have to be some extraordinary circumstance where it would be a good idea for the Government to ask for that kind of proprietary material.

Interviewer Have they asked for it?

Company 2 Not from us, but if they do I know exactly what we'd say. We'd say, "go try and find another one like us." And they'd fail. We'd laugh. There is no way we'd do it. They could hire us to bring our cleared people to come in and set it up for them, and treat us like an equal partner. That would be the equivalent of the Mossad coming over and asking to read what the CIA has in their Syrian database. The CIA would just laugh at them, right?

Interviewer You talked about the importance of the contributions that IQT has made, but are there any that they have made that have added very little or even detracted from what you do?

Company 2 There is only one thing that I can think of. And it is something that should have been really positive; at least we all hoped it would be. I think I've already told you about their attempt to create a contract to help support the Agency. It wasn't well informed by experienced procurement people. So the first contract we created with them, anyone that would read it now with enough context would view it as a failure. We're fixing it. We're able to fix it now because of IQT. But they aren't able to fix it. They've put us in touch with people in the Agency who know how to fix.

So that is certainly not a thing that they should not have done, but everyone can see that there was a way that they could have done it better.

Interviewer And since you've engaged with IQT, do you believe that your company's outlook is stronger, weaker, or about the same?

Company 2 Absolutely stronger. I mean they are incredibly valuable. The only reason that this criticism comes about is that they are not comp'ed by ROI, they are comp'ed by employment in the Agency, but they don't have any procurement staff. It is sort of a paradoxical arrangement.

Interviewer And based on what I heard about them, they do appear to like being lean anyway.

Company 2 I don't think that they should have the staff. They have staff that they don't need because they try to do this. This is what I was talking about with refocusing. They're required to get a work program done in order to do an investment, but there is a catch-22 that I haven't worked through a

procedure for fixing this, but I can point to the problem. The problem is that they are not allowed to invest until they get enough involvement from the customers in the Agency that they know how to create some kind of work program. But the people in the Agency are so hard to reach and their requirements are so hard to get out that the only fair way to set IQT up to do this was to give IQT the ability to design it's own statement of work without an official procurement officer engaged. So they have to set up these SOWs themselves in order meet the requirement to get the technology that is engaged with the customer, but they don't have the ability to do that in the right way. So the catch-22 is you have to make sure that the product is something that the community actually needs, but IQT doesn't have the power. They are not the CIO. They can't direct procurement staff to go in and put a contract together. So they are caught in this weird limbo position where they need one, and they can't make one. So they do the best they can. Perhaps the better solution would be to… If they are trying to be a true strategic investor, they are not a true strategic investor. If they were to be a true strategic investor, they would be comp'ed only on ROI, and they would be forbidden to engage in any relationship between the customer and the company. They have to recuse themselves from any involvement of that kind. But they would be tasked with spending a lot more time networking the company into that community. So they could get rid of all their staff that does the contracts and put there money into the type of activities that [name deleted] does, and try to make the contract happen through official channels. But if the channels are too slow, there would always be a risk of having screw ups, where they go invest in something the community never wants.

Interviewer Does your company have other investment partners other than IQT?

Company 2 We have a bunch of individual investors, and we are two weeks away from closing a round with a bunch of other big VCs, so that will definitely show up on our website, a couple of which are strategic, but from a corporate setting where they are true strategic investors, not like IQT. IF you look at the true strategic investors out there, their charters forbid them from engaging in procurement. So IQT is not really considered a true strategic investor, they are considered a broker that gets stock as their commission.

Interviewer VCs perform a lot of different services. They provide funding, consulting support, management, control systems, things like that. OF all the services that a VC would provide to your company, IQT included, what do you consider the most important to help you company succeed?

Company 2 I have to pick one?

Interviewer No, no. It could be multiple. If you're looking at the services that you would get from a VC, what do you consider the most important?

Company 2 Well, they provide near term liquidity. That is their job #1, to put in enough money so that you can get to a point where you are self sustaining with revenue. Obviously that has to be the critical ingredient.

Interviewer It is. I wasn't trying to lead you to that. There are other services.

Company 2 Sure. They compete. They all have dollars that look identical. They try to differentiate their dollars by showing the humans in a particular firm have some special "value-added," and that is so specific to a particular company and particular stages that you have to make a case by case choice. For us, when we were bringing IQT in, we had a bunch of very interesting investors that were primarily from New York, and they had a very financial background – they didn't have contacts in the community – and IQT brought that. They were a fantastic addition at that point. The typical company taking money from IQT… Looking over their portfolio, they did a lot of investments early on, very broad IT-type investments that have applicability in the community in the sense that the community uses Ethernet. More recently, I've seen a number that maybe are only applicable to the IC. The recently invested in [name deleted] which is a laser-guided, lightning gun. It shoots lightning! It's not something you're going to sell to a whole lot of people. You might not get a whole lot of investors to jump on that, but you can get IQT to jump on it. Does that help answer the question? What was the question again?

Interviewer The term I hear tossed around is "smart money" Lots of people have cash, but in terms of VCs, what is it you look for that can give you the most value when you look for an investment?

Company 2 What could IQT offer?

Interviewer VCs in general. I'm lumping IQT in that group too.

Company 2 I think you have to make a case by case call depending on the stage you're in. But I think you should never investment from people if you don't need near term liquidity. There is no point in taking money from someone if their primary purpose isn't to provide near term liquidity. The problem is that once you take the money, you give them some kind on control interest in you company, and you want to make sure your long-range plans are smartly aligned. Smart money comes much more in the fact that you want them to be smart in the sense they agree with your business plan, and will continue to back and agree with what you're doing with the company. That is more of a "hedging your bets thing" from the company's perspective than a "Gee, it's a fantastic service the VC is providing." You don't want to pick the ones that are going to disagree with your business plan later. Of course all the VCs out there will say that most companies don't succeed until the VC comes in set them right. That might be true for companies that don't have a complete management team, where the VC can help attract top management. But once the management is there, it is the management's job to figure out how to run company, and the VCs are part of the social network. They're pregnant, right? They have a responsibility to help with that. But that is a human thing. There is a human being on the other side of the table, with the VC firm who, based on their personal qualities, they feel personally responsible for having chosen you as an investment. And it is a human case by case thing. You want that particular person to help you. Maybe the rest of the firm is valuable because there is partners like that guy or woman. So the reason you would pick a VC is based on the people. And IQT, [names deleted], those guys are guys we chose, because as humans, they could really help us. Does that help answer the question?

Interviewer Yes. Is there anything that you feel is important that we didn't discuss that you would like to bring up? Something you feel would add value to our discussion?

Company 2 I love IQT. I'm glad the Government did it. I think IQT's job could be made a little easier by the thing we talked about. Somehow we are moving part of the burden in the SOW process, because it forces them to be less than a true strategic investor. The Government may not be set up to do that. I'm certainly not a trained procurement officer. I can only see it from the outside and observe that it is very different from what an oil company might do.

Appendix C: Company 3 Interview

November 19, 2003

Interviewer Prior to your company's relationship with IQT, did your company consider the Government as a potential customer?

Company 3 Not seriously. We had an inkling that the technology that we were developing might be of use in the federal Government, and particularly, frankly, in the IC, but we're based geographically remote from the Beltway; we didn't have any experience in-house developing Government markets and selling to Government agencies. So we really viewed at as something that wasn't feasible for us to pursue.

Interviewer Did you have any concerns about entering into a relationship with them [the Government] such as going through the contracting process?

Company 3 I think we were watchful of our IP, because we had received admonitions and cautionary comments from a few folks, not with respect to IQT in particular, but generally with respects to contracting with the federal Government. You need to careful that your IP remains protected and it doesn't get encumbered beyond you really want to see. Sometimes I guess that can happen, in dealings with certain federal agencies, particularly when the engagement involves some level of additional development of software technology.

Interviewer Since you've entered into a relationship now with IQT, has that in anyway changed your opinion of the federal Government as a customer?

Company 3 I don't think that it has really. It's a market that is now accessible to us, but if I was talking to another small technology start up company off the beaten path and outside the Beltway, I'd probably stay pretty close to my original assessment that the Government is just a different animal, and your commercial experience might not be all that helpful to you. I get approached by companies from time to time with technology that they think would be useful for homeland security tasks and intelligence tasks, and I generally tend to tell them that they are very difficult agencies to penetrate, especially directly.

Interviewer So would you say that IQT has not really affected your opinion of the federal Government? You'd say that it pretty much remains the same?

Company 3 Yeah, I would. It pretty much remains the same. I would also say, fortunately for us, our access to the Government market has changed dramatically, but not my perception of Government itself as a market.

Interviewer Does your company have a contract in place, or a series of contracts in place with the federal Government now?

Company 3 It does.

Interviewer Based on your experiences – and you've probably alluded to that too – would you continue to pursue contracts with the federal Government in the future?

Company 3 Yeah, now we certainly would.

Interviewer Could you describe the valuation process that your company underwent before entering into a relationship with IQT? For example, how would you characterize the due diligence IQT applied to your company, to its technology, its management team, and the financial health?

Company 3 I think that the valuation process and the due diligence process, at least in my experience are two different things. In most places – most venture funds and IQT as well. So by that, I mean to say that I know almost nothing by which the process IQT went to arrive at a valuation, in connection with their investment with [company deleted]. There was some negotiation, but I couldn't tell you about how they arrived at a starting point, and the range that they were willing to talk about the investment in.

Tell me if you're interested in the due diligence processes other than those associated with valuation?

Interviewer Yes. And that is a very good point. I'm actually making a note here to restructure that question after this interview. You wouldn't have been privy to that, but the due diligence that they would have applied to you

when they started looking into an investment, how would you describe what you had to go through during that period? Did it appear to be very thorough?

Company 3 It did appear to be very thorough, but before I go into that, let me back up a half step and say that I think it is not common to have visibility into the valuation process that a VC goes through. So more likely than not, companies that go through a venture financing don't have visibility at that time into how valuation was determined. But at the same time, it is also not uncommon that after financing has been completed to learn something about the valuation. So in the most recent round of venture financing this company did, we did get some visibility into the valuation after the fact. We never did get that visibility with respect to IQT. I just wanted to let you know that you can learn something about what goes into valuation thinking in some cases, and we have in other cases, but not with respect to IQT.

So in connection with the due diligence process, I would say that technically, from a technical due diligence perspective, it was far beyond anything that we've encountered anywhere else, and far beyond what I think would be customary in venture investing. I think that is consistent with IQT's value proposition to other VCs. I think they tell…part of the story they tell to other VCs to get other VCs interested in and comfortable with co investing is that they engage in very, very deep technical due diligence, and that was exactly the case. IQT has access to expertise in the fields they are interested in far beyond the expertise that VCs have access to. There is no comparison between IQT and most VCs when it comes to technical due diligence. At least with respects to the areas they're interested in. If it was some source of e-commerce application, IQT wouldn't be able to do much technical due diligence, because they wouldn't have that expertise at all, but then again, they wouldn't go after that space.

From a business perspective, I would say they were about as thorough as we've encountered elsewhere. Not quite as thorough, but close. I think that the only places where they might have been less thorough…there wasn't quite as much pursuit into customers or customer prospects as we've seen other venture funds do. There was a fair amount of drill-in into our business model and business hypotheses for our commercial business. They take their venture investing tasks seriously, and it is not the case that when they see good technology that they'll invest in it. They really want to be satisfied that there is potentially viable commercial business there as well.

Interviewer But you'd probably say that they focus on technology is what sets them apart?

Company 3 Yeah, I would say that with respect to technology, they due diligence is 9 or 10 on a 10-point scale, with representing average and 10 representing absolute, all out incredible detail. I'd say on the commercial side, their due diligence would be a 4 or 5, about average or maybe a little bit lighter than average in my experience.

Interviewer Do you believe your company has a clear understanding about how you company's technology is going to fit the needs of the IC?

Company 3 Yeah, I think we do.

Interviewer Has IQT communicated those requirements to you, or have they facilitated the communication between you and the eventual Government customers who would be pursuing the technology?

Company 3 Yeah, they've done both. And actually, our situation is not the standard with respect to the typical IQT portfolio company. It's my understanding that since its 5 years since conception that IQT has engaged in north of 50 transactions. Some of those are investment transactions, some of those are follow-ons with the same company, so I don't think that they've invested in 50 companies, but they've done 50 or 60 transactions. I think they've done somewhere in the neighborhood of 25 or 30 pilots, pilot deployments of the technology that they've invested in, and I think that they've had 7 of them actually go into production. So [company deleted] is one of those 7, which means that we've had more interaction with the end-user customer than a lot of other IQT portfolio companies would have. On the other hand, IQT's customer is in a highly, highly sensitive environment, so even though we've had some contact, even that has been measured.

Interviewer Has that relationship with IQT or the Government customer affected how you've marketed or developed your products, or have you been pretty true to what you originally planned?

Company 3 I would say it has affected at a strategic level how we market our products. I'd say primarily because it really opened up a whole other

market for us. We were pursuing the commercial market exclusively, now we have a Government systems group. So clearly there was a strategic impact there. With respect to the product itself, I think that they've affected us at a more tactical level. They helped us understand better how to make our technology and product more useful. They've played the role of a beta customer/partner pretty well.

Interviewer Along those same lines, would you be able to address how they've assisted your company, in such ways as developing you technologies, if they've even done that? Or with financial backing or offering managerial assistance?

Company 3 They definitely have offered on an ongoing basis, assistance on improving the technology and improving the product. And that comes in a more diluted for just over the course of usage. It comes in more concentrated forms whenever we sit down and spec out a SOW, which we've done twice. We've done that in connection with our first investment where we sat down with them and in a very detailed fashion built out what the specifications for the next version of the product would look like. Then that became our deliverable associated with their investment in our company. And then just Feb or March, we did that again and built out very detailed specifications of what the next iteration would be. They have offered and made available more than we've taken advantage of it, help and expertise on the business side in connection with fund raising, business development, business advice. They got some good people and good expertise around those kind of subjects, but at the same time, they are pretty straight forward that that is not the biggest value-added that they bring. The biggest value-added they bring is helping companies perfect their technologies and products. We've probably taken less advantage of the business side and fund raising side then what they offer. We take much less advantage that what we could have. We're fortunate that we've had access to other resources to help us do it. But sometimes I wish we had taken some of their business-side advice earlier. The resources they've made available to us have been quite competent, and I think showed good judgment.

Interviewer Actually your response kind of answered my next question, but I will ask about networking opportunities. Have they been able to help you develop new opportunities, either with other investors or other companies that would be potential customers? Or have these developed into better capabilities for your company?

Company 3 Yes. Let me track through investors, partners, and customers. We haven't gotten much value out of the IQT relationship in terms of networking with other investors. Let me be more specific, in terms of accessing other investors. I think one of the things they try to do is get their portfolio companies introduced to other investors, and they did try to do that with us to. But we already had access to other investors, so we really didn't take them up on that.

Now what they did do, for each of the investors we wanted to work with in more detail, IQT was a fabulous reference point for each of those investors to call. They were able to provide references around the technological uniqueness and the defensibility of the company's technology. The can do that in ways very few people can. So that sort of covers the investor element.

On the partner part of the equation, they've introduced us to several companies that presented partnering opportunities. We've partnered with a couple of those, and we've not partnered with others. The ones that we've partnered with, we have terrific relationships. The ones we haven't partnered with, they weren't off the mark. Not every relationship works out. We'd give them good marks with those sorts of opportunities, helping us partner.

With respects to customers, they have both helped introduce us to other customers in the IC, and they have helped reinforce our own independent efforts to develop customers in the IC. So the in the same way they serve as references in the investment community, they also serve as terrific references for the users in the IC. They haven't introduced us to customer opportunities on the commercial side. But they have been great references for commercial side customers who want to confirm that the company they've never heard of is for real.

Interviewer How did you come to find IQT, or did they find you, or were you referred by other VC groups?

Company 3 Well a little of all of those. Interestingly, we were introduced to IQT way, way back by [venture fund deleted] and had a couple of initial interactions with the, explained what the company was about, introduced them to the technology, demonstrated the capability. But ultimately, nothing came of it at that time. It was probably a year after that that IQT sought us back out. So it appears that in the interim, the very crystallized customer need for them had arisen, and they remembered enough about their interaction with us that they had a sense that we might be able to satisfy that customer need. So we reengaged.

Interviewer You mentioned earlier about IP rights being a big concern of yours, have you had to share any of your IP with your Government customers? And if you've done so, how have you managed to protect it?

Company 3 We've only had to license our technology. So the Government doesn't own any rights in our technology other than the same type of license rights a commercial customer would have.

Interviewer You also talked about what you thought to be the most important contributions. I don't want to put words in your mouth, but it sounded like the technological assistance is what you value the most, is that correct?

Company 3 Actually, no. I would put one ahead of that and that is technological validation. What this company claims to be able to do technologically is difficult for a lot of fairly savvy folks to accept. We've frankly spun our wheels quite a bit. They said they were enthusiastic about what would flow from what we claimed to be able to do, but they didn't believe we could do what we actually claimed, and they just didn't want to spend the time and resources to test drive to see whether or not it was for real. The IQT imprimatur was enormously helpful in overcoming that barrier, and we may not have – given the rough and tumble technology environment and the inaccessibility of venture financing the last couple years – we might not have survived that hurdle if not for IQT's ability to help us clear those hurdles with all kinds of customers and investors.

Interviewer What contributions that IQT has made would you say has added the least value or possibly even detracted from your company?

Company 3 I would say in our case, probably their efforts to introduce us to other investors. And again, I'm not faulting them. It's a critically important thing for other companies, and I'm not faulting they way they did it, because they are competent. It just happened to be the case in our situation, we didn't need that. We had access to a lot of investors, more than we could really manage anyway. And it actually distracting rather than helpful. A minor distraction, but a distraction still. A lot of companies are just dying to get connected with some other investors. In a lot of cases it's a numbers game for venture start ups right now. In a lot of cases you've got to go beat on hundreds of doors. Its not uncommon for venture start ups during the past couple years to meet

with 50 or 100 different venture firms before they get a deal done. And in our case it turned out not to be the case. We talked with a dozen and met with maybe a half dozen. We're fortunate.

Interviewer How would you say your company's outlook is since engaging with IQT? Stronger, weaker, or about the same?

Company 3 I would say it is dramatically stronger. One thing that is important to understand when I answer that question is the condition of the company. When IQT sought us back out after that year window of no contact, we were virtually on deaths door – literally within weeks of having to shut the company down. It made a big, big difference.

Interviewer Does your company have relationships with other VC funds, either private investors, or strategic investors?

Company 3 Yes, I think that we are funded by five other venture funds right now.

Interviewer And you alluded to some of my questions, but there is a couple I'd like to ask. Taking IQT compared to the aggregate grouping of your other VCs, what are the most important contributions a VC in general could make to your company?

Company 3 I'm a bit of cynic. The VC industry has a way of making cynics out of people. Let me come at the answer this way. Someone told me that 5% of VCs add real value beyond their money, 15% do no harm, and the other 80%, along with their money make things worse. And that is not too far off, I think. I think VCs can screw things up. And they do a lot more than they certainly want to admit and more than most people realize. IQT, in my experience, has been part of the "non-screw-you-up-camp" and has added real value. Nobody had asked me this question before. I'd have to say, comparatively, they belong in the group of venture investors companies should want to do business with.

Interviewer Again, this question will probably be restating some of the things you said, but I'll ask anyway. What contributions to your company that IQT makes are more valuable that other VCs, in general?

Company 3 The references and the validation that IQT can give us of a different kind than VC firms. There are a few top tier VC firms whose names are so well respected that the fact they invested in the company can positively influence interactions with partners and customers down the road. But that is a really small pool. IQT can consistently move the ball in interactions with customers. And it is primarily because they are known to be uniquely capable of ferreting out the truly solid, sort of order of magnitude leap-forward technologies that are out there. So if you have their stamp of approval, it says something both to customers and other investors. It says "pay attention to this company. This technology is not fluff. It is something truly unique and truly valuable." That is one.

The other is that they add value in the same way a good beta partner would add value in terms of using the software, pushing it, testing it, and helping you figure out ways to make it more usable and more valuable.

And I also think they add value in terms of high level business advice and guidance. As I said earlier, generally when they've given advice on high level strategic issues, like whether to throttle up your spending, or remain conservative awhile, I think their advice has been offered rather than thrusted, and it's generally been on the mark.

Interviewer Are there contributions IQT makes, again, compared to this aggregate VC group, that don't rise to the same level or are a little bit lacking?

Company 3 I don't think they have the opportunity to network in the employment pool and talent pool like some of the other VCs do. So we went to other VCs especially when we're hiring, and they tend to produce very good candidates for us. They haven't done that for us.

Interviewer Based on what we've discussed, is there anything further you would like to add?

Company 3 Nothing comes to mind.

Appendix D: Company 4 Interview

November 20, 2003

Interviewer Prior to your company's relationship with IQT, did your company consider the Government as a potential customer?

Company 4 Yes. We're out in Washington trying to stir up federal business, and that is when somebody suggested that we know of and interface with IQT.

Interviewer Were you able to enter into a contractual agreement with any federal Government agency prior to that relationship?

Company 4 We think that it would have been inevitable, but in fact, we had not. IQT's relationship preceded any federal contract.

Interviewer Did you have any concerns about entering into any contract with the federal Government?

Company 4 It was very important to us that they technology we developed was part of our standard product and wasn't something proprietary to certain elements of our Government. And we enjoy that with our IQT relationship, everything we develop is part of our standard product.

Interviewer So you haven't had to share any of you IP or anything like that?

Company 4 There is a difference. Let's separate those out. One component is, we didn't build features and make the technology better so that those features would only be enjoyed by one or two or a handful of federal customers. With IQT, everything that we've created with some funding as been to the benefit of all our customers, including corporate America. Part of the arrangement was that one aspect of what was built was available to everyone because it was built with some funds becomes a free feature for the Government. Now it might turn out to be free for everybody, we're not sure, but we built a certain feature that the Government will get for free when they buy the product line.

Interviewer How has your company's opinion of the federal Government changed since you've entered into a relationship with IQT, if in fact that is the case?

Company 4 I'm not sure what you mean by change.

Interviewer Did you have any preconceived notions about what the Government would be like as a customer, whether they would be easy to do business with, difficult to do business with…?

Company 4 Prior to that, as a company, we had "trail guides" who were showing us around Washington and helped us find IQT. And they had warned us it could actually take a couple years to get into the process of being a vendor. So we had the appropriate level of warning, so it didn't come to us as a shock when the Government takes a while to move.

Interviewer But as far as the bureaucracy was involved, you pretty much had an idea what it would be like going in?

Company 4 Yeah, we were warned by everybody about what we were getting into, so no shocks.

Interviewer We covered a lot of things here. But I don't want to put words in your mouth so I'm going to ask, based on your experience with the federal Government to date, will your company continue to pursue contracts with the federal Government n the future?

Company 4 Yes, absolutely.

Interviewer If you could would you be able to describe the due diligence IQT applied to your company from your perspective prior to them entering into a relationship with you. And three areas – and you don't have to talk about all three, just any that are notable – are how they looked at the technology offering, how they looked at the management team, and how they looked at financial health.

Company 4 With regard to the technology, they had their technology team dig into our product. We had to do a series of demonstrations, and we had to disclose the architecture and show them how it worked. So there was a substantial amount of due diligence there.

With regards to financials, we made available to them bank account statements, and we made available to them our sales pipeline, and that was the really important piece, you know, what business do you think is coming. We already had a product; they didn't help us come of nothing.

Interviewer So you had cash flow?

Company 4 Oh Yeah, we were a multi-million dollar business already. We were already in business, but they wanted to understand what the future of our business looked like.

Interviewer Would you say they were investing more in you to promote your technology, than to promote you as a business? Or was there a little of both?

Company 4 No, no. Neither. I think they invested in us because they felt that the capability that we had developed was of substantial value to their mission. I think that was a huge thing. After that, I think it was our ability to execute and be a viable business. I think that would be second. You can ask them about their criteria. But they wouldn't even have looked if it didn't serve their mission.

They met with my management team and we shared with them our business plans, what we were doing, how we were sequencing our priorities.

Interviewer Do you believe that your company has a clear understanding about how you technology is going to fit the needs of the IC?

Company 4 I think I can see I believe our company has an understanding of how our technology is going to fit the needs of a variety of federal customers.

Interviewer Obviously, they are not going to give you the specifics for what they want to use it for, but in terms of you being able to provide them what

they need, that communication has been very fluid?

Company 4 Absolutely. And it turns out there is a lot of corporate analogs to look at and use as examples.

Interviewer Has IQT been involved in that or have they facilitated the communication between you and their clients directly?

Company 4 You're getting into an area that…you know we're talking about our IQT relationship. That is where that ends.

Interviewer OK. I got you.

Company 4 OK.

Interviewer Has your relationship affected how your company has developed or marketed your product offerings?

Company 4 They have, but has mainly been…one of the most valuable (its hard to say most valuable because they've done so much for us) is they've vetted us and made areas of the federal Government comfortable working with us, it's amazing you couldn't get that on your own. You can't be from [city deleted] and show up in Washington and say, "hey, we can make a difference." It's kind of like going in and saying, "hey, do you want to buy a watch?" So that was one.

The other is that as an organization, [name deleted] has helped us become involved with a number of very prestigious Washington think tanks on the subject of national security and privacy. And the quality of these relationships and contributions are priceless. Examples of that are participating in something called the [event deleted] and participating in conferences with CSIS. And the people on them are absolutely amazing. So to be able to sit at the table with these folks and work together is just priceless.

Interviewer So you would say they've done quite a bit helping you network?

Company 4 At a level that is unbelievable.

Interviewer Going back to that too, because I have a question that follows up on networking, have they also helped with networking with other investors or other companies that you found to be valuable?

Company 4 Yes and no. We considered them kind of angel funding or friends and family funding. The kind of relationship we had with them really wasn't kind of the round one with a big VC. We took a small amount of money just to get a relationship going. But we went out and raised a real first round for about $11 million.

Interviewer Did they have a role in that?

Company 4 They participated. They communicated with, and made us look good. Without the IQT relationship, we would not have looked like the right kind of company, to get the valuation we got.

Interviewer So you would say that they offered quite a bit of credibility?

Company 4 Absolutely. After their vetting of us and the kinds of federal relationships that we now have positioned us to get a very nice valuation and raise $11 million.

Interviewer Now as far as the introduction to IQT, did anybody refer you to them, or did anybody refer IQT to you, or did you meet in the middle somehow?

Company 4 One of the "trail guides" in Washington, who was helping show us around and introducing us to people, introduced us to somebody in the area of infrastructure protection, in a White House infrastructure protection group, and they said, "you know, there these folks called IQT and you ought to meet them." And they introduced us, or told us how to reach them. It all expanded from there.

Interviewer So you approached them, and they were interested.

Let's see. How about dealing with protecting your IP? Have they made

you comfortable with what you're doing?

Company 4 Yeah, it's always the area that takes the most careful attention.

Interviewer So they are sensitive to that?

Company 4 And so are we. We are both equally sensitive to that that it turns out to be a main thing to talk about.

Interviewer If you had to say as far as IQT goes, the most important contribution that they have made to you company – it doesn't have to be just one – but if you could single out those that are most important, what types of contributions would those be?

Company 4 They helped us have a higher ability to execute against our mission, which is the movement of higher quality, better product, to more places to include a scalable organization. So the helped us execute on our mission. That is probably the best way to generalize that.

Interviewer Are you able to say how they've done that? You don't have to give specifics?

Company 4 Well, their mission is to get doors open so that we can show up and talk to people and tell them about what we do. They help with that.

We have, sometimes, questions about how the Government works or we need to bring some privacy lawyers together so we can think through how to make sure our technology is responsible. They help create or broker phone conferences or meetings with luminaries in the field of privacy and law. So that is very valuable to us.

Interviewer As far as the contributions they give to your company, are there any that you'd say offer the least value, or possibly even detract from your company?

Company 4 The only comment there is because the IQT relationship is, you know its public (it's a 501.c.3 type of company right? And it's transparent.) So a lot of times we go to get press, the press likes to go out and

sensationalize and try to throw the name CIA around everywhere with our name. Well that is kind of odd.

Interviewer So you actually see that as a drawback?

Company 4 Well, you have to be careful. The media likes to make stories more sensational, so they start articles or newspaper stories that start, "CIA-backed software…" I mean what? Our software came out of the gaming industry.

Interviewer I get what you're saying.

Company 4 Right. So that is the only drawback. But has it been worth it? Absolutely. I mean I'm just picking a minor nit.

Interviewer Well, I think I know the answer to this next question here, but I'm going to ask it anyway. Since engaging with IQT, do you believe your company's outlook to be stronger, weaker, or about the same?

Company 4 An order of magnitude stronger!

Interviewer You mentioned too that you have relationships with other VCs, so the next series of questions what I'm looking is if you'd be willing to compare IQT to other VCs in general.

Company 4 Well IQT is very…the other money that we took in terms of capital was strategic money. But IQT was every bit as strategic as that. So another way of saying that is that another kind of investment IQT made was very strategic. They make deals that serve their mission, and their mission is so closely aligned to our mission which is produce valuable things that make a real difference. When we had the next round of investment, we had learned form our IQT relationship that we wanted to seek out more strategic investors, but IQT was clearly the first, most strategic investor. And they continue to play an active role in that. The deal is done, but the contribution they make is absolutely ongoing.

Interviewer How would you compare the due diligence that IQT applied to your

company to that of other VC have applied to you company?

Company 4 That one I'm not sure I could answer, because my management team did the round of due diligence on the $11 million round, but I was on the IQT round. I would call them comparable, but I just have a superficial understanding on that.

The other thing is, it was probably more complicated, because we had grown, and we had so many more interesting contracts. Like the second with the $11 million, they had to look at the IQT contract. Just the due diligence around that made it a more involved process.

I'd say that the due diligence was at similar levels, if you adjusted for size. Does that make sense?

Interviewer Yes. Another question…VCs in general, and I'm lumping IQT in with this group, if you pick the characteristics or contributions that this entire group could make to your company, what would be the most important?

Company 4 They provide the capital you would need to fulfill the potentiality of ones products. The reason we took the $11 million after IQT is that we wanted our software to have a greater level of stability so that our billion dollar companies would look at us and recognize that we are more stable, and you want to be able to demonstrate that level of stability.

Interviewer So you would say that if you're looking at a VC pool in general, what they are going to give you that is most important is the money to stay in business?

Company 4 That is why we went and got the $11 million.

Interviewer OK, I got you.

Company 4 But not the IQT money. The IQT money is just to have an organization like IQT to tell the Government that you're OK, that hey, they've got good technology. And put their name on it. It's a huge discriminator.

Interviewer I don't want to put words in your mouth here, but what I think that you're saying is that, obviously you need the money, but as far as what

IQT brought to the table…

Company 4 The money was secondary…

Interviewer …they brought so much more.

Company 4 Quite frankly, we would have taken $75K from them. We ended up taking substantially more than that, but we would have done something tiny or less. Anything to get the relationship. To have them on the team with you. There are 6,000 companies that would like to have them on their team, and there is only 1% that got them. And we are only one of the few companies that IQT has funded twice, and that says something to about the quality of out work and the type of team that we have out here.

Interviewer To close this out, is there anything you'd like to add, that we haven't discussed that you think is important to this conversation?

Company 4 They have some really, really bright people over there, and they are genuinely good people. I don't know what else to tell you.

Appendix E: Company 5 Interview

November 26, 2003

Interviewer Prior to your company's relationship with IQT, did your company consider the federal Government as a potential customer?

Company 5 Not in a focused or serious way and not as an initial priority. And by that I mean that IQT's arrival on the scene, and our experience was they found us and sought us out and therefore from our perspective they did sort of arrive at our doorstep caused a series of changes that dramatically accelerated our focus on the federal market. Having said that, IQT's investment in [company deleted] took place and closed about 2 months before 9/11. Since our company's technology is all about [details deleted], the value of that in the Government was something that we suspected, but didn't focus on prior to IQT and 9/11. After 9/11 it is entirely possible that with or without IQT we would have realized the enormous reason to focus on the federal Government marketplace, but we'll never know, because by then, of course, we had engaged.

Interviewer So prior to entering into an agreement with IQT, you hadn't had the Government as a customer at all, not even small contracts?

Company 5 I had initially made a series of calls. I actually had a meeting with the CIO of the CIA independently. But it was an introductory meeting, and never led anywhere nor did we pursue it very vigorously.

Interviewer Did you have concerns about entering into a contract with the federal Government?

Company 5 We did, and we gave it a lot of discussion and a lot of thought. Of course the Government, specifically the IC caused us concerns because we had worked very hard to build credibility of a technology that was private for the users who used it. And we were concerned that, rightly or wrongly, there would be some implication that it would be less than private if we were associated closely with work in the IC. But we found the opposite was true. That we were able to say enough about the relationship to make it clear (and IQT supported us in this) that it was precisely the way the system was designed in the way it compartmentalized users for privacy and security reasons that was attractive to IQT. Therefore we

were able to turn that concern into an advantage.

Interviewer Would you say it was IQT who helped change your perception of Government contracting?

Company 5 Government contracting?

Interviewer No, I'm sorry let me rephrase, Government as a customer in general.

Company 5 Yes. It would be… Yes. The experience of relating to the Government through IQT is completely than relating to the Government directly as a small company. In that sense, yes. They changed our view dramatically.

Interviewer Do you have a contract in place with the federal Government to sell your products?

Company 5 We are listed on GSA schedules, and have a series of projects and a series of agreements that we're working to alone and with subcontractors.

Interviewer So you've actually spread outside just the IC to other Government agencies?

Company 5 Yes, although I don't think we're doing as much outside the IC that we'd like or expect, but it has begun.

Interviewer So based on your experience to date with the Government and IQT, you're going to continue to pursue additional Government customers?

Company 5 Absolutely. I think focus on the Government market is actually built into our company's mission at this point. It is not at all a casual thing. Part of that is because we believe we have something so timely to contribute that is so badly needed and therefore there is a service motivation. But there is also a business motivation that we believe that ultimately the way all agencies, not just within the federal Government, but within state and local, are going to be much more dynamic than they are today. Therefore

this idea that people in any agency need some way to discover the people they ought to be speaking to across an agency boundary and maybe across geography is more and more the way Government is going to need to work. And so we see that as a huge business opportunity for us and we are very focused on it.

Interviewer From your perspective, how would you characterize the due diligence that IQT applied to your company – the technology, the management, and the financial health – prior to making an investment in you?

Company 5 I think it was certainly comparable to other institutional venture investors on the technology dimensions, and it was far more thorough, *far more thorough*, than other institutional venture investors on the technology, the internals of the technology – its design, its concept, its purpose. There was much more engagement on that level.

Interviewer Were you surprised by that?

Company 5 A little, but it was explained pretty clearly that IQT has a shopping list. It goes around and it knows of specific needs of its customers. So in some ways, IQT is a hybrid of a distribution channel and an investment arm. And so you'd expect it would have some characteristics of a customer evaluation, not just a venture investor evaluation. And that is a lot what it was like.

Interviewer Did your company believe it had a clear understanding about how your technology would fit in to the needs of the IC, because you mentioned that they came to you with a shopping list, but did you feel they were able to explain to you how it was going to fit into the big picture so you could make sure that it was a good match?

Company 5 Not really. I think that for the most part, we were probed, but we were not aware of the reasoning behind particular probing. The shopping list, although they have a shopping list, it's opaque. We don't know, except in very general terms, what is on that shopping list. In our particular case, we might have been a little unusual because we were advocating a way of working which was not necessarily on the shopping list. In fact we were suggesting that in the future, intelligence production was going to work differently. So in that sense, unlike a lot of companies, we got engaged in a discussion about some basic fundamentals about the way

people in Government relate to each other and should relate to each other. That almost had elements of a more formal organizational change conversation at some level. So that was off the shopping list a little bit, but I think to IQT's credit, I think they need to advocate on our behalf why some of the things we had would be of interest when they weren't initially understood by the customers. And then later, everyone caught up.

Interviewer Has your relationship with IQT affected how your company has developed or marketed its product offerings?

Company 5 Yes, I think it has. I think the commercial and Government strategies of most companies that are in both markets have come closer together in recent years with or without IQT, for the simple reason that the Government wants to buy COTS. You need to have a thriving commercial business in order to have a viable Government business. But with IQT, I think they helped to accelerate those connections, and helped us quickly evolve a company that has a dual focus on both markets and get that embedded into our own culture and organization.

Interviewer Has IQT helped your company at all develop relationships with other investors or other companies, or others inside the Government? And how have they functioned as a networking tool?

Company 5 They had helped us network into system integrators. They had helped us network into certain Government agencies. I think the greatest help has been sort of the "Good Housekeeping Seal of Approval" you get for being an IQT portfolio company that is working in the IC in some way, because other Government agencies see that as a vetting process that you've been through. With or without a formal introduction, that is valuable as you approach other agencies, even directly.

Interviewer Along the same lines of networking, you had mentioned that the Government had approached you. Do you know how they came to know who you were? Were they referred by someone?

Company 5 I believe I was told at some point, but I don't really remember. My recollection of it is that the phone rang one day, but I don't remember the details. I don't know how they found us.

Interviewer But it wasn't you going to them. Were you even aware of them?

Company 5 I was aware of them, because when they called I was quickly able to get up to speed, but I'm having trouble reconstructing the sequence.

Interviewer You also talked earlier (I think you were alluding to it) about protecting your IP. How have you dealt with that and do you still have concerns about your relationship with IQT and how it caries over to your Government customers?

Company 5 No, I don't. I think they thought about that long and hard before they designed their own business and their own business model. I always had the experience that there was great sensitivity on their part about how they were handling our IP, but the actual contracts and forms and relationships that were involved are not especially onerous in that area. Of course for special custom work that you do, for the Government or for any customer, as a software company, you don't have the expectation that you'll own that IP in general. So with that side, we haven't felt at risk.

Interviewer What would you consider to be some of the most important contributions that IQT has provided to your company?

Company 5 Let's see, I would say access, branding through the vetting effect, networking, and revenue. I'm quite sure that our Government revenue was substantially larger than it would have otherwise been without IQT.

Interviewer Now have they offered any contributions that you consider of little value or may in fact have detracted from your company?

Company 5 In some cases I think the only thing that can be frustrating is that part of their mission can be to insulate us from the underlying customer and be the go-between. And every software company knows that you are far better off the more intimately you know your customer and the more you can understand the problems and needs so that yo9u can figure out how to help them. The only time we felt the crossed purposes with IQT was when they worked to try to provide the firewall function to the ultimate customer, and we had to try and work extra hard to figure out what is going on. Sometimes the communication links get longer and trickier,

but other than that, no. I can't think of anything in particular.

Interviewer So even though you develop a new customer in the Government, IQT will still stay involved in that relationship?

Company 5 It varies. It depends on who the customer is. I don't think that IQT works to prevent us from developing new relationships, so in that sense I think it is mostly additive and mostly constructive.

Interviewer I think you mentioned this quite a bit, but I'll ask you anyway. Since engaging with IQT, do you believe your company's outlook to be stronger, weaker, or about the same?

Company 5 Stronger.

Interviewer And you can attribute that to IQT contributions?

Company 5 Yes.

Interviewer Now does your company have relationships with VC other than IQT?

Company 5 Yes it does.

Interviewer Of all the contributions that a VC could make, what do you consider to be the most important? And are you able to differentiate between the types of contributions a traditional VC makes and those of IQT?

Company 5 I think that other than the money they invest in a company, most people look at the networking that VCs bring as the most important benefits – connecting the management of the company to people in other organizations. IQT is no exception, but the organizations they connect to are more likely to be potential customers and partners than they are other investors or individuals. And that is very useful. So in terms of their overall networking activity and their emphasis on that, I think, of our investors, they are in the top 20% - in terms of the amount of the energy they put into trying to add value to portfolio companies and how much

they resource that.

Interviewer One term I hear being thrown around is “smart money.” When your company was looking for backing then, I guess you weren’t looking your just anyone who could throw dollars at you. You were looking for those that could provide other benefits and not just capital?

Company 5 That is right. IQT certainly falls into that.

Interviewer Well I certainly appreciate you taking the time to talk with me. Is there anything that you feel is important that we haven’t discussed?

Company 5 No. I think you’ve got a good survey.

Appendix F: Company 6 Interview

November 24, 2003

Interviewer Prior to your company's relationship with IQT, did your company consider the Government as a potential customer?

Company 6 That is a very good question. Yes, we considered the federal Government as a potential customer, probably more outside the IC. Certainly we could make, or least conjecture, that the technology would be relevant to the IC, but I think we were more focused on other segments of the federal marketplace. However, how much business were we doing in the federal marketplace prior to IQT? I can honestly say absolutely none. The biggest barrier for us there was just not knowing how to go about accessing that customer segment.

Interviewer So the second question I had, did you have a contract in place to sell a product or service to the federal Government, so obviously that answer would be no.

Company 6 We did not.

Interviewer Did you have concerns, either before or after you met with IQT, about entering into a contract with the federal Government?

Company 6 No I wouldn't say I had concerns. I would say that before working with IQT we were naïve. Concerns are hard to come by, at least from a constructive point. I think the only concern we had about selling to the federal Government as opposed to contracting was anecdotally the sales cycle could be quite long. After working with IQT, I think because we were getting more educated, we became more concerned with issues related to IP and ownership of that IP if something were to be co-developed for our Government customer. I think the same concerns with the sales cycle. Those anecdotes turned out to be true in some cases and less true in others. But it certainly remained a concern.

Interviewer Has IQT done anything to help alleviate those concerns? Obviously you're not as naïve, using your term, as you were. Have they done

anything directly to alleviate those concerns or has it been your own growth?

Company 6 Absolutely they've done things to alleviate those concerns. I mean first of all, they've provided the contracting vehicle with the CIA. That is a huge thing. Getting the attention of some of the systems integrators is difficult as a small company, especially when you're located on the West Coast, where a lot of other small companies, venture companies are located. It's just a difficult thing to get on the radar screen of Northrop Grumman's VC office. And IQT's ability to have their own lab, and have their own staff and understand technology and not just be a VC firm that kind of invests and gives advice, but one that rolls up their sleeves and says, "Here is a project, your technology fits, we're going to be the vehicle to not only bring you in there, but also be the vehicle to have you do additional development. It's really helpful. It's still wrought with problems, just because IP issues remain, but you're not dealing with the end user, the customer, who has zero flexibility. The Government has to live by certain laws and regulations and rules. This is just the way it is done. That is why we set up a GSA schedule, and this is why… We have pathways that you're supposed to go through. With IQT, it's a venture firm. I don't want to say that they make it up as they go along, but they have many more flex points in which case they get things done. And that helps companies like our work within the context of the Government with out having to change the way we do business completely.

Interviewer So do you have a contract in place now with the federal Government?

Company 6 Yes they are. We have several contracts with the IC in particular.

Interviewer And what is your opinion of the process that you had gone through, the contracting process?

Company 6 Some of the contracts we have are with IQT and some are not. I will say the contracts we have IQT, the process we have overall…I'm highly complimentary of them for two reasons: 1) They do a good job bringing the technology in and helping to define how it will plug into the Government system. In other words, they have staff that acts like a systems integrator; they create a SOW, the help interface with the customer, especially with issues that are highly sensitive or confidential. You may not have clearances, but they do, and they can help bridge that

gap. 2) They provide a legal staff and a contracting vehicle, so you're interfacing with a Palo Alto and VC office and you can get access to them. They are very well connected in that they are on email access 24 hours a day and easily reachable by cell phone. They operate like a corporation that is fighting for ROI and trying to scrap savings and efficiencies out of every day, rather than the Government that is an entity that has different pressures. They may not be as interested in moving quickly because there may be politics involved, literally. It's an organization that has a different timeline.

Interviewer From your experiences to date, will you continue to pursue contracts with the Government in the future?

Company 6 Absolutely. The IC is a big part of our business thanks to IQT. [Remaining discussion deleted because it involved detailed discussion about the company and its relationships that would compromise its anonymity]

Interviewer Would you be able to give me your perspective on the due diligence that IQT applied to your company prior to their making an investment?

Company 6 Yeah, first of all, I was very impressed that they found up to begin with. We didn't go seeking them; they actually knocked on our door. And an interesting thing about the way IQT conducts due diligence is that they never invest in a company; at least I've never seen it, where they didn't already have a very specific project inside the Agency that they want to apply the technology to. So their due diligence, unlike due diligence of typical venture funds, is much more focused in the sense that they have a user in mind. And they are interested in making sure that that technology is inserted correctly into the Agency and making sure that technology does what it purports to do in so far as the Agency's needs are met. Now another interesting component of their due diligence that makes them unique is they don't just say, "OK, we want your technology to fit this project." They help understand what the delta is, what you'd need to add in order to fit that bill. And part of their investment is to get you to add that.

Could you hold on a second?

Interviewer Sure

[pause]

Company 6 Sorry about that. So in summary, they are very unique in that they have a project in mind and they don't expect you to fit that project 100%. They expect maybe 85%, but with their investment in you, they expect to bridge that difference by providing funding for a particular development effort.

Interviewer So you'd probably say that the area they focus on the most is the technology above all else.

Company 6 That is a good way of saying it. I would say that the due diligence is very technology heavy and not so much business heavy. I think again, if you have a reasonable business model, which is to say, IQT's priority is not a 10x return on their investment. If they get, this is my sense, if they get their money back or make a little money that is great. So you don't need to have a business plan that convinces them that you can return a 10x. What you need to convince them of is that the technology is stellar, it fits the Governments needs in these areas, and where it doesn't fit the Government needs, it can be made to fit those needs and it is the best choice for them.

I get the sense is that is what is important to them, and that is how they conduct due diligence.

Interviewer Do you think that your company has a clear understanding about how your company's technology will fit the needs of the IC customer? You may not know specifics, but have they been able to communicate to you so that you can be sure that you have the right product?

Company 6 Yes. Here is they way I'd answer that. In the specific, IQT is pretty good about coming to you with a particular problem and helping you, and making you, understand what you technology needs to do to solve that problem.

The challenge for companies is that IQT can't really baby-sit every company the whole day. The challenge for companies is taking the full window of insight into the CIA, and deriving from that a product strategy for the rest of the IC that leverages the strength of your product in those limited opportunities. So they way I'd explain that anecdotally, for us they showed us a couple of models where our technology plugged in and solved the problem, and we had to generalize what that problem really

was before we could go talk to other people with that same problem. And for us, it was a model of understanding that the problem we were solving was an overwhelming volume of information vs. resources of trained personnel that could handle that information. They didn't come to us and say this is the problem. What they said is there is a particular division, and they've got an information system, and it needs this capability, and here is what they are trying to get done. The challenge from that is to take away, what does this really mean for the entire IC?

Interviewer Now this knowledge that they imparted on you, did that change they way you developed or marketed your product offerings, or did you pretty much stay on track?

Company 6 It definitely did. We developed a whole pitch and marketing focus just for the IC. It's the same core technology underneath, but a whole different pitch was necessary because you want you message to really reach your audience, and I think our whole commercial message was that people in the IC would here our message and say, "I think I see how that could be applicable." We wanted them to say, "Yes, that's my problem. Where can I buy it?"

Interviewer Now, in what ways have they contributed to your company. And what I'm looking for here is could you address how they contributed to your company as far as helping develop your technology, financial backing, or managerial assistance?

Company 6 I'll start backwards. As for managerial assistance, they took an advisory role on our board of directors. That has been very helpful. [Name and position deleted] of In-Q-Tel has attended many of our board meetings and provided his own input and own guidance, provided introductions of us to key customer accounts, and all in all, really rolled up his sleeves and got involved. So from a management perspective at least, so far as a board capacity, they were very active.

In so far as financial assistance, obviously they invested in the company and they made three investments in [company name deleted]. And those investments took the form of venture financing as well as dollars to develop additional technologies for the customer. And they held an equity stake as well as simply providing engineering funds in some cases. In return, what they got was a license agreement where they could propagate that technology within the CIA. And that was very helpful, and they certainly contributed to our financial capitalization very

effectively. And also from a financial perspective, I don't know whether this goes in your report or thesis, but IQT has established a little bit of a brand name for itself, and in terms of securing additional rounds of venture financing from other well known venture capitalists, having the blessing of IQT is no small thing. People look at IQT on Sand Hill Rd, at least from my perspective, as a company which is very technology savvy, they have deep connections to a space that is growing right now, and when a VC company sees that IQT has invested in something, the likelihood that they take a meeting and are favorably disposed to believe you when you say your technology is revolutionary, you know is very helpful. It is something we've experienced first hand. So from a financial standpoint, you have the hard dollars that they contribute, but you also have the influence they bring as well.

Finally, I think you asked about technology, I would say they were helpful moving us down paths with our technology that we wouldn't have moved down otherwise, particularly because we didn't understand what was important to the IC. And when they helped us understand that, we did certain things with the product. That influenced our product road map; put it that way.

Interviewer Talking about how they helped network, how they've opened doors for you, have they helped open new marketing opportunities, whether in the commercial market or federal Government markets that didn't exist previously?

Company 6 As I mentioned, the IC to us was blocked, so just in that sense they opened it up to us. Beyond that, I think the challenge to IQT, if I had to be critical, the challenge is they have a lot of companies that get contracts through IQT in the CIA, but those companies can't survive just with companies in the CIA. They have to go and sell the same technology to other intelligence organizations, and beyond that, they have to be commercially successful. And I think that on the commercial side, IQT does not offer very much assistance. Primarily it's an "ad hoc assistance." They are nice guys and a lot of the venture folks come from the commercial world so to the extent that they can help with their own contact network they do, but they don't have a program in place to help companies succeed in the commercial world, you've got to make it on your own there. And in the Government space, I think something that IQT realized after about a year in operation is that so much business is done in the federal world through systems integrators, that if they really wanted to help their portfolio companies get outside of just the CIA and do business elsewhere, they were going to need to help get their companies to hook up with the systems integrators in a deep way. So

recently they started a program to do that. I look at that as an active way they are helping the business development efforts of portfolio companies. That isn't something they always had, so I'd say that they are moving in the right direction of helping people establish more relationship with the federal Government.

Interviewer Also about networking, when you mentioned that they approached you, how did that introduction take place? Do you know how they came to find your company?

Company 6 Honestly, we asked them that, but it took a long time to uncover the real story. We asked them that and they kind of made a joke of it and said, "We're the CIA; we know everything." And the truth of it is what they had was a very specific project inside the CIA. IQT was responsible for bringing in technology to help solve that problem, and they went out looking for companies that could potentially offer something, they heard about us through a few magazine articles that were written. They approached one of our business development staffers who had some conversations, and literally after getting an online demo they flew people out from the Agency and to our office within a week. That is just how it happened.

Interviewer Do you have concerns about protecting your IP, and has IQT helped alleviate any of those fears?

Company 6 Well the tricky part of that is, I guess, when you do development on behalf of a Government agency with public funds, if you will, who owns that? In the commercial world it's a question too, but there are some common practices which kind of conflict with the common practices of the Government world, at least in my perception. When you do commercial services work in the commercial world, and you maybe add on to a product, and you give it to the customer, you sort of own that add on and the customer owns the license to that add on. In the case of the Government, sometimes the concern is when they pay you to do something, they want rights to it. And that anytime you want to sell it to anyone else or do something with it you have to a) ask permission or provide some sort of…you have to license it back. You created it yet you have to license it back from them. That creates some problems, simply because as a software company, a technology company, all you really have is your people and your technology. Is it really worth it to take development money from somebody or is it better to fund it yourself. That kind of calls into question, does the model really work, or

not, for small companies? There are some tricky issues there. I guess without going into all the gory details, IQT has been pretty good about working with us through those issues, and we haven't had an IP related issue with them at all.

Interviewer So you are satisfied?

Company 6 Yes, very satisfied. I do think, though, when it is time o do a contract with them, the IP section takes…it isn't a quick process, let's put it that way.

Interviewer If you had to list the most important contributions they made to your company, what do you think they would be?

Company 6 The most important contribution they made is placing our technology front and center in a high demand market, where the stakes for not using our technology are very high. So they did a great job of catapulting us to a position surrounded by people who had a need, and we were will able to rise above the noise because they invested in us before September 11th. There were thousands of people knocking on the CIA's door after that with new cool stuff to help them with their information overload after September 11th. In both situations, they were able to elevate us to a situation where we got attention. That was a huge contribution. Having IQT as an investor in so far as the IC, homeland defense community, or defense community is an unfair advantage to a company. Above and beyond that is the most important. And the things that fall out of that are amazing as well are the PR. I don't want to underestimate…

[Pause for cell phone disconnect]

I think I was talking about PR. The other thing is that IQT is a very high-profile organization. It's cool. It makes for great articles in the WSJ or Business Week. And unfortunately, September 11th put a lot of people out of business. It also placed a lot of companies in a higher profile. No one likes to capitalize on anyone's misery, especially one like that. But like it or not, we were an IQT investment and that technology was really helpful in fighting a lot of threats around the world. So we were given a lot of press attention. And that helped us significantly in terms of getting [unintelligible] through the door, people finding us and wanting to do business with us.

[Discussion deleted as it turns to very company specific details]

Interviewer Now have they made contributions to your company that have added little value or possibly even detracted from your company?

Company 6 That is a good question. The only thing I would say about IQT that is problematic is that when they sign an agreement with a company, the license they get for that technology is CIA-wide. It is Agency-wide use rights software. The downside of that is – everyone wants to do business with IQT, so when they say that is the conditions for doing business with us, you grudgingly accept it – the downside you realize later, there is no more revenue you can derive from the CIA once you sign those initial contracts. Because for the particular piece of software you sign a contract for, the entire CIA has use rights. And I understand why they do that. I don't necessarily agree with it except in two ways: 1) it helps the…[cell phone breaking up – unintelligible]

Interviewer Overall do you believe you're company's outlook to be stronger, weaker, or about the same?

Company 6 Way stronger.

Interviewer Do you attribute that to IQT contributions?

Company 6 Absolutely. I'd give them 9 ½ stars out of 10. They have been awesome. And I would say they have been good in all three dimensions: as a venture firm, a technology innovator and leader, and as a part of the CIA inserting technology. I can't say enough about how the doors they opened for us have been fantastic. And I believe that a lot of the users of our technology with in the Agency are very happy users, and I've got to think that they are pulling for IQT to. Because we would have never hooked up had it not been for IQT.

Interviewer So you have other venture backing other than IQT, right?

Company 6 Correct.

Interviewer How would you compare how those other firms evaluated you, the due diligence they applied, to hoe IQT did it?

Company 6 I think the big difference is what we talked about before, in the technology. Put it this way, it comes down to, where the money is coming from. VC firms that are out on Sand Hill Rd…[cell phone breaking up – unintelligible]

Company 6 I don't know where I left off in my ramblings. The typical venture firm wants you to become the next Microsoft. That is why they are investing, for the return. IQT's model is different, again they are looking for a return, yes, but if they get their money back, I don't think they'd complain as long as they are hitting their other metrics, which is a very successful technology insertion, and the Agency benefiting from the technology. So in that sense, IQT brings something very different to the table. Other Investors work very well with IQT, but as a strategic partner, more than as a venture investor. And that is to say we didn't look to IQT as a huge source of capital, although they did end up providing substantial capital flow. We looked at them as giving us some equity in exchange for them helping us get to and understand this new market that we can't necessarily tap today. Our primary venture backers we look to for capital and management guidance in making us into a big company.

Interviewer Would you be able that one is more important than another, or do you need all to succeed?

Company 6 It depends on how fortunate you are. If you are fortunate enough not to require outside financing, either you have an established business or can generate cash and our simply looking to grow, or you're personally wealthy and can finance it yourself, obviously the need for venture capital is diminished. Management assistance depends on the circumstances, on whether or not you have the network to bring to bear. I would say IQT is a piece of your strategy; it can't be your whole strategy. IQT provides access to a market; they provide visibility into that market. If I'm selling my product to IBM, it helps if I can say the CIA and IQT are users. But in the end, IBM wants to see that the technology is the right fit for them and it will provide ROI on their purchase. I guess what I'm saying then, which one is more important? I guess it depends on which stage your company is in. And for us, both are critically important. If we hadn't been backed by our venture

partners, we wouldn't be here today. I can honestly say that the likelihood of being here if we weren't financed by IQT is very low as well.

Appendix G: Company 7 Interview

December 4, 2003

Interviewer Prior to your company's relationship with IQT, did your company consider the federal Government as a potential customer?

Company 7 Yes. We had some Government contracts. At the time they had contacted us we had one Government contract since '99. It's a cost sharing type thing, not full cost but half the cost. That's been very helpful for us. We had that and we also had separate, year to year, contracts with [Agency deleted].

Interviewer Did your company have any concerns about entering into any contracts with the Government?

Company 7 Contracts in general with the Government?

Interviewer Let me state it another way, did you have concerns about the Government as a customer?

Company 7 Yes. The concern is that we could never get a good understanding as to whether the business would be there or not from year to year and whether it would be larger or smaller.

Interviewer Has your company's opinion of the Government as a customer changed at all since you've developed a relationship with IQT?

Company 7 Tremendously. Tremendously. And I guess you know that when I think about working with IQT, you know they're funded by a federal agency, that is where their money comes from, so I guess they are a federal agency, but I just consider the working relationship with them to be very different than any other type of working relationship we've had involved with the Government.

Interviewer Are you able to give any examples, such as any actions IQT has done to help change your opinion?

Company 7 They've been very specific about what they wanted to do, and their interests were with respect to whether or not we could do it. They moved very rapidly compared with my experience with Government business in general and also with commercial markets. They move much faster. Plus when we got through with negotiations and signed the deals and started working, along the way they said to us, if you ever need any help…I mean they stated their philosophies…I mean they live this. You've seen their mission statements and so forth. They say that, "our goal in life is to bring leading edge technology to the IC. And that is what they are focused on. And you know we are the receiver of that. I didn't know IQT from the man on the moon until one opt our scientists said we got a call from IQT and they want to talk to us about our [deleted] technology. And I said, "Who is IQT?" They explained it and I said, That is interesting," and I went to their website. And I can tell you, they live what they say in their mission statement. They told us our mission is leading-edge IT for the IC, and they said we know that almost always involves start up or early stage companies, and start up and early stage companies have special needs. We want you know we are doing our utmost to understand those needs and our utmost to respond to those needs. They say, we want you to be a winner, we want to help you be a winner, and we want to participate in that win. That means if they are going to give us a project, they want some warrants, and they want some ownership in the company, so if they can help us become healthier, they can benefit from that. I salute that and I think that is great.

They also, very quickly, say "What we want is a company that is developing technology for the IC and giving us leading edge stuff, but we also want to understand what you think about it for commercial markets. Because we would really like not for you to serve the Government or the IC, but we'd like know you going to become healthy because there are commercial verticals, as they VCs say, where this technology is applicable. And that is almost always, as you know from IT, it's unusual if you develop something for a specific application that has absolutely no applications elsewhere. That is usually not the case. IQT just understands other markets well enough to understand how you technology might fit into it.

So specifics, the time line for putting our deal together, our first real meeting with IQT was September 11 and by early January we had gone through due diligence, and SOW, and development agreements, and we were starting to work. And that is 4 months. That is very rapid compared to either the commercial or Government experience I've seen.

Company 7 That is one thing. The second thing is we, like all early stage companies,

(cont.) we run our business with P&Ls(?), but also with cash statements. We just have to be sure we can meet the payroll and pay the rent. And your business often in early stage companies comes in erratically. You may get a nice big order and get some cash and then you are waiting for the next one. It is not an even, steady state, because you are an early stage company. And they said to us, "If there are any problems that we should know about that we could help you with…" We were asked for and pushed hard on an approval cycle that was 30 days instead of 45 days for a software deliverable and they told us, "We can't do it." They cut some of the deliverable time down, but that was for documentation because they thought that was reasonable for software. They said, "We just can't guarantee you we can do all the things we want to do in 30 days, we need 45 days, but we will approve it as fast as we can." Because we can't invoice until we get it approved. "So we'll go through the approval process as fast as we can, we're not going to take 45 days just because it says it, but if we need it we have it. And then if you have any problems as you go through it, any glitches or anything, it's because you're dealing with new technology; it's not off the shelf stuff. And when you deal with new IT, your scientists will tell you that you can get from A to B, and sometimes they can be close to how long that will take, but sometimes they can't be. They hit a glitch and they have to work it out. And so that is what we said to them, this is R&D stuff. This isn't just adopting plug and play. And they said, "We know that. We'll do our utmost to get it done quicker." And they have approved many deliverables in much less that the allowable approved time. And we had a situation recently where we were getting really tight on cash, and approval was delayed for good reasons, and I had to call someone at IQT who told me "call if there is ever a problem" And I called her and said, "Could you check with this approval because it seems to be taking longer, and we are not getting the type of specificity as to when it will be approved, and I understand the problems that have happened, but I really need approval soon." And right away she said, "[Name deleted], is there a cash pinch?" Right away. And I said, "There isn't, but there could be if it takes much longer. We're OK in another week or two there could be if it takes much longer." And so she got on it right away and within a half a day she said, "It will be approved tomorrow, and the check will be on the way the next day."

Now, Mike, I've felt that in the examples I've given you…

Company 7 (cont.) Oh, and also, another thing that they've done is introduce us to other Government agencies where they think our technology can fit. And good introductions. I mean key people. So our scientists are talking to new scientists about how our technology can be applicable. And they have

also introduced us to portfolio companies where they thing there is a meshing of their technology and our technology. We cut a deal with one of them where we are building an integrated product where [details deleted]. But we are the lynch-pin in this thing, and we cut a deal with this company, [company name deleted]. So those are several tangible examples.

Big time help, Mike. I hope I conveyed that.

Interviewer That is great. That covers a lot of my later questions too, so I hope I don't sound too redundant. But you covered a lot of really good points. I think I know your answer to this question based on your previous response, but I'd like to ask anyway. Based on your experience with the federal Government to date, will you continue to pursue contracts with the federal Government?

Company 7 Now when you say Government, do you mean IQT?

Interviewer No. I mean more of…IQT is funded by the Government, but they are not a Government agency. They are a separate entity.

Company 7 I always treat them as "not the Government." I know that is where their funding comes from, and that is what they have said to us, "Please think of us as a separate entity."

Interviewer Right. But what I'm referring to are the clients whom they represent in the IC. Do you still plan on pursuing additional contracts with them?

Company 7 For example, if DoD came to us with a specific project, would we be interested in it? The answer is, it depends on the project. It depends on its size, and it has fit with the other things we are doing. If it is attractive in terms of size and profitability and if it could help us move forward in a path of technology we want to go ahead on, then yea. But our concerns were always if somebody were to say, "It's a lot of upfront work, and the most we can pay you is $150K." Maybe we make a little bit of money and that, and they can't guarantee any follow-on work, and it doesn't really fit what we are doing, we'd say no.

Interviewer Now you talked earlier about the 4 month process where IQT evaluated you, but would you be able to talk about the due diligence IQT applied to

your company from your perspective?

Company 7 It was extensive. There were two elements to it. The initial program that we did was a proof of concept of the technologies. So that basically said, I'm going to do due diligence. Their first due diligence was their own market research and internal research in the Government. Do you know the application?

Interviewer For [company name deleted]?

Company 7 Yes.

Interviewer I was looking through your website before this interview, but to be honest with you, I'm going to say no.

[Discussion on the product offering deleted.]

Company 7 [Returning to conversation on due diligence] OK, so the first was a proof of concept. And after they did their due diligence in the Government and in private enterprise to determine the people that can do this type of technology, and they told us that their due diligence led them clearly to us. And so they said, "We want to talk to you about doing a business deal together, and the first deal could be as large as [deleted], but first we need to do a proof of concept. Are you guys interested?" And we said, "Sure we'd love to. It's a very important area of technology that we love. So let's do it."

So then we entered into the business negotiations. And that is when you get everything that involves the SOW, the development agreement, all the thing that describe very specifically all the things we are going to do in terms of technology, but also what are business relationship will be and everything in terms of what your ownership likes, the citizenship of your people, your financials, it was a very extensive due diligence and much more than I would have though for a deal that at that time wasn't much more than [dollar value deleted]. But we fought, and ultimately they told us they wanted to do the due diligence then because if we passed muster and passed the concept, then they wouldn't have to do heavy due diligence at that point and then maybe get a nasty surprise, or whatever. So it was a very extensive business due diligence as well as a very extensive technical due diligence. I'm telling you it was due diligence as if they were going to buy us. It was very extensive by a

bunch of pros. Our lawyers and their lawyers (we don't have in house lawyers, but we have a real good corporate attorney that we use) and we worked hard on the deal. And it took a long time to get to a deal that we thought was reasonable and they thought was reasonable.

Interviewer Do you believe that your company has a clear understanding about how your technology is going to fit the needs of your Government customers?

Company 7 Yes.

Interviewer So that has been made clear? Obviously not specifics, but…

Company 7 No, no. They are very careful about that, but they work hard to describe what they want the technology to do. [Technology details deleted]

Interviewer Now has that affected the way you've developed or marketed your product?

Company 7 Yes. It accelerates the development. And we are working hard to identify commercial markets that this technology can be useful for. And we think there is at least one. [Discussion of the market and how the technology applies deleted].

Interviewer Another thing that you touched on earlier is the networking the provided for you. Do you know how IQT found you? Did that ever come up?

Company 7 Yes. Due diligence. They set out within the Government to say, whom do you know that can handle [description of problem area and technology deleted]. We had already done some work in the past and had established a track record in Government work and in work we had done on our own. And the conclusion they came to after talking with some in the Government and two outside consultants, they were told one company's name and that was ours. I understand this, because the only competition we have in this area is a foreign company and they are not even close.

Interviewer Do you believe that all this networking IQT has done, has it provided a

lot of new opportunities for your company that you believe are valuable?

Company 7 Both dimensions: the other company and other agencies. And I should mention that there is an important difference, and this is the way IQT set it up and I applaud it. It makes it so different for a company like ours that we can work with IQT, develop something specifically for their customer, their customer gets a royalty-free license (to use, it not to sell it) and we are free to sell it to other Government agencies, but we can charge for it. They don't have automatic use of it. All we have to do is make sure they get most favored nation pricing which they get.

But that is important because my understanding is that if you really develop something in conjunction with Government agencies, what happens is that the Government has a royalty free license any place which I really think is harmful to the Government. I mean it's nice to save them money, but it is a disincentive.

Interviewer Now did you have concerns about protecting your IP

Company 7 Absolutely.

Interviewer Are you satisfied with the steps that they've taken or is that still a concern of yours?

Company 7 Well, the contracts (and they explained that they are contracts that they have to use) that they can go to a certain point, but they can't absolutely tell use that the CIA is not going to do something. It's that type of thing. I'd have to go back to the contract details, but they basically said that's what we have to the letter in the contract. They are not in the business of selling software, so they are not going to do it. But it is that type of thing, Mike. We ended up sufficiently satisfied that we felt it is OK. Would I write the contracts a little differently if I could? Yes. Has it prevented us from doing business? No. Was it a source of negotiation? Yes. Have they changed some of the clauses in ways they felt they could change them? Yes. We negotiated and ended up with something that we felt is OK.

Interviewer What would you consider to be the most important contributions that IQT has made to your company?

Company 7 Helping support a breakthrough technology in ways that help us develop that technology further and better. And it helps them and their customers, and it helps us and our company because we can see it going into a lot of other opportunities in Government as well as the commercial market. They really helped that process. They greatly enhanced that process.

Interviewer Have they made any contributions that you believe have added little value or maybe even detracted from your company?

Company 7 No. I don't think so. I mean you get in the midst of negotiation and with it could go a little faster, but again you look at it in retrospect and say that is the fastest deal we've cut.

Interviewer Since engaging with IQT, how would you describe your company's outlook? Is it stronger, weaker, or about the same?

Company 7 Stronger. Definitely stronger. Stronger without a doubt.

Interviewer Do you have any relationships with other VCs?

Company 7 No. We talk to VCs, but we have not other deals with other VCs in place.

Interviewer OK. That was going to be my next series of questions that talked about comparisons with other VCs.

Appendix H: Company 8 Interview

January 20, 2004

Interviewer What I'm looking at today is that I want to talk about your company's relationship with IQT and the federal Government as a customer. I'll begin with the federal Government as a customer. Prior to your company's relationship with IQT, did your company consider the federal Government as a potential customer?

Company 8 We actually had done a couple of small opportunities with the federal Government prior to IQT showing interest in the organization.

Interviewer Had you entered into any contracts?

Company 8 Yes.

Interviewer OK, so you did, and they were a customer.

Company 8 Yes.

Interviewer Did you have any concerns about that, as far as the contracting process, or the Government as a customer?

Company 8 In what way?

Interviewer Were you concerned at all about protecting your IP rights, or maybe some of the bureaucracy, contracts, some of the management of those contracts? Did that play into your decision on whether or not to go with the Government as a customer?

Company 8 I've been dealing with the federal Government for a long time and I've been dealing with start up companies who wanted to get into the federal Government for a long time, and that is always a concern of any company who is not familiar with doing business with the federal

Government. The talk out there – and it is not unwarranted – is that it takes a long time to do business with the federal Government, it takes a lot of bureaucracy to go through, you have to do special things in terms of procurement like GSA schedules, etc. And it takes a lot of commitment on the part of any organization who wants to do business with the federal Government. In the case of my company, probably about 9 months to a year after the first contract, they decided to actually concentrate on the federal Government business and they hired me at that point in time given my background to try to go after and energize the federal Government business.

Interviewer And I pretty much know your answer based on you responses, but I'll ask anyway, are you going to continue to pursue them as a customer in the future?

Company 8 Yes.

Interviewer Were you involved at all as far as when IQT came on board? Do you understand the due diligence that they applied to your company, at least from your perspective? How did you perceive the due diligence when the came on, looking at the technology offerings, financial health, and the management team?

Company 8 In what way are you asking the question?

Interviewer What I'm looking for is the level of due diligence they applied to your company prior to making an investment. Obviously a lot of this you wouldn't know because they are taking an outside look at you, but the things you had to go through to assist them with the process, how would you characterize the review they did when they looked at the technology offering, the management team, and financial health?

Company 8 They were really thorough. We are actually going through a similar one right now where they are looking at making another investment and they are going through as much if not more than they had previously. They are really thorough. They are similar to what any VC goes through before they make an investment in an organization, and in their case it is probably more so because they are actually looking at the technology as well as just making a financial investment, so in our case, they not only looked at us for the financial viability of making an investment, but also

the technical viability of how this might fit in with the CIA and other charter organizations they do business with.

Interviewer What about the financial health and management team? Did they put a lot of emphasis on that?

Company 8 To some extent they did. It wasn't as much of a problem, because at the time we had just raised $[deleted]. So the financial health of an organization that has just raised $[deleted] is [laughter, but the implication is that financial health is very strong]. So sure they did due diligence, but… And to this day they still get quarterly statements of what we're doing and how we're doing, etc. It is the same as any VC would do, they did the same thing.

Interviewer Do you believe that your company has a clear understanding about how your technology is going to fit the needs of the IC? Obviously you wouldn't have specifics on the actual application, but in terms of the requirements, do you feel like you are pretty much aware of where that is going?

Company 8 Probably more so today than we were a year and a half or two years ago when IQT first came to us. Obviously we had the benefit of use of [our technology] in the IC to date, so we probably know more now that we did when we went in to the agreement.

Interviewer Has IQT played an active role in that, or have they facilitated…

Company 8 They have been more of facilitators. Since they obviously not the actual users, they seem to moderate the meetings between the IC. And they are almost in every meeting that we have with the agency?

Interviewer So they are actively involved?

Company 8 Yes. I guess based on your work right now you probably realize that IQT is made up of really two different organizations, a venture organization and a technical organization. Once the venture organization has determined that they are willing to make an investment in an organization the technical people also take over. And they are actually

the ones that after an investment is made that assign a person who is in charge of the portfolio company to make sure the interaction between the IC and us is there.

Interviewer Has your relationship with IQT affected how you've developed or marketed product offerings?

Company 8 Not directly. It has actually been more their customer that has had an influence on how we've developed our product.

Interviewer So you take those inputs. So by being in a relationship with them, even though they may not be the ones driving them [development requirements] it has affected how you've developed then?

Company 8 Yes.

Interviewer Is there any carryover to the commercial segment?

Company 8 There has been little to date; however, I believe that with this next set of requirements that IQT is looking at there might be some carryover to the commercial organizations. But I would say about 90% of what we have done for the IQT customer set does not have immediate applicability in the commercial market.

Interviewer If you were to talk about some of the contributions that IQT has made to your company, could you list some that you feel are the most important?

Company 8 Besides the money?

Interviewer Sure. Anything.

Company 8 Well they have actually helped us to get into areas, particularly in the IC, that we might not have had interest before. And because we are an IQT portfolio company, that gives us visibility to other organizations, both commercial organizations who might want to business with us or partner with us because we are an IQT portfolio company as well as it gives you

a nice lead in when you call and say you are an IQT portfolio company, because everyone has heard within the federal Government of IQT. So it's helped us get more easily into the door of some organizations where as a small start up company might not have had that opportunity to do so. Additionally, IQT does do a lot of marketing, and as result they bring that marketing a long to the portfolio companies. As they do marketing, we benefit from what they are doing and are getting additional leads and other opportunities that might not have been available to us.

Interviewer And your first point, when you mentioned money, just so I understand, that was obviously an important contribution too, right?

Company 8 Yes, exactly.

Interviewer You did talk about this in your previous response when you talked about networking they've done as far as bringing credibility, but have they also helped network and build other opportunities with other investors or companies.

Company 8 Companies inside the portfolio, or outside?

Interviewer Inside or outside, basically any advantaged you would have gained.

Company 8 Because they have a number of portfolio companies with different technologies, we share the opportunity, as I would imagine other portfolio companies do, of being able to look at those other portfolio companies for potential partnerships to see if there is a nice synergy. Outside of the portfolio companies, again getting back to the fact that we are a portfolio, kind of gives us a better visibility into other technologies because of the nature of the fact that we do business with IQT and the IC, those other technologies that might not be portfolio companies will be more likely to come to us and say, "Hey can we also be a partner or help do business with you also."

Interviewer Now would you be able to say…I don't know if you remember or whether you were involved or not, but do you know how IQT came to find you?

Company 8 I don't know since I was not with the company at that time.

Interviewer Would you be able to talk a little bit about how they have helped protect you IP rights? Are you satisfied, at least as much as any other customer, that the have taken steps to help avoid them being compromised?

Company 8 I think less so with IQT that working directly with the federal Government.

Interviewer How so?

Company 8 I think just based on the fact that they are trying to protect, again I don't know the motivation behind it, but maybe because they are trying to protect their customer. I just don't feel that some of the language that they want a portfolio company to sign up to tends to protect the IP as much a going directly through a GSA schedule would do. I think they demand a lot more from the relationship.

Interviewer Is it at a level you are comfortable with?

Company 8 Yes, because we refuse to sign up to some of the things they would want us to sign up to.

Interviewer So the discussion goes both ways then?

Company 8 Yes.

Interviewer I asked about some of the important contributions that you feel IQT has made to your company, but have there been any that they make that add little value or could possibly even detract from your company?

Company 8 Well, it wouldn't be a contribution…[laughter]

Interviewer Sometimes people think they are helping out when they really aren't.

Company 8 Exactly.

Interviewer Are there things that they are doing that you wish they didn't, or maybe they could otherwise improve what they are trying to do to improve the overall effect?

Company 8 You know they are trying to do their job; I'll just leave it at that. They are trying to protect their customer. And unlike dealing with… It is a kind of odd situation IQT is in. Because they are not only a venture firm, just like you'd go to any other VC to get money. So it is not only an investment that they are trying to do, but they are also trying to buy technology for use in the IC, so they are in this odd little situation. The have many masters. So as a result, they are trying to satisfy many aspects of their charter. Sometimes it works, and sometimes it doesn't. So they are doing the very best they can based on what their charter is.

Interviewer So nothing specific?

Company 8 No.

Interviewer Since engaging with IQT, do you believe your company's outlook to be stronger, weaker, or about the same?

Company 8 About the same. Slightly stronger, but about the same.

Interviewer You thought that you were pretty much on track prior to them coming on board.

Company 8 Obviously any small start up company does not want to be heavily invested in the federal Government, because that doesn't do well for any commercial company. So it hasn't helped the commercial business, really, at all, but it has helped drive the federal business.

Interviewer So the federal business is just a small portion of your revenue?

Company 8 That is correct.

Interviewer Your company does have relationships with other VCs?

Company 8 Yes.

Interviewer How would you compare the due diligence that IQT applied to other VCs in general? Obviously everyone has different strengths and weaknesses, but in general terms, how would they compare?

Company 8 Since I was not involved with the other VC investments, I can't speak to that directly, but I will go back to the fact that it is different because they are not only looking at investment in the company, but also the licenses for the agency, whereas the other VCs are looking to put money in a company may do some due diligence in to the technology, but not necessarily to use the technology themselves.

Interviewer I have a final question that I would like to close with. Based on our discussion, do you feel that there is anything that I didn't bring up that you feel is important to the conversation?

Company 8 I think any company who does business with IQT or the federal Government in general really needs to have some knowledge of how the federal Government works on order to be successful. I don't know enough about how some of the other IQT portfolio companies are doing in the federal Government, but my experience in the past has been that it is all well and good to get an investment from a company like IQT to get you started in the federal Government and the IC, but unless you follow that up with knowledge about how to do business with the federal Government along with the challenges you are going to face as well as how you are going to overcome those challenges you are not going to be successful in the long term doing business with the federal Government in the long term.

Appendix I: Company 9 Interview

December 11, 2003

Interviewer Prior to your company's relationship with IQT, did your company consider the federal Government as a potential customer?

Company 9 Yes, we did.

Interviewer Now did you have any contracts in place with them to provide any of your products?

Company 9 Yes we did.

Interviewer So you had already had contracts and viewed the Government as a customer before IQT approached you.

Company 9 Yes.

Interviewer Did you have any concerns about the contracting process or dealing with the Government before IQT…?

Company 9 Mike, the only thing I can tell you is that I have dealt with Government for 15 or 20 years across multiple companies, and it's a slow process, it's a [unintelligible] process, for good reasons, it's [unintelligible] process to make sure everyone gets an equal opportunity to fair trade or whatever. But, you know, I'm used to it. And frankly over the past few years, I've seen the process getting faster and better. But I was very much used to working on large contracts across various parts of Government.

Interviewer Now have you noticed that since your relationship with IQT that your opinion of the federal Government or its contracting process has changed at all?

Company 9 IQT is a very creative thing for Government to do. Because typical Government process could be so lengthy, so bureaucratic, and so prohibitive to relatively small-sized companies. Because these

companies have no visibility, or clout, so to speak, to be a significant party in their contracts. Yet some of the smaller, early-stage companies may have cutting-edge, leading-edge, breakthrough technologies that Government needs sooner than later. What I think these guys have done is start to locate some of these companies early on and bypass this huge process by going and investing in them and giving them a back-door entry into the Agency. So at least the Agency can be testing, can be looking at these technologies [unintelligible] Government being commercial. So I think that is very creative on the Government's part to make sure that the Government is not always getting obsolete technology.

Interviewer So I guess based on your experience, you'll continue to pursue contracts with the Government in the future, correct?

Company 9 Absolutely.

Interviewer The next part of this, I'd like to talk about how IQT has served as a venture catalyst for the Government. This is basically from your perspective about how that has worked. Would you be able to describe the due diligence, again from your perspective, that they applied to your company, looking at your technology, your management team, and your finances, before they actually entered into a relationship with you?

Company 9 The word is expensive; painful.

Interviewer How so?

Company 9 Well they are not like a typical Government organization; they are like entrepreneurs who have been in the commercial world who are very savvy about the businesses. And these people really get in your shorts about your business, about your customers, about your finances. Stuff like that. I remember going to the technical due diligence with these guys, a bunch of PhD' sitting in my office for two or thre deleted]. But we are the lynch-pin in this thing, and we cut a deal with this company, [company name deleted]. So those are several tangible examples.

e months asking questions that no commercial customer, even Fortune 500 customers had asked us, about architecture, about scalability, about affordability, about language platform, about language independence. The stuff that many people wouldn't even know how to ask. I can tell

you this because we came through that. If we didn't come through, I probably would be holding a negative opinion. It's like winning the race. When you win the race, you realize how tough it was and you enjoy that. But if you lose it, you say it was way too tough for this age group. So its one of those, but, frankly the process is…I can tell you it is due diligence, process, speed, and [unintelligible] negotiation. It was probably better than many VC firms. So I have a lot of respect for these people. They take Government money very seriously. Unlike many other Government organizations. They really take it seriously. Sometimes they are tougher than a commercial VC.

Interviewer Does your company have a clear understanding about how your technology is going to fit the needs of the IC? Obviously you won't have specifics, but do you feel that you have the right product to fit the needs they are looking for?

Company 9 I would say so. Mike, this is an evolving field. And frankly, they met with us 2 ½ or 2 years ago, OK. But please understand that things change dramatically on their side and my side. We come up with new products, and they come up with new challenges. So I won't say that what we envision is exactly what we are going to do, because that wouldn't be fair. But I can tell you at any stage we had really good support from IQT and the QIC. The QIC is like an interface with IQT – IQT vision into Agency-specific needs. While IQT is looking forward, the QIC is making sure the immediate and existing needs of the Agency are being incorporated fully. And all investments that IQT is making are utilized within the Agency for solving specific problems. So the partnership that the QIC and IQT, at least in our case, but I believe that with many of the portfolio companies, that our software is utilized to solve a specific problem. Because there is nothing worse that you could do to a small software company, that by investing in them, by telling them that you need to go down this path, and then not signing a user. So if you do that all you're basically doing is taking a year of opportunity time from me. And that is pretty expensive. Opportunity costs are my most expensive costs.

Interviewer So has your relationship with IQT affected how you have developed or marketed your product offerings?

Company 9 I wouldn't say marketed, but I would say developed.

Interviewer So it has affected how you've developed it then.

Company 9 Right. I would say it has affected how we have marketed to the Government, not necessarily the commercial sector.

Interviewer Could you talk about some things that IQT has contributed to your company?

Company 9 Yes. IQT has helped us in three or four tangible things. One is to help us understand the evolving Government need. Specifically from the IC. And certainly we have a much better perspective, obviously they can't share the details with us, but we have a much better perspective than we would have had otherwise. So it has shaped our product to be a really good shape.

The second one is introductions within the Agency and other affiliated organizations. Absolutely invaluable. Because in a small company, if somebody takes you to those organizations, even if they don't endorse it, even if they merely introduce you, that work is very important as you can imagine.

The third aspect where they have helped out, which is really unusual for a Government organization to do is to help us in a number of commercial partnerships. Our relationship with companies like [names deleted] frankly happened because of IQT. They introduced us. And I think that that is also very, very valuable contributions.

So three things: helping us understand the need; helping us with Government agencies and organizations; and also helping us with the commercial side.

Interviewer Do you remember how you can into touch with IQT? Did they approach you, did you seek them out, or did a third party bring you together?

Company 9 The CIA was our customer and was using our desktop products. So the CIA wanted to get an enterprise, web server based version of our product, which obviously would have required some sort of upgrade. And this sort of thing was not a priority for us. They said we need this badly, so we can introduce this organization, that potentially can help you with some funding to get this job done. And that is how IQT entered the picture, via the Agency.

Interviewer Is your company concerned at all about protecting your IP? Has that ever been an issue during over the course of your relationship? And if so, are you satisfied with how they handled it?

Company 9 Yes, for the most part. We've never had any issues, but sometimes it [unintelligible]. But frankly they are just trying to do a good deal for the Government. It's just a business issue. As long as they have the license to get things done, it's not an issue for us. Sometimes the language is very overwhelming for a small company, but once you've been around the block a few times, and having worked with them, you know they are not out there to harm us or make us lose money, they just want to make a good deal for the Government. But it is nothing alarming. Sometimes, it is a little worrisome, but nothing alarming.

Interviewer Another question, you talked about the important contributions they've done, but has there been anything that has maybe added very little value or possibly even detracted?

Company 9 I wouldn't say detracted in any case. They have never done anything to harm or hurt us. I would say that a couple of contracts, they were extremely slow in execution. And that turned me…I put too many resources to get small [unintelligible]. And I [unintelligible]. The IQT, and QIC are sort of slow a couple times, and for that amount of time and for that amount of money. So I had to politely scream [unintelligible]. So I guess that is probably about it.

Interviewer So if you were to characterize your company's outlook since engaging with IQT, would you say it is stronger, weaker, or about the same?

Company 9 Absolutely stronger. Yes definitely I would do more and more with them. They really have good vision and they have a really good agenda. There are just way too many technologies to really understand them all and put your arms around them. There are a lot of opportunities out there. I think that it is a good thing that they are doing. They have helped me in a very tangible fashion. They added value. I just want to get more. I don't think that they have gotten enough from what we do. They given us a [value deleted] dollars the last few years, but I think we could hit [value deleted] dollars with their help.

Interviewer Now does your company have any other relationships with VCs? Do you have other forms of backing?

Company 9 Yes we have a huge VC. IQT is on of our smallest sources of VC. We have [VC name deleted] who have just invested [value deleted] in our company. We have [VC name deleted] which is a huge investor. [VC name deleted], a huge investor. We have [VC names deleted].

Interviewer How would you compare, and you touched on it earlier when you compared the due diligence that IQT applied to your firm…

Company 9 IQT is probably not even in the top 10 of my investors in terms of size, but they are better than almost anybody else in due diligence, and frankly adding as much value as my most active investors. So that says a lot. I don't know about other company's – and again, I don't think we got as much as we should have from IQT, because our technology could really change the way Government works – but in all fairness to them, the have definitely help us, a lot more than any of the standard VCs would do.

Interviewer Now when you look at a VC group, whether it is private or a corporate VC group, what is it you are looking for from them? Obviously, capital, but what is important to you?

Company 9 Two things, OK. We really look for two things: experience they have of running businesses our size and what they can add to us; and we look for their connections. Who are they connected to? Where can they introduce us? And how they can bring us to do new partnerships, new deals, and new customers. We look for only two things besides money.

Interviewer So using those criteria, that is why you say that IQT ranks very high?

Company 9 Right. If you look at [names deleted] these guys have done it! So they are very experienced. They have connections in Menlo Park and Washington, DC. And Menlo Park, as you know, is the nucleus of the high-tech capital of the world. So being in Menlo Park and being in Washington, DC, they have the connections that one would aspire to be part of their network. And again, I want ten times more than I have gotten, because I don't think that they have leveraged us fully. But the certainly have all the ingredients: desire, intention, they are very non-

political people to deal with. They are sincere, honest, and they are smart. It is nice to work with a group of people like that.

I have nothing but positive things to say. I want them to do more. I want them to realize more and more what we do. But it is a very complex technology. But all in all, I'm not saying any of this to hurt them or to help them. I don't get any benefit from this, but I don't care if I say something that not so positive, but I'm being truthful. All in all, I must say they are one of the few groups affiliated with the Government that I've been impressed with in my whole life.

Interviewer That wraps up the questions that I had, but before I close, I wanted to give you an opportunity. Is there anything that is important that I didn't ask you that you'd like to discuss?

Company 9 No. [Discussion continues, but the focus turns away form this thesis effort]

Appendix J: Company 10 Interview

December 11, 2003

Interviewer Prior to your company's relationship with IQT, did you consider the Government as a potential customer?

Company 10 Yes. Absolutely. Do you want any background on that?

Interviewer Sure.

Company 10 We actually put our first dedicated sales rep focused on the federal government sector in August of 2001. To be really specific, we targeted the defense intelligence and law enforcement sectors, and we have a couple of small projects on the civilian side. And we may look more to that [the government sector] this year. That was part of a vision based on, one, our solutions were very well targeted for that community of users; and secondly, we were in a deepening technology recession. And as they say about Government, they print the money. Right? So if you've got a solution that they want, they usually find a way to get it. So it was a little bit of survival and a little bit of market proactivity. It turns out to have been very beneficial for us in that regard, and probably led ultimately to IQT's interest in us, because we have a number of deployed projects in a number of different operational commands and agencies. As you can appreciate, these folks [IC] see what other folks are using or doing – there is a bit of word of mouth – and I think that helped get us on IQT's radar screen.

Interviewer So prior to your relationship with IQT, you actually had contracts in place with the federal Government?

Company 10 In fact, our relationship with IQT was done over the course of this last summer. And we did something like $3 million worth of business last year [with the federal government]. I remember in January of this year, we put out a press release that recapped some of the successes that we had in the Government sector in 2002.

Interviewer Did your company have any concerns about entering into a contractual relationship with the federal Government?

Company 10 Not with the Government. No.

Interviewer So that wasn't an issue then?

Company 10 No.

Interviewer Has your opinion of the federal Government changed since your company has entered into a relationship with IQT?

Company 10 No. It is a good customer for us. For a company our size, we enjoy good [market] penetration and exposure. And we're going to try to continue to grow that.

Back to an earlier point, if I may, about "were we in the market?" I don't know if you can still track this down or not, but we actually had some coverage early in the year up to and including our CEO and one of our lead VCs in a segment on the PBS News Hour with Jim Lehrer that talked about our participation in activities related to the war on terrorism and the Iraq War in particular. At least that was the framework and context for it. So again, it is a segment [Government] we've been in, and we've had good success there.

Interviewer I guess it safe to assume that based on your experience, you're going to continue to pursue contracts with the Government in the future?

Company 10 Absolutely.

Interviewer In the next series of questions I'm going to talk a little bit – or ask a little bit – about how you perceive your relationship with IQT and about how they've added value (or in some cases if they haven't added value) to what it is that you do.

Would you be able to describe, from your perspective, the due diligence

that IQT applied to your company before they made an investment?

Company 10 I can, but probably not at an in-depth level. I'm presuming you've interviewed them [IQT] as well, or will. They do two levels of due diligence. One is the normal, "is this a good, solid investment to make?" kind of due diligence that any VC would do. And I'll just tell you that the level of due diligence these days is quite high. So that [due diligence] goes into looking at all aspects of the business. And there is nothing that I recall IQT looking at that was any different than what any other VC would do, and we deal with VCs all the time. I think that was pretty much expected and as thorough as it would need to be.

The other level of due diligence that they needed – they have a sponsoring agency and that sponsoring agency becomes a customer for the products and technologies that are accessed through the relationship with IQT – so they need a "use case" or "business case" confirmation. That is a level of due diligence and a requirement that you don't normally get in a VC relationship. So for example, with IQT deals there are product and technology deliverables that they call out. So you need to go in and work out the statements of works, delivery, and what-not. That is over and above what a pure financing VC would look to do. Does that answer the question?

Interviewer Yes. That is kind of what I was looking for there. Now would you say your company has a clear understanding about how your technology is going to fit the needs of the IC?

Company 10 I think as clear as you can have given that we have nobody cleared to actually sit with the using analyst and see how they're really using it [our product] and hear the requirements first-hand.

Interviewer So has IQT played an active role in promoting that communication?

Company 10 To some extent. Now, going back to the earlier point, we've been engaged on a fairly broad front to customers similar to their sponsoring agency. In fact, I don't think this was the first use of our solutions within that particular organization (I probably can't go much beyond that.) They [IQT] have helped.

[Other examples:]

I know there was a Technology Vendor Day that at their sponsoring agency that included IQT investments and non-IQT investments, and we had a privileged status in that. So that was very useful for visibility.

We participated in an executive walk through – that is Agency executives – that is certainly something we would have not had on our own. So that is good exposure.

And to tell you the truth, IQT, I won't say it's a stamp of approval, but if other parts of the Community [IC] know that they've done that level of due diligence on the technology and on the viability of the business, it takes away a little bit of the issue that a small company has to deal with [when dealing with the Government] – "why are you even talking to us?"

I think it is a general benefit having that relationship with them [IQT]. I mentioned a very specific thing, and keep in mind our relationship was only formalized in August or September so we don't have a long track record of opportunities of having worked with them yet, but I'm sure there will be even more in the future.

Another thing that they've done that has been useful, which is something that a lot of VCs do, is sponsor days where executives from their investments and other selected technology companies give presentations on their company to their [IQT] staff, to key technology players out of their sponsor agency [IC], and other members of the Government community as well. So that is also very helpful for exposure.

I think overall it is a good vehicle for that.

Interviewer You mentioned that your relationship is relatively new so I don't know how this would impact it, but has you relationship at all affected how your company has developed or marketed product offerings?

Company 10 Other than specific deliverables required in the statement of work, which we were happy to do because they will be sold to other entities as well, it has pretty much been on track for our direction. It hasn't caused us to do

any "student body, right." We were going after this [Government] market. We were making technology investments to meet the requirements of this [Government] market. I think that we accelerated some development with the benefit of the funding we got from the funding from IQT, but by and large, we are on the track that we would have been on in any case.

Interviewer Would you be able to talk, and again because of the newness of the relationship, I don't know how much would be there, but would you be able to address the things that you consider valuable contributions to your company? In areas, whether it is developing technologies, financial backing, and managerial assistance?

Company 10 We're probably a little early for that. I don't want to underestimate the value of the IQT relationship, but I do need to say that we're a relatively late-stage start-up, so the investment part of it was not something that we absolutely needed. You're always happy to have an appropriate level of investment from people, who can help you, but we were not looking for an investment, and we wouldn't be out of business if we didn't get it. From that perspective, it hasn't dramatically changed anything, nor do I expect it to. I don't know of that is the tone of your question.

Interviewer Right, it is. And again, if the relationship had been developed a little earlier, there may have been more…

Company 10 If it had developed earlier in the history of the company. If it had been our first substantial entrée into the Government market, I think that they probably would have had a much more influential impact on those events. Having said that, I think they've been very influential and made an impact for us. We're very pleased with the fact of having this relationship

Interviewer You mentioned earlier when you were talking about – and I don't want to overstate it, because you stopped short of a validation or stamp of approval – but would you be able to talk about how maybe they have been able to help with other networking opportunities?

Company 10 Yes. These CEO conferences that I mentioned earlier, those have been good networking opportunities within the technology community. They are very interested in having their [IQT's] investment companies work

together where it makes sense for that to happen. They are interested to introducing their investment companies to other companies that may be technology partners or consolidation partners. And that is something that most VCs do. They tend to do that once or twice a year. But those [conferences] do help with networking in the community. And as I mentioned earlier, there have been a couple of events that have helped network within their sponsoring agency community as well.

Interviewer Now have any of these resulted in new investments or new market opportunities?

Company 10 Nothing at this time.

Interviewer How did IQT find you? Or did you find them? How did that work?

Company 10 I don't know about how much of the history I can talk about. We certainly have known about them. It's our business to know about VCs and other sources of funding. And we have watched as they invested in companies with similar technologies, and in some cases, competitive technologies. We actually have had discussions with them more than one year earlier where I think the conclusion on both sides was, "wrong stage" or "not a compelling value on either side" to move it forward at the time. As the year or 15 months went on, I think our visibility and our ability to meet the requirements of their sponsor base improved, and I think we were more attractive to them [IQT] from that aspect and from a financial aspect through our performance. I think it was just the right time and the right place, as it were, when we finally got down to it.

Interviewer Has your company had any concerns about protecting your intellectual property rights?

Company 10 Companies always have concerns about that, and we've taken appropriate measures to protect them.

Interviewer Are you satisfied with how that has turned out?

Company 10 No issues or concerns that I'm aware of with regards to our relationship with IQT.

Interviewer If you had to highlight some of the most important contributions – and I think we touched on some of those earlier – would you be able to list some of those?

Company 10 One, money. Primarily the product development / product purchase side of it which was a significant part of our transaction with them [IQT].

Two, it helps with visibility in terms of the defense and intelligence communities.

Three, the proliferation of our solution within their sponsor base. That's certainly important to us as a business. Frankly we think it's the best there is and we want them using the best!

Interviewer Have they offered anything that you feel has added very little, or possibly even detracted from your company?

Company 10 Not really. No

Interviewer If you were to characterize your companies outlook since engaging with IQT, would you say it is stranger, weaker, or about the same?

Company 10 I don't think it is materially stronger as a result. It is probably somewhat stronger for the reasons I mentioned earlier. I think regardless of IQT, we would be succeeding in the Government sector and the commercial sector that we also address. I think they've opened some doors and that has been helpful. I would say somewhat improved, but not dramatically improved.

Interviewer Does your company have relationships with other VCs?

Company 10 Yes we do.

Interviewer How would you characterize the due diligence that IQT applied compared to other VCs, in general?

Company 10 I think in general it was on the same order of magnitude. I had the sense that they were doing the kind of job that other VCs do – nothing over the top. I don't think there was anything lacking. It was what was to be expected. And that means, today, a pretty thorough job.

Interviewer Again, looking at VCs in general, when you go to them, what are you looking for?

Company 10 At the current stage we're at, you don't go looking for money unless you want money. As a fairly late-stage start up, we do look for VC relationships, but we're very selective. We're not doing a big refunding of the company. If we do bring in a VC, we want them to be somebody that could help us in the market. Somebody who has a connection to a market we want to pursue. Somebody who could help us in a sales and marketing aspect as opposed to somebody who could come in and help us run the business. Market access is the sort of thing we look for at this stage of development.

Interviewer How would you say IQT compares to others?

Company 10 From that aspect, considering the market sector they serve, I'd say they're outstanding. They have good visibility, and they give us good visibility. I'd say it helps quite a bit. Again, having said outstanding, we would still have pretty strong results in that [Government] sector. But I think they do the things that we would expect them to do, and they do it very well.

Interviewer Are there contributions that IQT makes that are more valuable than other VCs in general?

Company 10 Other than the very specific access to the market base they support, I can't really think of anything. They do the kinds of things that other VCs do.

Interviewer Is there anything they do, compared to other VCs, where they lag behind?

Company 10 I have no comment, but it's not because I'm trying to reserve a comment. Nothing comes to mind.

Interviewer Is there anything that we didn't discuss that you believe is important that you would like to bring up?

Company 10 I think you asked all the right questions, so I have nothing more to add.

Appendix K: Company 11 Interview

December 17, 2003

Company 11 So with IQT as a VC or catalyst as they call themselves, they are funded by the Agency to get technology into the Agency and they make an investment in the company to foster its advancement. Our involvement as a portfolio company is a little different, because we were already providing our software to the Agency, but the Agency used IQT to make some advancements in our technology that we did not have on our road map in a near enough term for them. So I guess IQT has maybe 20 portfolio companies, approximately. So some of the companies have technology variances for multimedia, search, a whole broad range of capabilities. And it is intent of IQT to try to have these portfolio companies bring their technology or even integrate it someway so the Agency can benefit by it some way.

[Discussion deleted as the conversation turns to specific background information about this particular company]

Interviewer If you don't mind I'll begin the questions I had prepared. In the first section, I'm looking for your perceptions of the Government as a customer. Prior to your relationship with IQT, did your company consider the federal Government as a potential customer?

Company 11 Absolutely.

Interviewer Did you have any contracts in place to sell them your products before IQT?

Company 11 Yes.

Interviewer OK, so you already had a relationship with them?

Company 11 That is correct.

Interviewer Did you have any concerns about entering into a contract with the federal

Government?

Company 11 No. I don't think we did. The federal Government and particularly the segment that IQT services have always been a long standing customer of ours. And so we dealt with Government contracting for years. And to be candid, if you look through the different contracting offices we dealt with, some are easy to deal with; others are more difficult to deal with. In a lot of cases it comes down to individual interpretations of the same set of laws. It's just the contracting officer and their interpretations of the requirements they see. And some programs have lesser requirements in their procurement channels than others. IQT, I think, is actually something we were excited to embrace. It does appear to be a different mode of operation for the Government. A much more creative way to go out and help the Government go out and deliver the types of technologies they want delivered. Now having said that, we haven't dealt with them on some of the recent things we've been doing with their procurement shop itself, so we had no exposure to that. When you approach any new procurement shop you have to get to know the people so you get to know what their procurement requirements are, so you can meet their requirements. And I would say are dealings with them have been excellent. The Agency too, but IQT, our dealings have been excellent with IQT.

We deal with all levels there. Our CEO's in contact with their CEO and I deal with all levels of technical people and business people at all levels of IQT.

And you know, I'm not a contracts person, but you know I don't think any of the requirements for contracting with them are any less than anyone else we've ever dealt with. They just seem to have a different philosophy or mode of operation. They are looking to get the job done; they are looking to move ahead. They have a customer that they are trying to satisfy the needs of. And it feels like a genuine willingness to work with us, and there are touchy issues you can get to when you are working with software rights.

We also have provided them with an offer for evaluation software, and they are in the process of going through their legal staff to look at our software evaluation agreement, so that our company and their company agree on providing it so they can show it to other customers including the Agency when they come over to their facility in Rosslyn.

Interviewer Would you say that you relationship with IQT has changed your opinion of the federal Government as a customer, or would you say that it remains the same from what you had prior to your IQT relationship?

Company 11 We would say that it remains the same when we deal with the federal Government, but when we deal with IQT; they have an innovative way of bringing technology into the Agency. We have found that in dealing with them, they are as strict as dealing with any federal agency in negotiating contracts with us.

Interviewer So it sounds like you actually have some contracts in place, is that correct?

Company 11 Yes, many.

Interviewer I think I know the answer, but I'll ask anyway, will you continue to pursue contract with the federal Government in the future?

Company 11 Absolutely.

Interviewer Well that covers the first section. The other area I wanted to look at was the role of IQT as a VC. And again, all my questions are going to be from your perspective, so you don't necessarily need to think about what IQT was thinking, but just based on your experience based on your dealings with the if you could let me know what you think of their process and the relationship. But the first part I wanted to talk about was, would you be able to describe the due diligence that IQT applied to your company, again form your perspective, prior to entering into a relationship with them? And some of the areas include how they looked at your technology offerings, your management team, and your financial health.

Company 11 That is really an IQT question. From our perspective, again I'm not a contracting person, I can say that we know IQT checked out our technology with their customer who was familiar with it, I can say they looked at it [our technology], and so they reviewed it. I know they have met on multiple occasions with our CEO, and COO. I know they have had a variety of discussions with our financial people. So I'm assuming they did the due diligence that any company looking to invest in a technology or a company would do. But you'd have to ask them that. From our perspective, it appears they went through a lengthy process to check that out.

Interviewer Did you notice it to be…I guess I can touch on this because I have a later question that talks about VC groups as well. So you would characterize it as a lengthy, thorough process?

Company 11 Yes, and we may not be the typical company that they invest in. We are not a new technology. And we've actually been out there for a while. I think the way they perceived us was they view our software as sort of a platform that some of these new technologies can plug into because we provide [technology deleted]. But we were probably a little off of their model too. I think they would do a different style of due diligence for one of these start ups that haven't been in the business very long. We probably didn't fit their traditional model either. So there was probably flexibility to show on their part when they got in to reviewing us. I don't know that, but I would assume so.

One of other thing, looking at your sheet you mention "small technology companies," I guess you could say we are one of those, but then again we are not. We are small because we only have [deleted] employees, and revenue in the area of $[deleted] a year. However, we are established and bigger than some of these smaller companies that they tend to fund. And some of those companies have only been in business a year or so, and most aren't public companies. We are a public company.

Interviewer And that is fine. I'm trying to cover all the demographics of their portfolio, so that in no way lessens the importance of your comments. If a response doesn't necessarily apply…I guess "apply isn't the right word. But if anything IQT is offering in a general sense doesn't necessarily apply, or you don't value it as much as some others, that is definitely important if you feel that was. And please, feel free to communicate that to me because that is not knocking them at all, but it helps define the types of companies that make up their portfolio.

Company 11 Another comment that I'd like to make, we showed our technology on a number of occasions to IQT before we were selected as a portfolio company in hopes of them investing in us. Because like other companies, we can always use investment capital. And we got letters thanking us for our submission, but they did not have an interest in our technology at the present time. So that was a little discouraging, but nevertheless, when the Agency wanted to get some new things from us, IQT became involved and that changed the whole perception of IQT being interested in us.

Interviewer Do you know how that happened? You mentioned that you had been trying to get a hold of them at first, but you got the "not interested" letters, but did they maintain contact with you after that. OR did they file it away and then when they realized they had a need for that particular technology they came calling you?

Company 11 Yeah, they filed it away pretty much and we had to generate the interest from other avenues.

Interviewer And how did you find out about them? Maybe other VCs or tech companies…

Company 11 We knew of them because of our dealings with the CIA. We knew of them, and I knew some of the people there. So we were very aware of their existence and what they did. But we were not a partner or portfolio company when we approached them.

Interviewer Does you company have a clear understanding about how your technology is going to fit the needs of the IC?

Company 11 Yes.

Interviewer Has IQT played a role in doing that? How do they act in that relationship with the IC? Are you pretty much direct with your eventual customers, or does IQT play an intermediate role in communicating those requirements?

Company 11 I would say that we have a very deep and direct role with lots of agencies in the IC for a long time. We catered to that community as a start up company [deleted] years ago. And then IQT came on the scene in the last 5 years, and they have not particularly helpful in getting us business. But there is always the potential they are doing things we don't know about. In fact I'm working with them with another portfolio company on another opportunity in the Agency for our technology. So that was more or less fostered by IQT.

Interviewer So I guess they do try to take some roles to increase your business, but it

is not necessarily a given that that is going to be the case?

Company 11 That is correct.

Interviewer Now has you relationship changed at all they way you market your products, whether to the Government or the commercial market? I'm sorry, develop or market?

Company 11 The approach we developed when we went to IQT about, as I was telling you the platform approach, I think the success we had not only with IQT but also in fitting IQT's vision and a lot of other Government agencies' visions has affected the way we market it. We can't say that our relationship with IQT directly did, but our success with them in taking that approach certainly helped cement the way we go about marketing that product to the rest of the community.

Interviewer For development, there hasn't been any impact at all in that area?

Company 11 Well when you say that there are certain functions, features, and all that our customer require, and they feed those requirements to IQT, and IQT feeds those to us. And there are changes and modifications in the product that are the result of the IQT relationship. They have come from that.

Interviewer Now is that also something you would do for commercial customers.

Company 11 It depends. When we get these kinds of requirements, we like to sit back and say, "Is it something that meets the overall product direction? Is it something that we can incorporate in the product and continue forward and it satisfies more than just one customer? And so far the stuff that they have asked for has met that qualification. So if a commercial customer came to us and took a similar approach, and again, it met the criteria we were talking about, we would probably do that. But that is different from doing just a one off.

The typical role of IQT is to invest capital in startup small companies. Our role, or IQT's role with us (we have a contract in place with them) is to provide technology enhancements to our product which are not on our current roadmap plan. And IQT plays a role primarily with the CIA, and as such, they are kind of only involved with them, but they are trying to

spread out into other areas in the community, and even outside the IC.

Interviewer And you would probably…I don't want to put words in your mouth, but do you think that the maturity of your company and the product has a lot to do with that? If you were just starting and basically just coming into your own, would you be more receptive to changes they request?

Company 11 Well I think your right, but there are a lot of reasons for that. Because we've been around for as long as we have, we have a very large customer base. And one of the things that many of our customers ask for is that any of the modifications to the product, go forward, for one. As a company, we can only afford to maintain so many code streams for the product. So it becomes an issue where we are at the point now that we have to evaluate these requirements in the context of how they affect our entire business as well as our customers.

But IQT, when we talk to them, they have always been receptive and they understand that. I have always been impressed that they understand which may be different than other companies they may be involved with. We have other things we have to take into consideration other than the fact we have some things we may be trying to do for the, and they are receptive to that.

Interviewer Now would you be able to talk about some of the contributions they made to your company that you feel are important contributions?

Company 11 From what perspective?

Interviewer You could talk about whether they've done anything to help you with your technologies whether it is marketing your technologies to the Government or possibly the commercial market. If they have done anything of value such as technical assistance, financial backing, or any assistance they've given you with management or running your company.

Company 11 There is a press release out on our website that talks about the contract we have in place with them. So I'd point you to that. That would be a good place to talk about financial investment.

As far as technical investment, we look to them for guidance to where they see the base they are serving is going. It's not like they provide a lot

of engineering resources or anything to back them up. That is not their role.

As far as marketing us to other agencies, I think they are trying. I think it falls in conjunction with them trying to expand who they represent. I think they are trying to expand the scope of who they are involved with. As that happens, I think you're seeing more situations where we are being brought into it by them. So I think they are trying. For example, I'm working with another customer in the IC who is using our software and they want some enhancements to our software also, and I've mentioned to them that a good vehicle for that to occur could be IQT, because they did it for the CIA. The people I've been talking to have been technical people and program management people as opposed to contracting people

Interviewer Now has your relationship with IQT, would you say it has been valuable for developing networking opportunities with other investors or other companies?

Company 11 That is something you are going to have to talk to [name deleted] or [name deleted] who has more involvement in that.

Interviewer OK, I'll skip to the next question then. What about how they have helped protect your IP rights? Did you have any concerns when you entered into a relationship with them about how they would protect it, and are you satisfied with the steps they did take?

Company 11 I sat in on a lot of those negotiations. I think that we are very concerned on every negotiation we do about protecting those rights. I think they were as open and flexible and reasonable as most people and probably a little bit more so than contracting people in the Government that we've dealt with. The people they have on staff understand our concerns and worked around to satisfy them as best as possible. So I would say that it is a real touchy issue and area, I think that we are satisfied with the way things turned out. But it is a real hard issue.

Interviewer I asked a little earlier about contributions that IQT has made, but is there anything that you could characterize when you look at the relationship that you could say, Wow! I'm really glad that we have this relationship with them in place, because if this wasn't the case, we wouldn't be able to accomplish this [what we've done]. Is that a fair question? Or would

you say that there is really nothing?

Company 11 I think to answer your question, they were vital to acting as a funding conduit between the Agency and us, and we have performed well under that contract on behalf of both IQT and the Agency. And we are looking forward to offering new technological enhancements, which the Agency wants, to extend that contract to cover even additional ones.

I'd go even a little further and say that from a technology standpoint, we're seeing on a regular basis, that they are introducing us, and introducing other companies to us. They do seem to put a lot of interest in seeing their portfolio companies work together. So there are probably some technologies and some smaller companies coming out with technologies that we would have been unaware of and would not have probably gotten into any discussions with if it hadn't been for them.

I think that the previous example of the technologies we are working on now is an example of technologies that we wouldn't even have gone down had we not been brought into it by IQT.

Another twist to that is that many of the features and technology enhancements that we are being asked to do, we would not even consider because they have such limited applicability to our overall market. For example, [deleted because comments focus heavily on technology capabilities]. So we are being constantly asked to enhance our technology for a very narrow segment of our market that we do anyway for IQT and their customer, the Agency.

Interviewer Now have there been any contributions that they have made that have not been up to the level you would have expected? Have you been dissatisfies or you thought [the contributions] lagged behind?

Company 11 No. But in some cases where I thought they had some penetration into Agency programs and thought they would be promoting our technology I have found that they were no as imbedded or influential as I thought they would be promoting our technology to a particular group in the Agency. They lived up to everything they said they would do. And in some cases where I mistakenly doing more than they were, I was disappointed in that. But that is not from any misperceptions that they set. They have been real…they've probably been real upfront and been very right as to what they said they could do and couldn't do. It seems that to us on the outside that the service they offer is something other agencies would want to capitalize on more than they seem to want to. May that is because it is new.

Interviewer Since you've engaged with IQT, what do you think of your company's outlook? Would you say it is stronger, weaker, or about the same?

Company 11 Stronger.

Interviewer And would you attribute to that to IQT? Or is that something you think would have happened without there involvement?

Company 11 I think you attribute a portion of it. We've always done well in that community. And anytime we could solidify a partnership like an IQT, it just makes it better for us.

It's not IQT who is driving the need, it is the customer. And IQT is the intermediary.

[Discussion deleted]

Interviewer The final parts of my questions are going to talk about IQT compared to other VC groups in general. I'm not pitting them against any one in particular, but on a general level. Does your company have other relationships with VCs?

Company 11 We have, but again that is not a [name deleted] question. If you go back to a previous press release, it goes back to a VC investment several months back. That is just not an area that I would know much about.

Interviewer Is there anything that we haven't discussed that you think is important to get out there regarding your relationship with IQT?

Company 11 Other than the fact what we found to be successful and we mentioned earlier on the contract that we've been dealing with them, we've worked very hard to deliver what they want, when they want it and make them look good. I think by making them look good, that has actually increased their credibility in the Agency and hopefully that will add dividends to us. That would be the only thing I would add. Because they are a marketing organization too. They have internal sales people that go around marketing themselves within the Agency. They are probably closer to a sales organization like us than most contract shops we deal

with.

[Conversation turns to other topics]

End of Recorded Interview

Appendix L: Company 12 Interview

December 17, 2003

Interviewer Prior to your relationship with IQT, did your company consider the federal Government as a potential customer?

Company 12 Well I would say that the company was not formed with the intent of selling to the Government. At the time we engaged with IQT we had some interactions with another integrator that was working on a [Government] project. So that's king of… [cell phone dropped] We kind of thought about it, but it wasn't going to be a significant part of our business.

Interviewer Sp prior to your relationship with IQT, did you actually have a contractual agreement with the federal Government to sell your product?

Company 12 No we didn't. That was a huge frustration for us, the whole contracting process. The one sort of sale we did make where there was some pull from a group within the Army, actually, we were able to make that sale because there was a cooperative integrator, [name deleted]. They were able to have [name deleted] make the acquisition and role it into some existing, budgeted thing. And in the case of DARPA, we were dealing with them then we got this 100 page contract from [company deleted] that was full of this sensitive IP terms and we were kind of stuck. We didn't have the knowledge and the domain space, so we were supposed to go out and hire attorney's and so on to figure that stuff out. So it was kind of depressing.

Interviewer Now has your opinion of contracting with the federal Government changed at all since you've entered into a relationship with IQT?

Company 12 Yeah. We are going to be in the position to say that IQT has been extraordinarily helpful in allowing us to do business with the Government. Yeah so they acted as… In a way it feels sort of like they are playing almost the role of a Lockheed, Boeing, or SAIC in that they are sitting between us and these customers, many of the customers doing classified stuff and so on. And they are kind of like this buffer, both on the contract side and the technology/integration/deployment side. Because we don't have any cleared people, so they are kind of broker the

communications. We wouldn't be anywhere without that

Interviewer No do you have any contract in place with the Government at this time? Are you currently selling them your product?

Company 12 Yes

Interviewer Now that you are doing that, what is your opinion of the contracting process? Because at first you said it was daunting, because you did not have the staff or experience to go through with it. So what would you say about it now?

Company 12 Well, we are selling our products to the Government. Those sales for the most part, we have figured out how to work those through intermediaries and so on. As far as having an actual procurement contract in place with the Government, that is something we are actually working on now, but we haven't completed it. So I don't really have a final answer for you.

Interviewer OK, I've got you. So you're still going through the integrators then?

Company 12 Yeah. Yeah, we are. We are in the process of negotiating a vendor-direct as a follow on to this initial wave of IQT facilitated stuff.

Interviewer Next, I'd like to talk about how IQT has performed from your perspective as a company that is part of their portfolio, and what they have been able to offer you and how you value those contributions. But the first thing I want to look at is, would you be able to describe the due diligence that they applied to your company prior to them making an investment?

Company 12 Well it is fairly typical. I mean from a venture investor point of view, the due diligence they did is exactly what we go through with our other investors. It is a fairly rigorous review of the financial condition of the company, the financial history of the company, the forward looking financial projections of the company, interviews with customers, and then an extended evaluation of the technology vis-à-vis other solutions on the market. So it's pretty exhaustive, but it's also what any other venture capital organization would do, so it's not unusual for us to go

through that with them.

Interviewer Do you feel that you have a clear understanding about how your technology is going to fit the needs of the IC? Obviously, when I say this, nobody is going to know specifics about the actual application, but in terms of knowing that the products you are going to be selling would be a good fit for what it is they say that they want.

Company 12 In the process of leading up to the relationship closing with them, it became clear the problem they basically had that they thought our technology would help in solving at a high level, I guess you could say in terms of we could make life better for them. So yeah. We kind of have a very good notion of what we're bringing to the party.

Interviewer Did IQT play a direct role facilitating that communication? Did they act as an intermediary…?

Company 12 No, IQT acted as very much an intermediary because again, for the most part, everything the customers do, to some degree, it is very difficult for them to have unclassified discussions about technology and problems and what they want technology to do for them. SO, basically what IQT did was they would facilitate some discussions. We would have a three-way conversation, sort of [company deleted] would drop off the line, they would continue to have a discussion at more depth, maybe follow up on in meetings where they could talk about it in a classified setting, and then IQT would get back to us with the filtered, generic version of what needed to be communicated to us. So obviously, not telling us anything they weren't supposed to. So it was extremely useful for them to listen to what the customer had to say and then distill that down into what we needed to do to our product to make it fit in. And then they'd communicate to the customer about how we feel the application could work and then take the next step once the technology was complete. They have a whole team to basically deploy it and integrate it with other technologies. They have definitely been extremely involved, and right in the thick of things throughout the whole process.

Interviewer Now has your relationship at all affected how you developed or marketed your technology offerings

Company 12 Their model is, and the way they handled it with us, is to look for certain

modifications or enhancements to the product that they would like to see to make it an even better fit for certain customers. They really try to find overlap where the company needs to do certain things to enhance its product for the commercial space but where these particular things are also extremely valuable to Government and try to get the company to concentrate on those overlap features where there is a win on both sides. And I feel like it has been 100% overlap. Everything that we've done at the direction of IQT is also equally valuable to our commercial customers. The basic idea is not to create a Government contracting organization. It's to have available to the Government a relatively inexpensive COTS technology. But you know, they want to kind of influence it and steer it so that does in fact meet their needs. But they have been really diligent, in fact, making sure that we're not losing focus on our commercial customers and commercial priorities.

Interviewer No has your relationship with IQT helped your company develop opportunities, either with other investors or other companies that may help you product or that may help your company in general?

Company 12 Yeah, absolutely. They do that in a number of ways. They have a pretty active PR group that puts us in contact with journalists and so on. They put us in contact with the Government integrators and facilitate those connections there that we wouldn't make otherwise. There are people who make introductions to people in different Government agencies and military organizations. They have done that for us with [agencies deleted]. Then there are events like the IQT CEO summit where they brought the COE of IQT's portfolio companies together with VC people and industry people, and that is a very fertile ground for meeting people. I'm engaged with one very significant VC group right now that directly came out of that CEO summit.

Interviewer That is significant. So you'd label those as valuable opportunities?

Company 12 Extremely valuable?

Interviewer Do you remember how IQT found you? Did you find them? Did they find you? Did someone bring you together somehow?

Company 12 One of our initial investors was [VC group deleted] and they had a meeting with IQT going over technology things. And the [VC group

deleted] sort of introduced the technology to them and IQT got in touch with us.

Interviewer What about your companies IP rights? Are you satisfied with the way IQT has helped protect them? I know that is usually an issue with software companies when selling to the federal Government.

Company 12 I've been in the software business for 7-8-9 years at this point. We were very diligent in negotiations with them in terms of the deal in terms of protecting our IP. And we got that. There was some negotiation, but generally they were pretty savvy about what commercial software companies need to protect those IP rights.

As an investor, there perspective on that has changed from the normal Government customer because they know that companies have to arrange follow on financing and any future VC investor is going to scrutinize the IP ownership of a company. So anything that clouds or dilutes the IP makes a company less investable [sic]. I think IQT… [cell phone break up]

So anyway, I was talking about IP stuff. Did that answer it?

Interviewer Yeah it did.

What would you consider to be the most important contributions that the relationship with IQT has contributed to your company?

Company 12 It has created an opportunity for us in the Government space that I don't think we would have had. That is hugely significant to the company. That is another market we are able to serve, another market we have a presence in. It makes our company stronger and increases our probability for success. I really don't think we would have any significant presence in the Government market had it not been for IQT.

Interviewer Have they made contributions that you would consider as adding little value or possibly even detracted from your company? Contributions you're not satisfied with?

Company 12 A negative contribution? I don't know of anything like that. Everything they've done for us has come off well.

Interviewer Since engaging with IQT, I think I know your answer, but I'll ask anyway, do you consider your companies outlook to be stronger, weaker, or about the same?

Company 12 We have a much, much higher probability of success for the company. Strategically it has been very good for us.

Interviewer The final questions I have will relate to whether or not you have relationships with other VCs and I believe you said you did?

Company 12 Yes.

Interviewer What I'm looking for is a comparison of IQT to other VCs in general. I'm not asking you to pick out VC "A" and compare it to IQT. It's a broad generalization that I'm looking for. How would you compare the due diligence to other VCs before they made their investment?

Company 12 I would say it is very rigorous. It is not excessive or more rigorous than I have had with some VC groups, but it probably more so than the average VC would go through.

Interviewer Are their particular areas they concentrate more on? Is it the technology, the management, the finances?

Company 12 I think they are a little unique in that they evaluate the product as a customer as well looking at the company's overall probability of success. You average venture investor, in a sense, doesn't care what the product is so long as it makes money. IQT spends a lot of time evaluating your technology looking at the usefulness from their own strategic point of view. They put a lot more into the product evaluation than I think your traditional venture investor would.

Interviewer When you look for a VC in general what are you looking for, what is the most important thing they could offer before you would agree to take an investment from them?

Company 12 I don't know what you hear from other you talk to. Normally companies are looking for money; they are looking for capital. At "A" level, if companies need the money badly, they'll take it from anyone who will give it to them. If you are fortunate enough to be in a position to be selective about that, you are looking for an investor who brings something to the table. I don't think companies know what that is before hand, but you are looking for companies that are going to bring strategic contacts, who are going to be able to make introductions that you can form useful business relationships with. You are looking for a VC group that has a track record of companies going public or being acquired, because that means they know the bankers and the companies doing the acquiring so they can also help you have that kind of an outcome. You are looking for investors that have a reputation so that when the news gets reported that they made an investment in you, it gets looked at and it means something positive. I think IQT actually has that going for them. So those are the kinds of things you look for.

Interviewer So you would say IQT compared to other VCs you dealt with fares pretty well in those respects?

Company 12 Yeah. They are a new firm, and I think the weakest are with them is they haven't been around that long, so they haven't invested in an Oracle, or a Sun, or a Netscape, or a Yahoo…yet. They haven't been investing that long, so they don't have that track record. A lot of companies come out of the early round and go public… Honestly, IQT in the Valley right now has a good reputation. The other venture guys really like them because the Government market is pretty steady and sort of recession-proof, and that has obviously (because of the recent market) been extremely valuable to a company because they can open those doors in Washington and give that company another revenue stream to supplement the normal commercial revenue stream. So it is pretty highly regarded right now.

Interviewer So is that the area where you would say they offer more value that conventional VCs?

Company 12 Yeah. It's a unique capability. Every venture guy brings something a little different to the table. Almost none of them bring a whole set of things to the table. Everyone has their thing that they add and IQT has that. And it's a pretty big thing.

Interviewer That concludes the questions I had drafted for my thesis, but I wanted to close with a final question. Is there anything that is important that we didn't discuss that you feels I should have brought up?

Company 12 Well, I think one thing IQT is doing for the Government that is really important, is that the cost of solutions they bring to the Government customers, my gut feeling is that it is much lower than the traditional contract-letting, integrator-driven costs. I know that our solutions are much less expensive that people like [company deleted] bring to the table in terms of [technology capabilities deleted] and it is because we are a commercial company and it is a more off-the-shelf pricing model. I think it is a really, for the Government, an efficient way for them to getting cutting edge technology into their organizations.

Appendix M: Company 13 Interview

January 14, 2004

Interviewer Prior to your company's relationship with IQT, did your enter into a contractual agreement with the federal Government to sell a product or service?

Company 13 No. No.

Interviewer Did you consider the Government as a potential customer prior to IQT

Company 13 I considered it. My background – I was drafted and I worked for [subject lists various Government organizations and commercial firms that had Government contracts – details deleted]. For a start up, Government can be difficult to get going as an early adopter customer. So there is lots of potential, but going into the Government agencies where you have the best fit can be very time consuming and difficult for a very small company.

Interviewer Did you also have any concerns about entering into contracts with the Government?

Company 13 Not really, because as I said, I had done that for almost 20 years with most of the companies that I worked with. The overhead or experience base in dealing with the Government is sort of similar in dealing with a large company like an HP or IBM. So there is definitely some overhead, but the fact that I had done it before made me not terribly worried about the contracting part.

Interviewer I guess that background would have helped a lot.

Company 13 If I didn't have any background a lot, again I was a program manager with the [Government agency deleted] so I pretty much – even though that was years ago – I pretty much knew the basic ground rules and terminology. For someone coming at it cold, Government contracting, the learning curve can be very high.

Interviewer Do you have contracts in place now to sell your products?

Company 13 Yes. In addition to IQT, a current major contract is with [two federal agencies outside the IC listed].

Interviewer So I guess I know the answer to this, but 'm going to ask anyway, but based on your experience to date, you will continue to pursue them as a customer?

Company 13 Yes, certainly.

Interviewer The next part of this is to go ahead and move on and talk about your relationship with IQT. I was wondering if you could describe for me the evaluation process that your company underwent, from your perspective, before entering into a relationship with IQT. The three areas that I'm looking at in particular are the due diligence that IQT applied to your technology offering, your management team, and your financial health.

Company 13 The way we got in contact initially with IQT is that [name deleted] who one of our board members and a friend of mine of longstanding, we worked together at [Government agency deleted] was hosting [name deleted], our CEO on the West Coast. At that point, we were basically talking to another of potential venture firms as well as a few firms who might be OEM (OEM are major customers) walking through a slide set describing the product, the technology, the approach and [name deleted] asked Gilman Louie, who he worked for to help us and just do a dry run with [name deleted] just to provide some feedback and pointers. [Name deleted] did that (this was really very early on; this was like Feb 2000. So very early in IQT's cycle. I knew IQT existed, but I really didn't know too much about them) and Gilman said, "Whoa. Wait a minute! Let's get some of our people in here. They should hear this too." So really based on just a serendipitous first exposure we were introduced to their early venture team. Within about a week we did a demo and a debrief with the team in Washington. They assigned one person to head up their due diligence team on the technical side. We had over a period of about 4 – 6 weeks several face to face and telephone meetings with that person. We also did a quick review of our business plan and business objectives with the business team. At that point, the IQT model for dealing with early stage companies was breaking new ground in terms of procedures. So we basically started off with a pilot or proof of

concept contract. Again IQT can fill you in on how their model has evolved. So we did the pilot, we did the follow up that got us to the people at IQT who were doing the direct evaluation. They also talked to our other investors, and by [date deleted] IQT basically we negotiated a term sheet and had an investment in place by [date deleted]. So end to end the process ran from Feb (first introduction), March (first meeting, a period of about 4-6 weeks which was due diligence on a variety of matters.) In Apr, the first contract for a pilot, and period of performance for the pilot, a negotiation of terms sheet, and getting the investment in place stretched out until Sep. So really, only two parties are involved in the due diligence, the person responsible for technology and value of technology as leverage for Agency use, and there was a second team that really focused on the business model and looked at us like a VC firm.

Interviewer What were your impressions about the amount of due diligence?

Company 13 At that point we had done due diligence with a couple of other venture firms, so this was not the first time we had done that. All told, I think they probably spent more time qualifying the technology and the technology fit for technology transfer for the Agency. And they looked on the financial due diligence both for the prospects of succeeding in the market place and maybe leveraging the fact they could publicly announce that they could announce an IQT investment as an additional advantage in getting VC (getting around of VC.)

Interviewer Do you believe that your company has a clear understanding about how your technology is going to fit the needs of the IC?

Company 13 In a general sense. We have customers in law enforcement and again, I spent 10 years in [Government agency deleted] dealing with element of the community. Again, our contract procedures say we don't work with clearances so we're dealing in general terms, but in terms of the technology we really build it for [technology details deleted]. The sort of potential carryover (to the commercial market) is pretty darn clear to us.

Interviewer So even though you don't know what the actual use may be, the requirements are made very clear. And we do have customers in law enforcement where it's a law enforcement application. IQT has been very good, particularly over the past two years, acting as a mediator in terms of explaining what is important to them what they want to be able to show their customers. In particular, over the past 6 months, IQT has

been very effective in identifying particular QIC members to work with us and that relationship has been very good.

Interviewer So your relationship with them then affected how you developed your product offerings? Correct?

Company 13 Yes. Early on, the first round was really a strategic investment, but it also had some product development requirements. So we sat down and shared our development roadmap and IQT said, "OK, in developing the product, there are certain things that we really care about in terms of [technology requirements deleted]. All of these things line up nicely with commercial enterprise requirements, and all of these eventually became accelerated development priorities which we delivered. So part of what we got in terms of IQT investments was actually tied to a series of development task orders which I would say moved the product ahead in ways which made it more attractive for commercial team managers as well as for the Government. So I think that they were very sophisticated and very thoughtful at looking for ways to mature the product that addressed the larger market and not building things that would be used only in the Government.

Interviewer You began to hit on this when talking about your last couple points, but would you be able to talk about some of the notable contributions that IQT has made to your company?

Company 13 I would put three. One is an infusion of funding when we were largely self funding. That is really base level, giving us the resources to actually go on, build our product, and get it to market – extremely important. Second, the ability to work with them in defining some of the capabilities that took us from what was essentially an internal pilot to our 2.0 release which was essentially our commercially viable release. Basically adding the capabilities that made sense to IT managers – that was very important. And the third is really, since then and particularly over the past six months as we've been able to get some traction independently in the commercial marketplace – IQT has been very diligent in assigning QIC team members to work with us. We intended the IQT CEO summit where they bring portfolio companies together and try to find opportunities to work together and I think the third major influence is probably over the next year, we will probably see a substantial portion of our business evolving through IQT's mediation and introduction that we wouldn't be able to address directly ourselves at this stage. We just wouldn't have the resources to hire someone and put them in DC…hire

someone with the background to put them in this community and really address it as a sales opportunity. We wouldn't have the opportunity to do that right now. With IQT basically helping to shape requirements, make introductions, help us identify opportunities for pilot applications, we are going to end up building about a third of our business base over the next year that are a direct result of working with IQT.

Interviewer And that leads into my next question, and that is, how have they helped with networking opportunities? It sounds like you consider that a pretty substantial contribution.

Company 13 Again, I've worked in Government and with Government and I know that one of the reasons that IQT was founded was technology transfer in a large Government agency is very challenging. You have a whole bunch of people; you have long term plans. The number of people who have to be comfortable with introducing a new technology in a Government agency is very large, especially if it is being introduced for a mission critical application. Working with IQT, its not like I expect results in 30 days, but as you go ahead and understand what the customer requirements are, as you identify opportunities to do pilots which demonstrate the deployment of the technology and the representative missions (pilot production applications) over a period of a year or two I think we are looking to build really strong and solid relationships and pretty much do what the IQT says we are supposed to do, pretty much open up the opportunity for the agencies that IQT works with to adopt new technology that is proven effective in the commercial market, faster and more effectively and also give us an opportunity to work with those people as customers as a small company, which we probably wouldn't have been able to do at this stage of our existence.

Interviewer I'm sure you have some experience with this in your dealings with the federal Government – what about your IP? Did you have concerns about that? Are you comfortable with that relationship? Is IQT protecting those rights

Company 13 In terms of the due diligence process, we probably spent more time on that issue in doing the initial investment round than on any other. As I say, one of the challenges (this is one of the first times IQT had done it as well) neither of us really had a very good model for that in the beginning. Because I had been a coder on the Government side, I at least had some perspective on what the Governments concerns are and we just negotiated which I thought was a very fair apportionment to IQT as a

primary investor and right to the rest of the Government. We really spent a grand total of 3 or 4 weeks negotiating that, but it was very productive negotiation. It wasn't a matter of sitting across the table and yelling at each other; it was really of matter of saying, "Let's see, how do we recognize that IQT was providing additional development money to an early stage company that had totally bootstrapped all its technology. So it was not as though IQT's investment was taking us from scribbles on a napkin to a first working product. So we had to recognize the incoming value and come up with an equitable way to recognize the additional IP value that followed from some of the IQT work. So we had to sit down and come up with something that was fair. That was part of the original negotiation and all of the terms have worked very well in practice.

Interviewer So you are satisfied?

Company 13 Yes.

Interviewer You talked about some of the things that IQT has done that added value, but are there any contributions that IQT has made that you don't feel are very important or that have possibly even detracted from your company?

Company 13 We were, I'm going to be frank here, the thing that really didn't work as well as anyone anticipated is when IQT started off, their model was, "Think of us as any other VC. And we're your friend as an early stage company. We have a Sand Hill office and all of those other good things." The IQT model as I understand it I not to do the very early stage investments, they tend to do the strategic investments with larger, more established companies so they can basically concentrate on the technology transfer, rather than acting as VC, board members, business advisors. So I would say that IQT has been much more effective in its technology transfer and sort of internal advocate role than considered on its own merits as a VC. They have people with good ideas, you know experienced business people, but they really did not have the ability to work with us as an early stage company on the commercial development that a VC firm with a board seat might have.

Interviewer Now since engaging with IQT, do you believe your company's outlook is stronger, weaker, or about the same?

Company 13 Stronger, definitely. Again, we are marketing a product to competitive

intelligence, market research, program teams, what have you, and the mere fact that we can reference IQT, and have their summary of product and validation on their website it's a …simply the fact that they have done the due diligence on our technology and company and have made that investment. Even though they can't talk about how it is used in detail, the mere fact that we are basically on the IQT list makes a lot of our Government and IT customers much more willing to deal with us as a small company. Because who knows more about that than IQT and their customer. So if they think it is good technology applicable in the commercial market as well as to the community that is a really good endorsement. Even if you don't go any deeper than that.

Interviewer And that is a very common response. Your company has relationships with other VCs, correct?

Company 13 Correct.

Interviewer VCs have different strengths and weaknesses, so I'm trying to make this as apples to apples as I can. I understand you can't completely do that, but in a general sense, how does IQT compare to the other VCs that you have relationships with?

Company 13 As I say, other VCs simply look at investments as strictly the business, the business prospects, growing the market. IQT is viewed by the people who we talk to in the venture firms more as a strategic investor more than as a VC firm. So regardless of how they spin themselves as, "We're helping to grow the business, blah, blah, blah…" people perceive them more as strategic investors. They are people who basically believe in the product, believe in the team, put money on the table, who are basically providing resources because they want to both use the product and benefit from its commercial success. Rather than people viewing IQT's investment coming from a first tier venture firm where they investment is based on strictly financial metrics. In 2000, we could have been dogfood.com and gotten venture firms interested if they thought they could make money on it.

Interviewer Are there any areas where you feel IQT is lacking compared to that general VC pool?

Company 13 I really think that to the extant IQT steps out of the core technology

which is potentially leverageable by its community, it's not a good use of their resources. And I don't think they would be effective, but I think they realize that and I don't think they are going to. The perception is, I think, they are much more sophisticated in building a portfolio of relationships all of which point in the same general direction and all of which are candidates for direct technology transfer over a 6 month to 2 year period which could help their customers do their missions.

Interviewer That concludes the questions I had for my thesis, but I wanted to conclude with a final one. Is there anything that you feel is important that we didn't discuss that you would like to talk about as far as your relationship with IQT?

Company 13 [Discussion turns to company-specific details and is not included].

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14. ABSTRACT

The evolution of information technology (IT) has outpaced the federal acquisition system's ability to keep up. The CIA addressed their inability to procure cutting-edge technologies by engaging with In-Q-Tel, a venture capital firm that invests Agency money in companies that could produce commercially viable technologies to fill the Intelligence Community's (IC) pressing IT shortfalls.

This thesis explores two aspects of the In-Q-Tel model, whether In-Q-Tel creates relationships between the IC and promising technology companies that would not have occurred otherwise, and the contributions In-Q-Tel makes to its portfolio companies that contribute to their success. The results of this study suggest that In-Q-Tel has promoted new relationships between the IC and technology firms that were not actively seeking the Government market as well as bringing the IC together with technology companies that had promising technology solutions, but for various reasons could not connect with the right users within the IC. Findings also show that In-Q-Tel's technical validation of its portfolio companies' products, its established network of investors and technology users within the IC, and the capital they provide to fund product development and/or operating expenses are highly valued by its portfolio companies and contribute to the companies' success.

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