GODBE RESEARCH
Gain Insight

HOMELAND AND INFORMATION SECURITY CLUSTER

Labor Market Study

Conducted for the Silicon Valley Workforce Investment Network

November 2005

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INTRODUCTION

Godbe Research is pleased to present the results of this labor market study conducted for the Silicon Valley Workforce Investment Network. This particular report examines the current and future workforce needs of employers in the Homeland and Information Security Cluster within the Silicon Valley region.

The diverse nature of the Homeland and Information Security cluster requires that we clarify the structure of its workforce. The cluster itself has been delineated into two different sectors;

- **The Information Security Sector** protects networks and electronic information systems from unauthorized access to sensitive information. This sector's objectives include ensuring the integrity of data, implementing appropriate privacy standards for information, and protecting information systems from external sources that attempt to disrupt the functionality of the network.

- **The Homeland Security Sector** focuses on security services that are funded directly or indirectly through the federal government to protect residents from manmade and natural catastrophes. This includes providing security for airports, ports, and other transportation hubs as well as providing good and services for those who are directly responsible for Homeland Security.

The major components of this study entailed researching existing sources of information relevant to the Homeland and Information Security cluster in Santa Clara County, gathering qualitative feedback from industry employers and education and training providers, and developing an inventory of existing businesses and education and training providers in Santa Clara County.

With a thorough search of existing research and information on the Information and Homeland Security cluster, we compiled a summary of the clusters and provided insight into its future direction. By surveying businesses and using executive interviews for education and training providers in the cluster we were able to gather information about current and potential occupational gaps and opportunities for SVWIN.

This report is organized into the following sections:

- The *Executive Summary* includes a summary of the *Key Findings* from the survey, a short description of the project methodology, and the Conclusions and Recommendations for the Homeland and Information Security cluster based on our research.
- The *Summary of Findings* section offers an industry analysis based on national and international research and a question-by-question analysis of the survey. The discussion is organized into the following sections:
    - Component A: National and International Trends for Homeland and Information Security
    - Homeland and Information Security: Occupational Assessment
    - Component B: Regional Assessment of Employers
    - Silicon Valley Workforce Investment Network Evaluation
    - Component C: Assessment of Training Providers

- *Appendix A* includes a complete description of the methods and procedures used to conduct this research.

- *Appendix B* provides the survey questionnaire that was used in the study.

- *Appendix C* provides an inventory of all business resources and education and training providers in Santa Clara County.

EXECUTIVE SUMMARY

Introduction

In June 2005, the Silicon Valley Workforce Investment Network (SVWIN) hired Godbe Research to conduct a workforce demand study of the Homeland and Information Security cluster within the Silicon Valley region.

Project Methodology

There are two major components to this study:

- Secondary research – review of the current literature on the industry and research into the characteristics of the industry and the more prominent occupations.

- Primary research – interviews were completed with both companies from the Homeland and Information Security Sectors and larger firms (100+ employees) with an Information Security department or employees within the Bay Area. For this study the Bay Area included Santa Clara, San Mateo, San Francisco, Alameda, Contra Costa, and Marin counties. Executive interviews with education and training providers were also conducted in order to identify current gaps in workforce demands, as well as evaluating the capacity for education and training programs.

A more complete description of the methodology used for this study can be found in Appendix A.

Key Findings: Industry Analysis

Current Workforce

Hoover's database has a total of 1,492 companies listed in either the Information Security Sector (95%) or Homeland Security Sector (5%) for the six county Bay Area. There are approximately 355,068 employees working in the Information Security Sector. We have divided the sector into three components, software, hardware, and other, which are defined in more detail in the next section.

Based on the survey results, this translates to approximately 321,604 full-time permanent employees (91%), 5,642 part-time permanent employees (2%), and 27,822 temporary employees (8%). These numbers differ from the national findings of the *(ISC)^2 Global Information Security Workforce Study*, where they report that two-thirds of employees are full-time and one-third are part-time.

Expected Growth

The survey results also reveal an expected growth rate of seven percent over the next year for the Bay Area. IDC forecasts an annual compound growth rate of 14 percent between 2003 and 2008 for the United States.

Hiring Practices

Forty-seven percent of companies reported that they typically recruit from outside the firm when a non-entry position becomes available. Also, 26 percent stated they either always or frequently recruit individuals from outside the Bay Area and 26 percent also stated they either always or frequently recruit from outside California.

Workforce and Employee Development

The survey results reveal that over 90 percent of information security companies utilize informal on-the-job training. Over half use formal on-the-job training, employer-paid outside training, in-house classroom training, and tuition assistance at a college or university. In general, information security employers revealed a stronger commitment to internal training and employee development than found in other comparable clusters.

Key Findings: Occupational Analysis

Occupational Growth and Turnover

There are four occupations that are expected to have large growth over the next year: Network Engineer / Architect, Database Security Engineer, Data Security Analyst, and Security Software Engineer.

Table 1 Occupational Growth Expectations

	Growth Expectations
Network Engineer / Architect	High
Database Security Engineer	High
Data Security Analyst	High
Security Software Engineer	High
Network Security Technical Specialist	Medium
Application Security Engineer	Medium
Security Sales Engineer	Medium
Information Security Manager	Medium
IT Security Aministrator	Low
Senior Security Consultant	Low
IT Security Analyst	Low
Network Security Engineer	Low

The occupations with the highest expected turnover rates are Database Security Engineer, Data Security Analyst, Network Engineer / Architect, and Network Security Technical Analyst.

Table 2 Occupational Turnover Rates

	Expected 12 Month Turnover Rate
Database Security Engineer	High
Data Security Analyst	High
Network Engineer / Architect	High
Network Security Technical Specialist	High
Security Software Engineer	Medium
Security Sales Engineer	Medium
IT Security Analyst	Medium
Network Security Engineer	Medium
IT Security Aministrator	Low
Information Security Manager	Low
Application Security Engineer	Low
Senior Security Consultant	Low

Hiring Difficulty and Recruitment Practices

The occupations that have the hardest time finding applicants who meet the company's hiring standards are Database Security Engineer, Network Engineer / Architect, Network Security Engineer, Security Sales Engineer, and Senior Security Consultant.

Table 3 Occupational Hiring Difficulty

	Hiring Difficulty
Database Security Engineer	High
Network Engineer / Architect	High
Network Security Engineer	High
Security Sales Engineer	High
Senior Security Consultant	High
Application Security Engineer	Low
Information Security Manager	Low
IT Security Aministrator	Low
Data Security Analyst	Low
IT Security Analyst	Low
Security Software Engineer	Low
Network Security Technical Specialist	Low

There were five occupations that companies most frequently look outside the Bay Area for qualified applicants; Security Software Engineer, Security Sales Engineer, Network Security Engineer, Network Security Technical Specialist, and Senior Security Consultant.

Table 4 Occupational Hiring Practices

	Hire from Outside Bay Area
Security Software Engineer	Often
Security Sales Engineer	Often
Network Security Engineer	Often
Network Security Technical Specialist	Often
Senior Security Consultant	Often
IT Security Analyst	Less often
Information Security Manager	Less often
Data Security Analyst	Less often
Application Security Engineer	Less often
IT Security Aministrator	Less often
Network Engineer / Architect	Less often
Database Security Engineer	Less often

<u>Minimum Education Requirements</u>

All occupations had a majority of respondents stating that they typically require a bachelor's degree (BA or BS). There were three occupations in which at least a quarter of respondents stated they require an advanced degree (MS, PhD, JD, MBA, or PE), Information Security Manager, Security Software Engineer, and Data Security Analyst. There were also three other occupations in which at least a third of the companies reported they only require certification or an associate's degree, Network Security Engineer, Database Security Engineer, and Network Security Technical Specialist.

<u>Potential Occupational Shortages</u>

There is no single equation that can determine the probability that an occupation will be undersupplied in the future. However, a comprehensive evaluation of both the quantitative and qualitative indicators of supply and demand for each of the occupations in question, combined with a thorough evaluation of the industry as a whole, allow at least an estimate of those occupations that potentially are most likely to be undersupplied in the future.

Table 5 categorizes each of the primary occupations into one of three levels of potential shortage:

- **Red**: Occupations that provide the strongest indication that they will be undersupplied in the future.

- **Yellow**: Occupations that provide some indication that they may be undersupplied in the future.

- **Green**: Occupations that provide little to no indication that they will be undersupplied in the future.

<u>Table 5 Potential Occupational Shortages</u>

	Potential Shortage
Database Security Engineer	Red
Network Engineer / Architect	Red
Data Security Analyst	Yellow
Network Security Technical Specialist	Yellow
Security Software Engineer	Yellow
Security Sales Engineer	Yellow
Network Security Engineer	Yellow
Senior Security Consultant	Yellow
IT Security Analyst	Green
IT Security Aministrator	Green
Information Security Manager	Green
Application Security Engineer	Green

Conclusions and Recommendations

Based on the findings of the secondary and primary research, Godbe offers the following conclusions and recommendations to the Silicon Valley Workforce Investment Network:

The Silicon Valley Workforce Investment Network has several opportunities to help develop a skilled and productive workforce for the Homeland and Information Security cluster in the Bay Area. These opportunities include expanding certificate programs in information security at regional community colleges and universities, assisting in the development and implementation of career ladders and re-training programs for Information Security occupations, and collaborating with Homeland Security firms in recruiting and screening new applicants.

Expand Information Security Certificate Programs at Regional Community Colleges and Universities

The information security cluster is a growing industry that is constantly requiring new education and training for its employees. One of the defining characteristics of the Information Security industry is the demand for qualified applicants with appropriate certifications and the constant need for re-training employees on the latest technology. Given the strong growth expectations for most information security occupations and the constant demand for training in new technologies, expanding the information security certificate programs in the Silicon Valley community should be a high priority.

Information security employers in the region indicated that educational certificates were very important for successful applicants in most of the occupations examined in the primary research. Employers indicated three occupations in particular that had strong growth expectations or current difficulty hiring for the position and stated that educational certificates specific to the position were at least very important when considering new applicants for the position. These occupations include;

- Network Engineer / Architect,

- Network Security Engineer, and

- Database Security Engineer,

These occupations use both general, vendor-neutral information security certificates such as a Certified Information System Security Professional (CISSP) as well as vendor-specific certificates such as Microsoft Certified Systems Engineer: Security.

Currently, community colleges offer courses and programs designed to prepare students for passing a both vendor-neutral and vendor-specific certificate examinations. They also offer degree programs geared towards helping students find entry-level employment within the industry.

There are two areas that can be improved. First, more collaboration needs to be done with the leading security certification organizations, such as (ISC[2]), to offer training for more security related certificates. Also, most of the programs are designed for individuals at the lower end of the career ladder. There are opportunities for the development of programs designed for those who are looking to move up the career ladder by receiving training for additional certification.

Based on an executive interview with one of the education and training providers in Santa Clara County, there exists an opportunity for SVWIN to collaborate with Foothill College to expand awareness of SVWIN and increase recruitment for Foothill's network security program. Chuck Lindauer, the dean of the Computers, Technology & Information Systems division at Foothill College, said "the program is in its first quarter of existence and enrollment is slightly less than half of capacity."

> SVWIN Opportunity - Collaborate with Foothill College to assist in the development and recruitment of students in the network security program. Working with Foothill College, SVWIN will design a feeder program that will develop any prerequisite skills that are needed for students entering the network security program. SVWIN will also work with Foothill College to better market the opportunities that exist for potential applicants in the information security industry.

Given the nature of the current landscape of the training industry, SVWIN should concentrate on vendor neutral certificate training at the local community colleges. Vendor specific certificate training is already well established with private training and education institutions.

Assist in the Development and Implementation of Career Ladders Programs for Information Security Professionals

The strong demand for information security occupations points to not only expanding the supply of qualified candidates but to also retaining and developing those individuals that are already working in information security or a closely related field. Career ladders provide current and potential employees a clear picture of the opportunities that exist in the industry but also tie that opportunity with the educational and training requirements that are essential to the industry.

Developing and implementing a career ladder program for the information security industry will require collaboration with both employers in the industry and education providers but will likely need to be led by an agency like SVWIN. SVWIN will need to work with employers to identify and develop career ladders that connect occupational advancement with the skills and educational requirements that are associated with each progression up a given ladder. SVWIN will also need to collaborate with educational providers in the region, both community colleges and universities, to ensure that these institutions are offering courses and general curriculum that is consistent with the framework in the career ladders.

> SVWIN Opportunity – Develop and implement a career ladder program for information security. This program would establish a career path for those individuals who are starting at the bottom of the occupational ladder as well as provide career advancement information to those individuals who are considering a lateral movement into the information security sector from a higher initial starting point.

Collaborate with Homeland Security Firms in Recruiting and Screening New Applicants

Employers in the Homeland Security arena are generally less willing to disclose any information about their business including those related to workforce needs. However through secondary research and executive interviews, we were able to determine that the Homeland Security industry in Silicon Valley tends to be rather concentrated with a few larger firms and training providers that account for most of the demand for Homeland Security occupations in the region. The demand for new workers also

tends to be relatively erratic with greater fluctuations found in other clusters, as much of it is dependent on federal legislation, and when new positions are open they usually need to be filled quickly. These characteristics indicate that SVWIN should attempt to develop relationships with some of the larger firms in the Homeland Security arena and collaborate on recruiting and screening new applicants. The positions required usually have lower skill and education requirements which would serve a labor pool very different than what is needed in the information security arena.

Explore opportunities to develop and improve communication skills among current information security employees as well as future applicants to this sector.

Employers, as well as education and training providers, for the information security sector are largely focused on developing the technical skills and abilities of their employees or students. However, employers in this cluster were most likely to identify *communication skills* as the skill-set in which applicants were most deficient. Specifically, of the ten occupations evaluated, employers identified communication skills as the skill set where applicants were most deficient for six of the ten occupations. Further, almost 80 percent of employers of database security engineers identified communication skills as the skill-set applicants were most deficient. Of the six skill-sets considered, only technical competence was close to communication skills as an area that employers consistently identified as an area of deficiency among current applicants.

> SVWIN Opportunity – Given the industry's focus on current technical skills usually tied to some type of certification it is not surprising that employers would identify communication skills as an area that is largely deficient among current applicants. The largely technical focus of the information security arena provides an opportunity for SVWIN to assist the industry develop the soft skills particularly the communication skills of current employees and future applicants. This could be done by assisting the current education and training providers in the region or developing stand alone programs working in conjunction with current employers.

COMPONENT A: NATIONAL AND INTERNATIONAL TRENDS FOR HOMELAND AND INFORMATION SECURITY

Since the tragic events of 9-11, "Homeland security" has become an increasingly familiar phrase to the general public. The nation has responded accordingly, funding a multitude of programs including upgrading of border and airport security, the passage of new laws designed to thwart similar attacks, and governmental re-organization. Information security has also moved to the forefront of our collective attention as individuals seek to protect themselves from identity theft and firms work to ensure that their network and their customers information is secured from outside intruders. The United States government and its private employers are looking for new technologies to help in the preparedness to threats to the nation as well as its information technology infrastructure.

The diverse nature of this cluster requires that we clarify the structure of its workforce. The cluster itself has been delineated into two different sectors;

- **The Information Security Sector** protects networks and electronic information systems from unauthorized access to sensitive information. This sector's objectives include ensuring the integrity of data, implementing appropriate privacy standards for information, and protecting information systems from external sources that attempt to disrupt the functionality of the network.

- **The Homeland Security Sector** focuses on security services that are funded directly or indirectly through the federal government to protect residents from manmade and natural catastrophes. This includes providing security for airports, ports, and other transportation hubs as well as providing good and services for those who are directly responsible for Homeland Security.

It should also be noted that the entire workforce for Homeland and Information Security goes well beyond those firms that provide security related goods and services. This study will examine the industry for security related goods and services but just as important, or possibly more so, focus on the entire Homeland and Information Security workforce, often information security occupations, that exist within industries such as financial services, healthcare, telecommunications, and transportation.

The industry definition used in this study is based on the North American Industry Classification System's (NAICS) definition of several industries relating to technology. The NAICS system is what has been used since 1997 by the U.S. Government to group businesses and calculate economic activity among industries in the U.S. economy. NAICS is an economic classification system based on a single economic concept. Economic units that use like processes to produce goods or services are grouped together.

This list of NAICS industries was compiled from careful analysis of *Access Granted: Decrypting Opportunities in Information Technology* study and two industry reports from Forrester, *Information Security Versus IT Security* and *IT Trends 2003: Network Security*.

The NAICS system was developed to categorize established industries such as healthcare and hospitality. Due to the emerging nature of Homeland and Information Security, not all the companies in each NAICS code we have grouped together will produce a product related to the industry.

Once we have filtered out the companies that are related to the industry, our next task is to group them into similar sectors. There are many different types of companies found in the Homeland and Information Security Cluster, doing business in several different markets. Due to the nature of the cluster, we have broken down the cluster into two different sectors, the Information Security Sector and the Homeland Security Sector. Figure 1 shows this breakdown, along with a more detailed breakdown of the sectors into smaller sub-sectors, which are defined as:

Information Security Sector:

> **Software –** Companies who produce computer software used to secure networks, databases, etc.

> **Hardware –** Companies who produce computer hardware and peripherals that are used for security purposes. Examples could be electronic card readers or fingerprint scanners.

> **Other -** Companies who produce other types of security products.

Homeland Security Sector:

> **Private –** Companies who typically do business with customers in the private sector.

> **Public –** Companies who are not funded by the federal government.

Figure 1 Homeland and Information Security Cluster
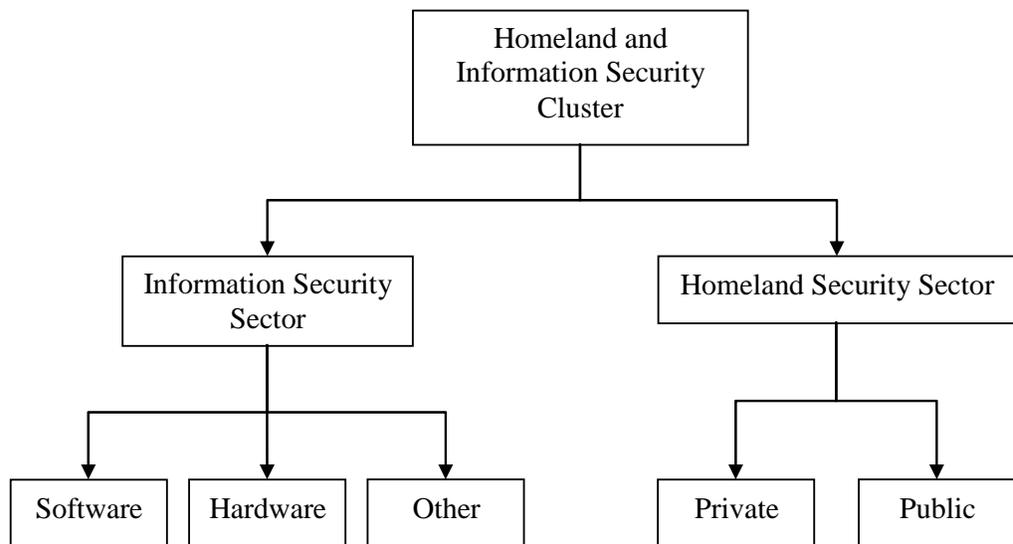
Table 6 shows the NAICS codes used to define the Homeland Security and Information Cluster and which sub-sector they fall in. Naturally, not all companies grouped in each NAICS code relates directly to the sectors discussed in this study, so a proportion of each will be used. The column labeled "Concentration" shows the proportion of Homeland Security and Information companies contained in each NAICS code. Extracting the correct companies was done with careful review of Hoover's proprietary industry classification system and its database of companies classified under the defined NAICS codes for Alameda, San Francisco, San Mateo, Santa Clara, Contra Costa, and Marin Counties.

Table 6 NAICS Codes Used to Define the Homeland and Information Security Cluster

NAICS	Description	Sub-sector	Concentration
3341	Computer and Peripheral Equipment Manufacturing	Hardware	High
3332	Industrial Machinery Manufacturing	Hardware	Low
3333	Commercial and Service Industry Machinery Manufacturing	Hardware	Low
3342	Communications Equipment Manufacturing	Hardware	High
3343	Audio and Video Equipment Manufacturing	Hardware	Low
3344	Semiconductor and Other Electronic Component Manufacturing	Hardware	High
3346	Manufacturing and Reproducing Magnetic and Optical Media	Hardware	Low
3353	Electrical Equipment Manufacturing	Hardware	Low
3359	Other Electrical Equipment and Component Manufacturing	Hardware	Medium
3364	Aerospace Product and Parts Manufacturing	Hardware	Medium
4236	Electrical and Electronic Goods Merchant Wholesalers	Other	Low
4541	Electronic Shopping and Mail-Order Houses	Other	Low
4812	Nonscheduled Air Transportation	Non-technology Security	Low
4881	Support Activities for Air Transportation	Non-technology Security	Low
5112	Software Publishers	Software	High
5179	Other Telecommunications	Other	Low
5181	Internet Service Providers and Web Search Portals	Software	Low
5182	Data Processing, Hosting, and Related Services	Software	Medium
5191	Other Information Services	Secondary	Medium
5324	Commercial and Industrial Machinery and Equipment Rental and Leasing	Hardware	Low
5413	Architectural, Engineering, and Related Services	Other	Low
5415	Computer Systems Design and Related Services	Software	Medium
5416	Management, Scientific, and Technical Consulting Services	Other	Medium
5417	Scientific Research and Development Services	Other	Low
5419	Other Professional, Scientific, and Technical Services	Non-technology Security	Low
5616	Investigation and Security Services	Non-technology Security	High
6114	Business Schools and Computer and Management Training	Secondary	Medium
8113	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	Hardware	Low
9271	Space Research and Technology	Other	Medium
9281	National Security and International Affairs	Non-technology Security	High

The Hoover's database had a total of 1,492 companies listed in these six counties for these NAICS codes. The Hoover's database does not contain all companies in the area, but does contain a subset of the larger, more established companies. Table 7 and 8 show a profile of the top employers in each sector.

Table 7 Profile of Top Employers in the Information Security Sector[i]

Company Name	Company type	2004 Sales (mil.)	1-Year Sales Growth	2004 Net Income (mil.)	1-Year Net Income Growth	2004 Employees	1-Year Employee Growth
Infosys Technologies Limited	Public	$1,592.0	49.8%	$419.0	55.0%	36,800	43.2%
Cisco Systems, Inc.	Public	$22,045.0	16.8%	$4,401.0	23.0%	34,000	0.0%
VeriSign, Inc.	Public	$1,166.5	10.6%	$186.2	NA	3,206	28.2%
McAfee, Inc.	Public	$910.5	-2.8%	$225.1	220.7%	2,950	-20.3%
Check Point Software Technologies Ltd.	Public	$515.4	19.1%	$248.4	1.8%	1,344	12.5%
Macrovision Corporation	Public	$182.1	41.9%	$36.7	23.6%	606	73.6%
Secure Computing Corporation	Public	$93.4	22.6%	$12.8	54.2%	378	1.1%
SonicWALL, Inc.	Public	$125.6	33.1%	-$1.3	NA	335	-3.2%
Magal Security Systems Ltd.	Public	$61.0	2.7%	$1.1	-54.2%	303	5.2%
ActivCard Corp.	Public	$26.9	-29.8%	-$27.4	NA	241	-25.6%

Table 8 Profile of Top Employers in the Homeland Security Sector[1]

Company Name	Company type	2004 Sales (mil.)	1-Year Sales Growth	2004 Net Income (mil.)	1-Year Net Income Growth	2004 Employees	1-Year Employee Growth
ABM Industries Incorporated	Public	$2,416.2	6.8%	$30.5	-66.3%	70,000	9.4%
AMBI Protective Services, Inc.	Private	$20.8	NA	NA	NA	1,842	NA
Magal Security Systems Ltd.	Public	$61.0	2.7%	$1.1	-54.2%	303	5.2%
Landmark Protection, Inc.	Private	$5.0	NA	NA	NA	300	NA
Ampex Corporation	Public	$101.5	134.0%	$46.4	NA	127	-12.4%

Industry Profile:

Homeland Security

The federal government has pumped more than $12 billion into homeland security research and development over the past four budget years. Homeland security is probably going to be the government's biggest employer in the next decade," says Steven David, who directs the Homeland security certificate program at Johns Hopkins University. Worldwide, the (traditional) security market is projected to grow at **an annual rate of 7.7 percent through 2008**, according to industry market research group Freedonia.

Information Security

In recent years, while the demand for general IT knowledge has declined, the demand for IT security professionals has increased. IDC forecasts an increase of more than 2.1 million information security professionals by 2008, worldwide. This gives a **compound annual growth rate of 13.7 percent**, in the information security workforce, from the estimated 1.15 million professionals in 2003. IDC also predicts that spending on information security training and education in the United States will grow to $1 billion by 2006 as corporations look to ensure the security of the systems.

The strong growth expectations in employment for the security cluster are being driven by three important trends[ii]:

[i] All data is company-wide, not for the Silicon Valley office only. Data for Silicon Valley offices will be collected in the Primary Research.

1. External and Internal Threats – After 9/11 and more recently the attacks in London, the threat of international terrorism is well understood and the government has shown an increasing willingness to fund projects and programs that lower the possibility of future international terrorist activities. However internal threats from computer hackers and those involved in identity theft are increasingly important to both consumers and corporations.

2. Government Legislation and Regulations – Legislation is becoming more comprehensive and specific about the requirements that must be in place to protect customer privacy as well as overall network security.

3. Technology – The increased adoption of new communication methods such as instant messaging, wireless, and VoIP (Voice over IP) create more dynamic challenges for corporate security.

According to the *(ISC)[2] Global Information Security Workforce Study*, a typical IT department within an organization employs 10 full-time information security professionals and five part-time staff members. The following bullets provide a general profile of information security professionals in the United States[iii].

1. Approximately 87% of Information Security professionals are male

2. Over 75% of Information Security professionals have at least a Bachelor's degree as a minimum level of education

3. Almost two-thirds of Information Security Professionals earn at least $80,000 a year and approximately one-third make at least $100,000 a year.

[ii] As identified by IDC in the White Paper: ***(ISC)[2] Global Information Security Workforce Study***. Allen Carey. November 2004.
[iii] Data was taken from 2004 IDC survey, from the Americas' region, with a high concentration of responses from the United States

HOMELAND AND INFORMATION SECURITY: OCCUPATIONAL ASSESSMENT

Research Findings

Workers in the Information Security industry can be employed in either a company that produces goods and services directly related to network security or in an unrelated company that has information security as an internal responsibility. Figure 2 shows the departments that are responsible for information security. The IT department (33%) is most often responsible for information security, followed by Executive management (21%) and the Security department (17%).

Figure 2 Information Security
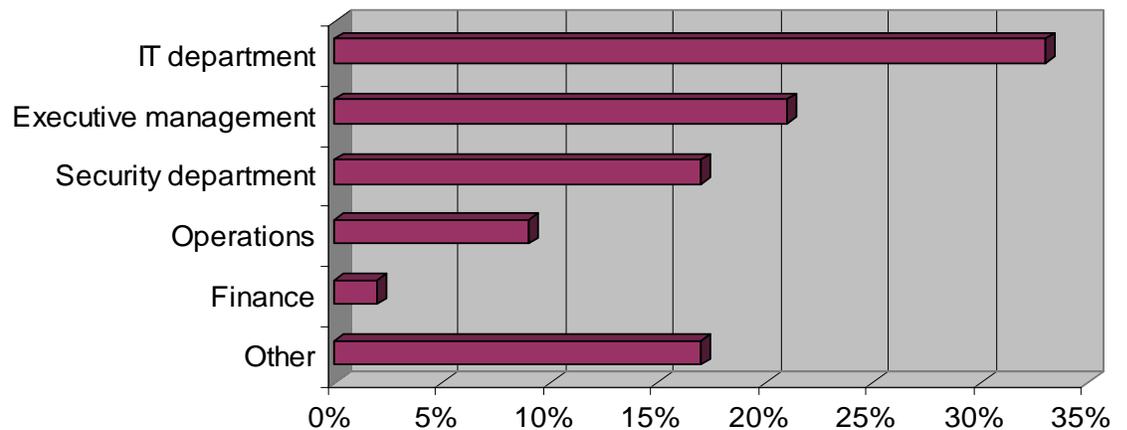
Due to the nature of the information security sector, it will not be possible to use a large list of occupations from the Standard Occupational Classification (SOC) system. Instead, we have defined four SOC codes as primary occupations for the Information Security sector and one primary occupation for the Homeland Security sector.

Computer Systems Analysts

Computer Systems Analysts evaluate science, engineering, business, and all other data processing problems for application to electronic data processing systems. They analyze user requirements, procedures, and problems to automate or improve existing systems and review computer system capabilities, workflow, and scheduling limitations. They may also analyze or recommend commercially available software and may supervise computer programmers.

Table 9 shows that there are 19,590 Computer Systems Analysts employed in the six county Bay Area. The 25th percentile wage is $29.84 per hour and the median wage is $37.36 per hour.

Table 9 Employment and Wages

Total Employment	Wage - 25th Percentile	Wage - 50th Percentile	Wage - 75th Percentile
19,590	$29.84	$37.36	$45.77

As shown in Figure 3, "Basic business knowledge" (60%) was the most requested skill in recent job postings, followed by "Management skills" (53%) and "Communication skills" (47%). "Systems security knowledge" was requested by employers in 24 percent of California job listings on America's Job Bank over the last 90 days.

Figure 3 Skills Requested by Employers
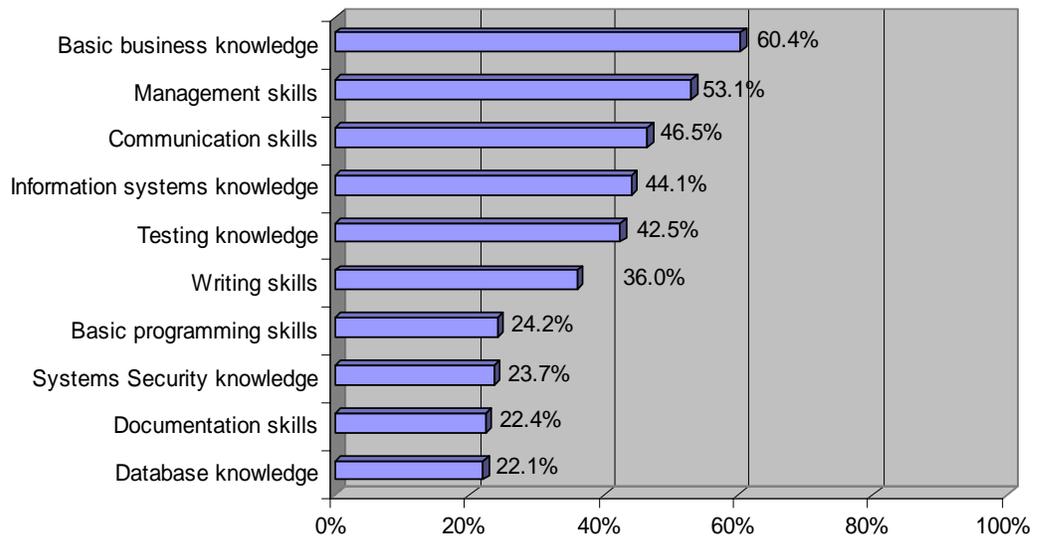
Over half (51%) of the job listings in the last 90 days did not specify an education level that employers would prefer, as shown in Figure 4. Forty percent of employers stated they would like a candidate with a "Bachelor's degree" in recent California job listings.

Figure 4 Education Level Requested by Employers
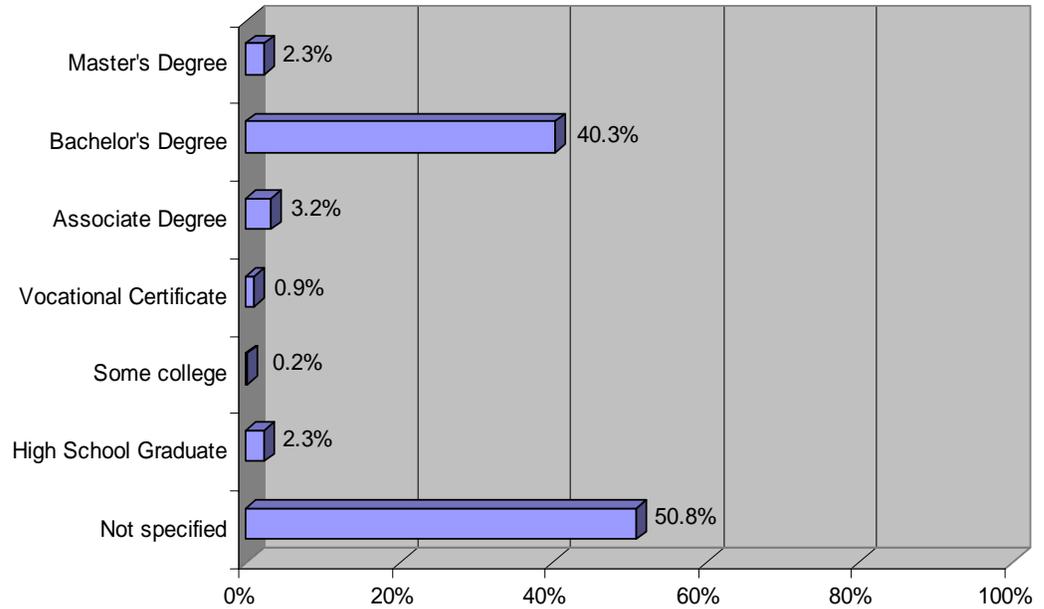
Figure 5 shows that 19 percent of employers request "13-24 months" of experience over the past 90 days in California job listings. The majority of recent job listings, 59 percent, did not specify what experience level they would prefer.

Figure 5 Experience Level Requested by Employers
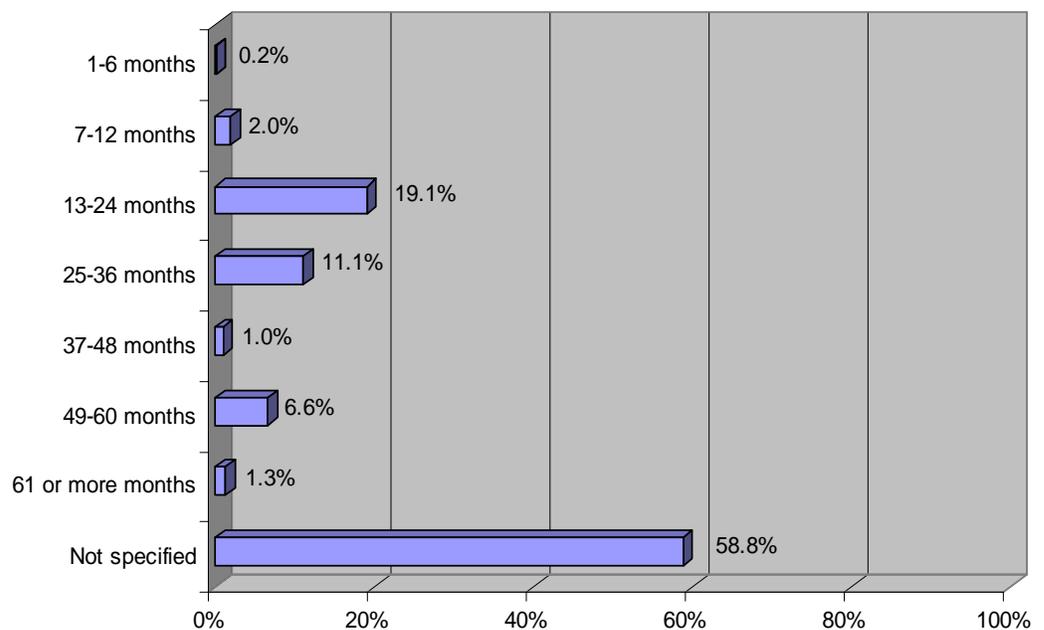
<u>Network and Computer Systems Administrators</u>

Network and Computer Systems Administrators install, configure, and support an organization's local area network (LAN), wide area network (WAN), and Internet system or a segment of a network system. They also maintain network hardware and software, monitor network to ensure network availability to all system users, and perform necessary maintenance to support network availability. They also may supervise other network support and client server specialists and plan, coordinate, and implement network security measures.

Table 10 shows that there are 11,350 Network and Computer Systems Administrators employed in the six county Bay Area. The 25th percentile wage is $29.66 per hour and the median wage is $36.60 per hour.

Table 10 Employment and Wages

Total Employment	Wage - 25th Percentile	Wage - 50th Percentile	Wage - 75th Percentile
11,350	$29.66	$36.60	$44.82

As shown in Figure 6, "Management skills" (36%) was the most requested skill in recent job postings. "Systems security knowledge" was requested by employers in 24 percent of California job listings on America's Job Bank over the last 90 days.

Figure 6 Skills Requested by Employers
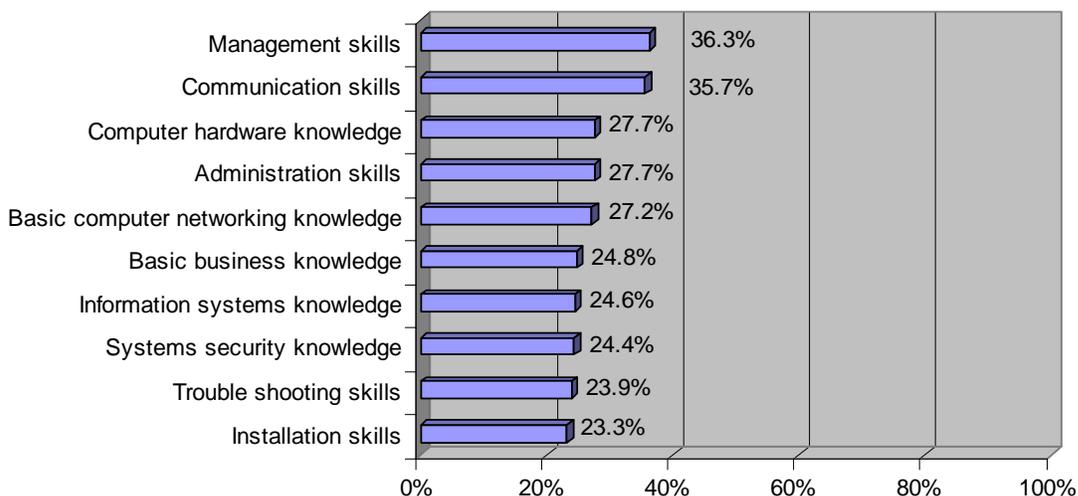
Over one-third (35%) of the job listings in the last 90 days did not specify an education level that employers would prefer, as shown in Figure 7. Thirty-one percent of employers stated they would like a candidate to be a "High School Graduate" and 22 percent would prefer a "Bachelor's degree," according to recent California job listings.

Figure 7 Education Level Requested by Employers
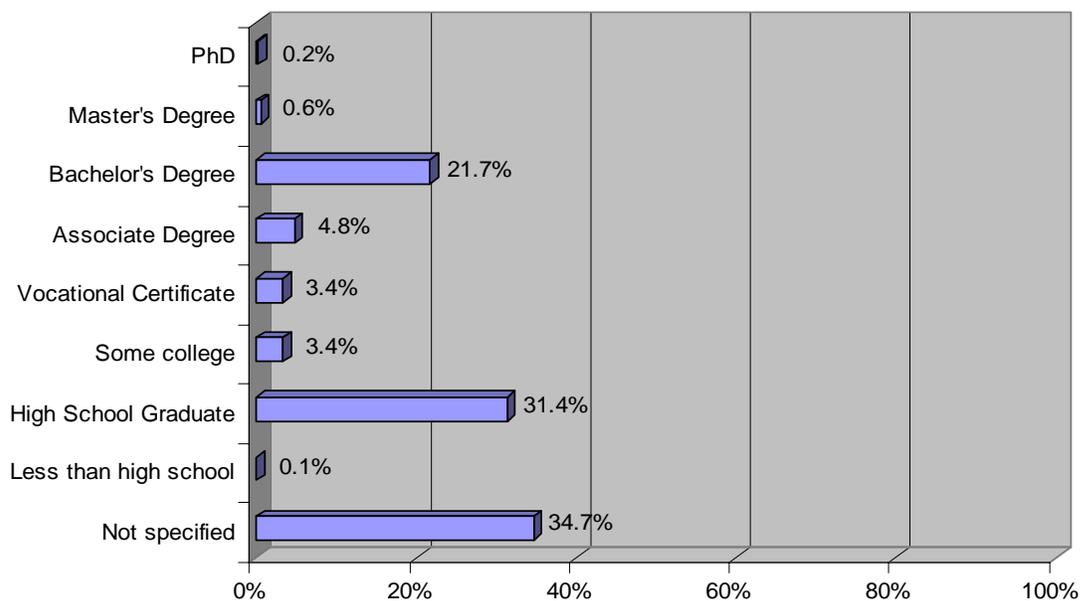
Figure 8 shows that 10 percent of employers request "13-24 months" of experience over the past 90 days in California job listings. The majority of recent job listings, 64 percent, did not specify what experience level they would prefer.

Figure 8 Experience Level Requested by Employers
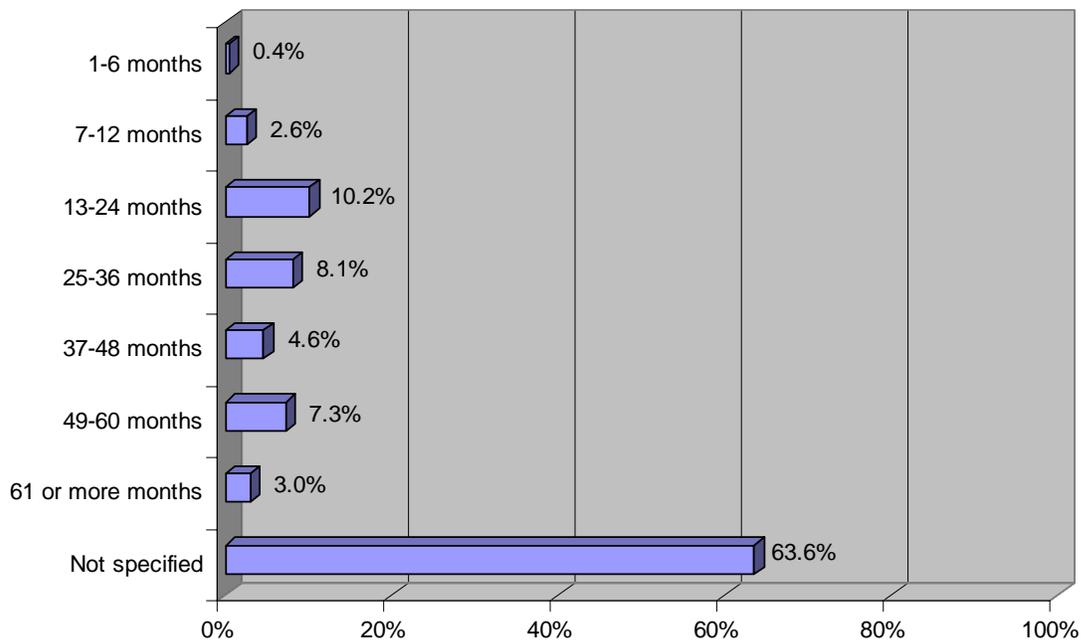
<u>Computer Software Engineers, Systems Software</u>

Computer Software Engineers research, design, develop, and test operating systems-level software, compilers, and network distribution software for medical, industrial, military, communications, aerospace, business, scientific, and general computing applications. They set operational specifications and formulate and analyze software requirements. Also, they apply principles and techniques of computer science, engineering, and mathematical analysis.

Table 11 shows that there are 28,640 Computer Software Engineers employed in the six county Bay Area. The 25th percentile wage is $38.90 per hour and the median wage is $47.41 per hour.

<u>Table 11 Employment and Wages</u>

Total Employment	Wage - 25th Percentile	Wage - 50th Percentile	Wage - 75th Percentile
28,640	$38.90	$47.41	$58.12

Figure 9 shows the top skills requested by employers in California through job postings over the last 90 days on America's Job Bank. "Testing knowledge" was the most requested skill for this occupation with 49 percent of job listings requesting it. "Systems security knowledge" was requested by 29 percent of employers in recent job postings.

<u>Figure 9 Skills Requested by Employers</u>

Figure 9 Skills Requested by Employers

Skill	Percent
Testing knowledge	49.2%
Basic engineering knowledge	45.5%
Communication skills	42.4%
Basic programming skills	38.9%
Management skills	37.4%
C++ kowledge	35.5%
Software developnment knowledge	35.0%
Writing skills	34.3%
Software engineering knowledge	30.7%
Systems security knowledge	28.8%
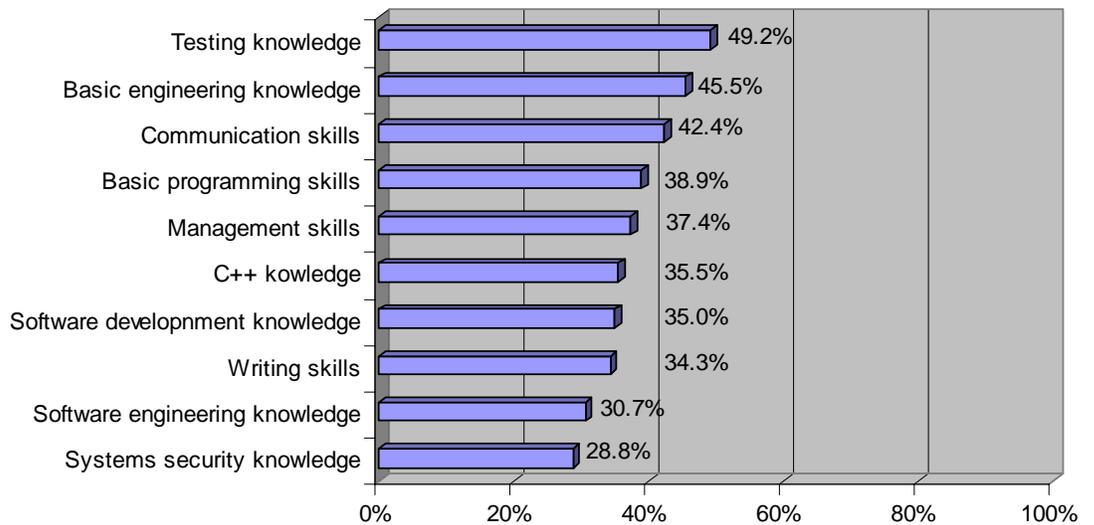
Figure 10 shows that a "Bachelor's degree" (35%) is the most requested level of education by employers. A "Master's degree" (6%) was the only other education levels requested in at least five percent of California job listings on America's Job Bank over the last 90 days.

Figure 10 Education Level Requested by Employers
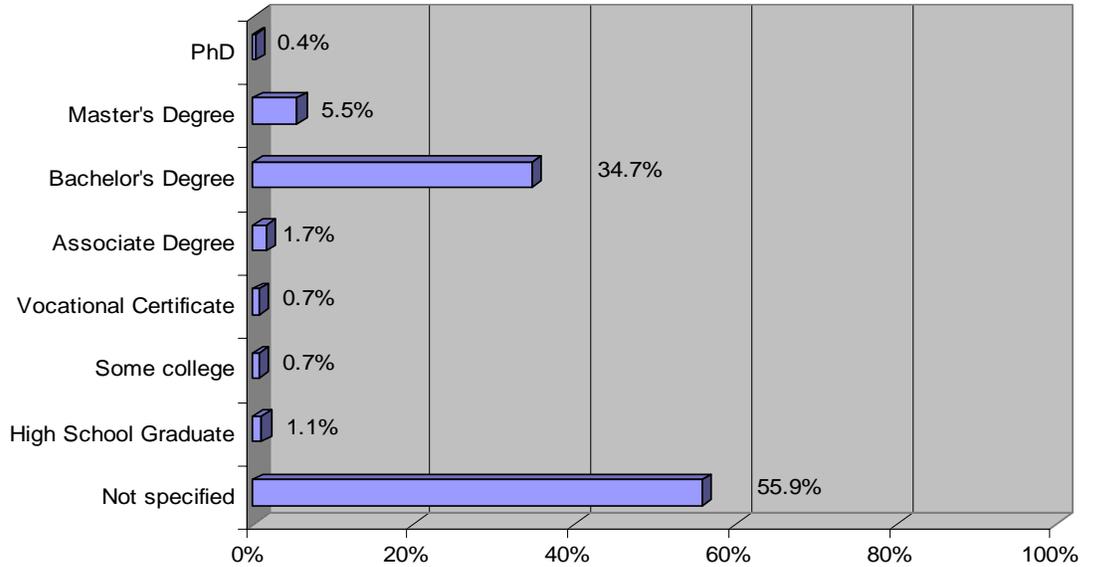
Between "13 and 24 months" (9%) of experience is what employers most frequently requested in job listings, followed closely by "49-60 months" (9%) and "61 or more months" (9%). About two-thirds of recent California job postings (66%) in the last 90 days did not specify a specific amount of experience that the employer would prefer.

Figure 11 Experience Level Requested by Employers
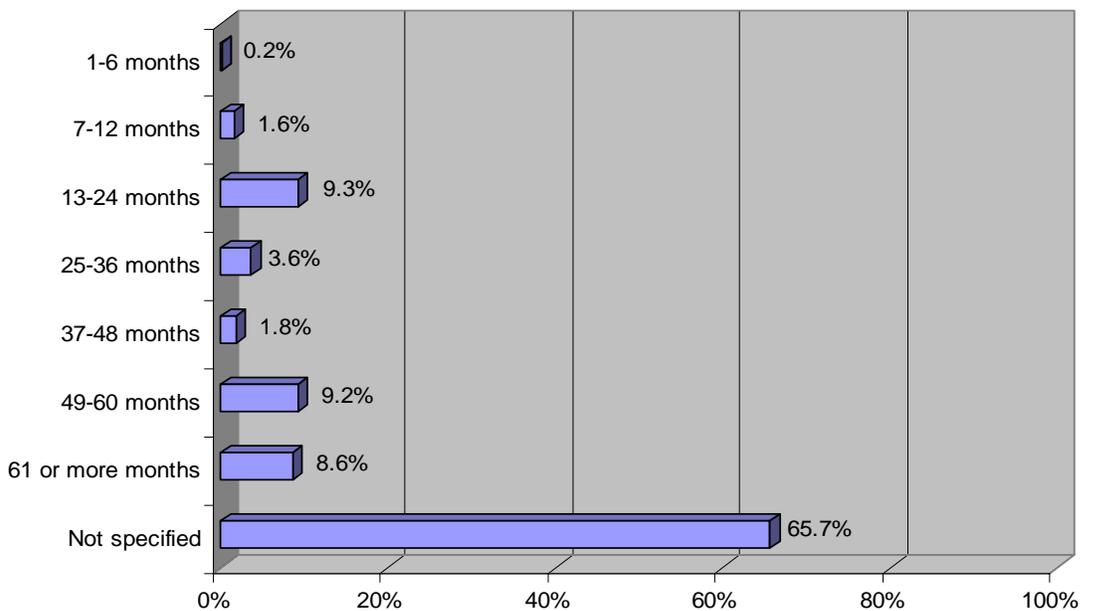
<u>Computer Programmers</u>

Computer Programmers convert project specifications and statements of problems and procedures to detailed logical flow charts for coding into computer language, and develop and write computer programs to store, locate, and retrieve specific documents, data, and information. They may also program web sites.

Table 12 shows that there are 17,550 Computer Programmers employed in the area. The 25th percentile wage is $31.12 per hour and the median wage is $40.26 per hour.

Table 12 Employment and Wages

Total Employment	Wage - 25th Percentile	Wage - 50th Percentile	Wage - 75th Percentile
17,550	$31.12	$40.26	$49.35

Figure 12 shows the top skills requested by employers in California through job postings over the last 90 days on America's Job Bank. "Basic programming skills" was the most requested skill for this occupation with 42 percent of job listings requesting it. "Systems security knowledge" was not one of the top ten skills requested by employers in recent job postings.

Figure 12 Skills Requested by Employers
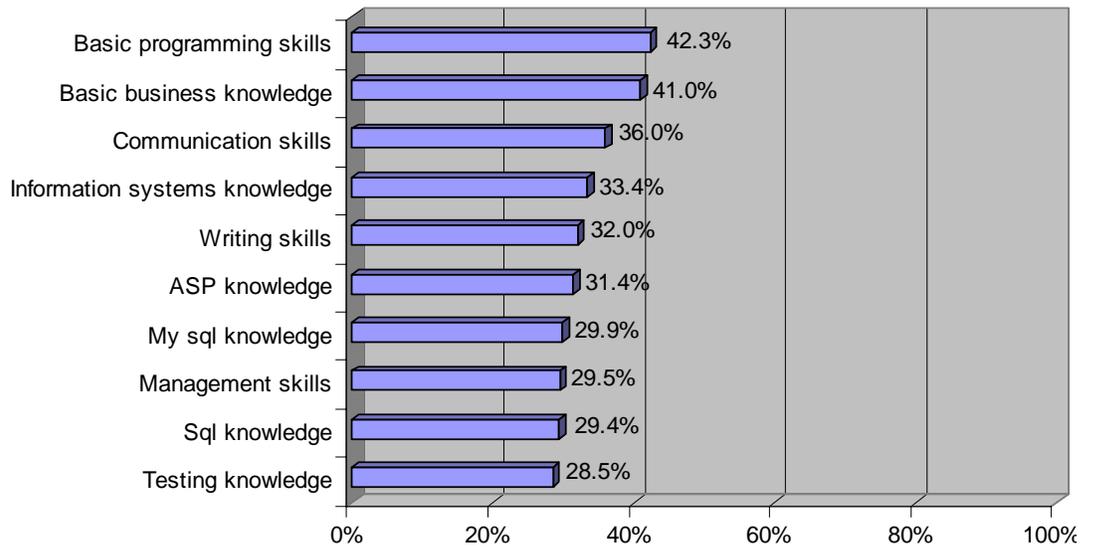
Figure 13 shows that a "Bachelor's degree" (21%) is the most requested level of education by employers. A "High School Graduate" (7%) were the only other education levels requested in at least five percent of California job listings on America's Job Bank over the last 90 days. Almost two-thirds (65%) did not specify an education level in the job posting.

Figure 13 Education Level Requested by Employers
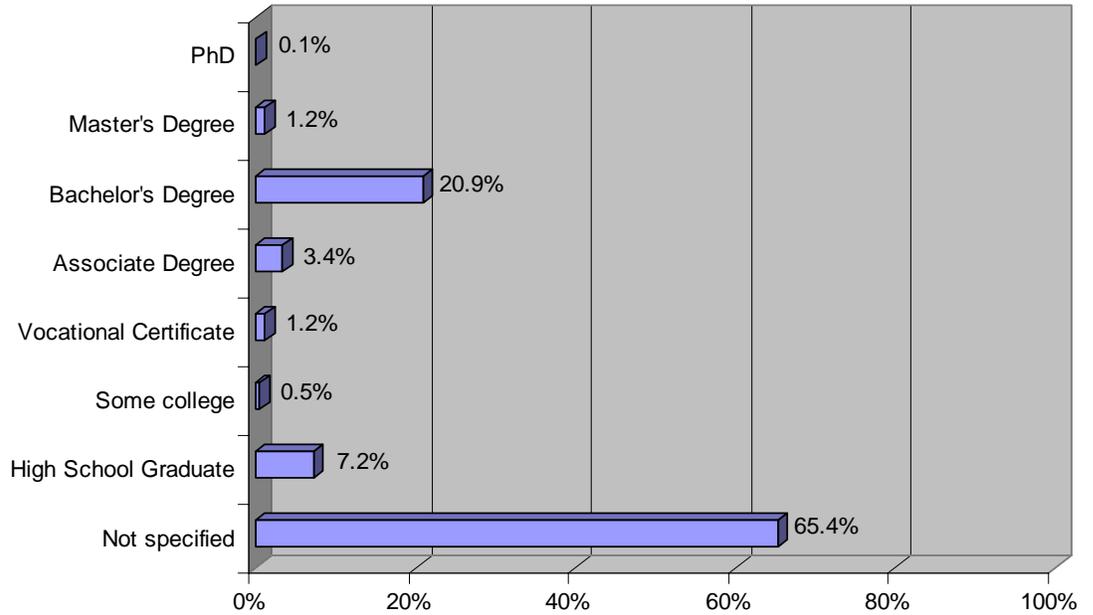
Between "13 and 24 months" (12%) of experience is what employers most frequently requested in job listings, followed closely by "25-36 months" (5%) and "49-60 months" (5%). Almost three-quarters of recent California job postings (73%) in the last 90 days did not specify a specific amount of experience that the employer would prefer.

Figure 14 Experience Level Requested by Employers
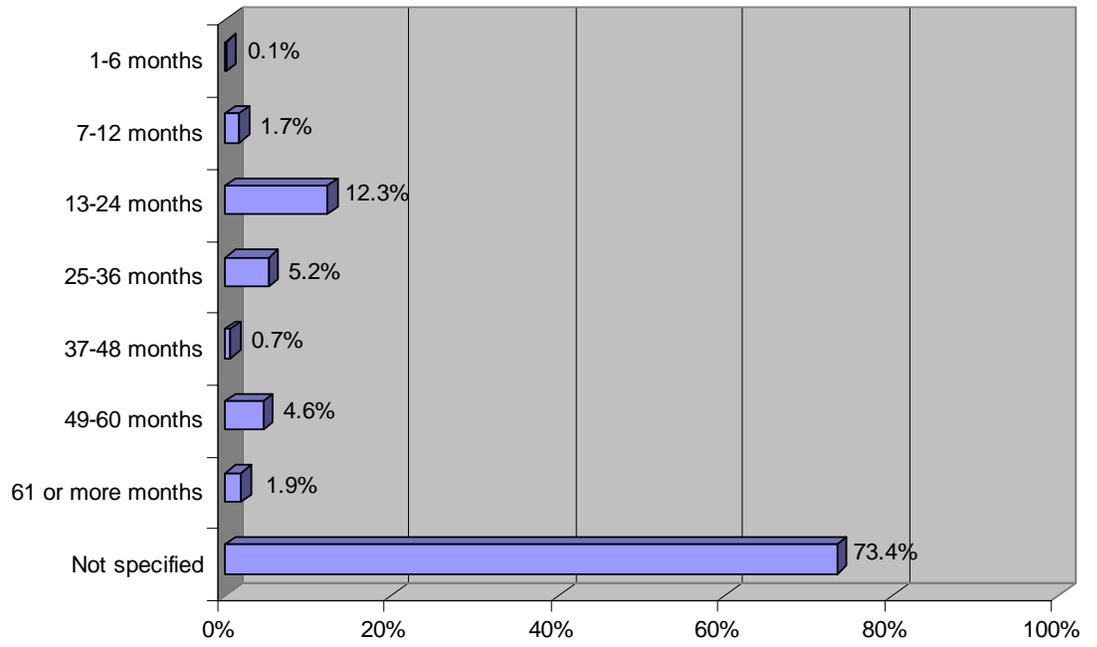
<u>Security Guards</u>

Security Guards patrol, guard, or monitor premises to prevent theft, violence, or infractions of rules.

Table 13 shows that there are 33,290 Security Guards employed in the area. The 25th percentile wage is $10.02 per hour and the median wage is $11.63 per hour.

Table 13 Employment and Wages

Total Employment	Wage - 25th Percentile	Wage - 50th Percentile	Wage - 75th Percentile
33,290	$10.02	$11.63	$13.94

Figure 15 shows the top skills requested by employers in California through job postings over the last 90 days on America's Job Bank. "Systems security knowledge" was the most requested skill for this occupation with 71 percent of job listings requesting it. "Writing skills" (40%), "Communication skills" (28%), and "Surveillance skills" (28%) were all requested in over one-quarter of recent job postings.

Figure 15 Skills Requested by Employers
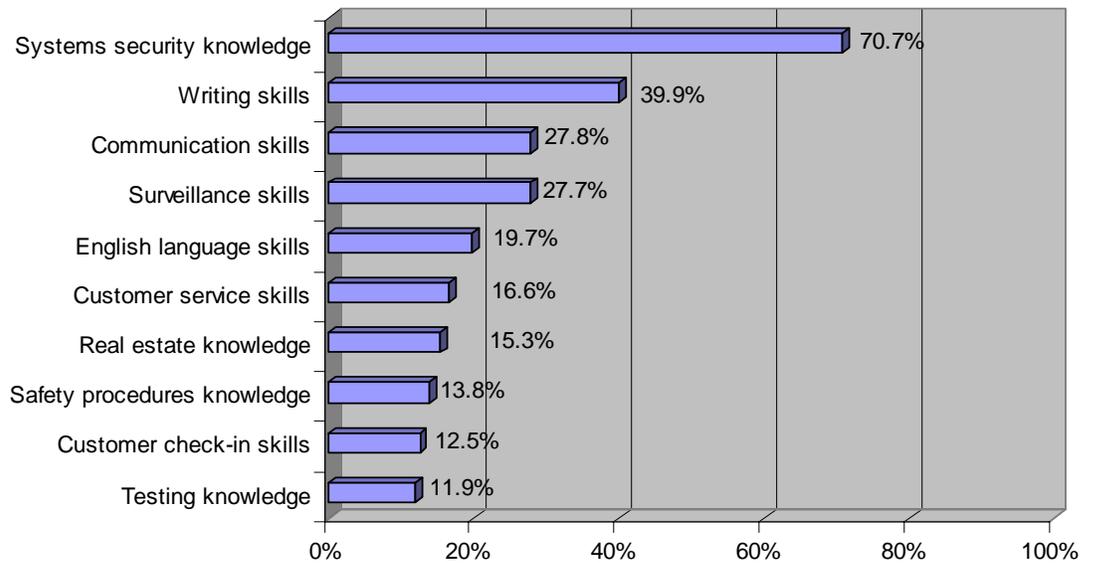
Figure 16 shows that a "High School Graduate" (63%) is the most requested level of education by employers. Thirty-four percent of California job listings on America's Job Bank over the last 90 days did not specify a preferred education level.

Figure 16 Education Level Requested by Employers
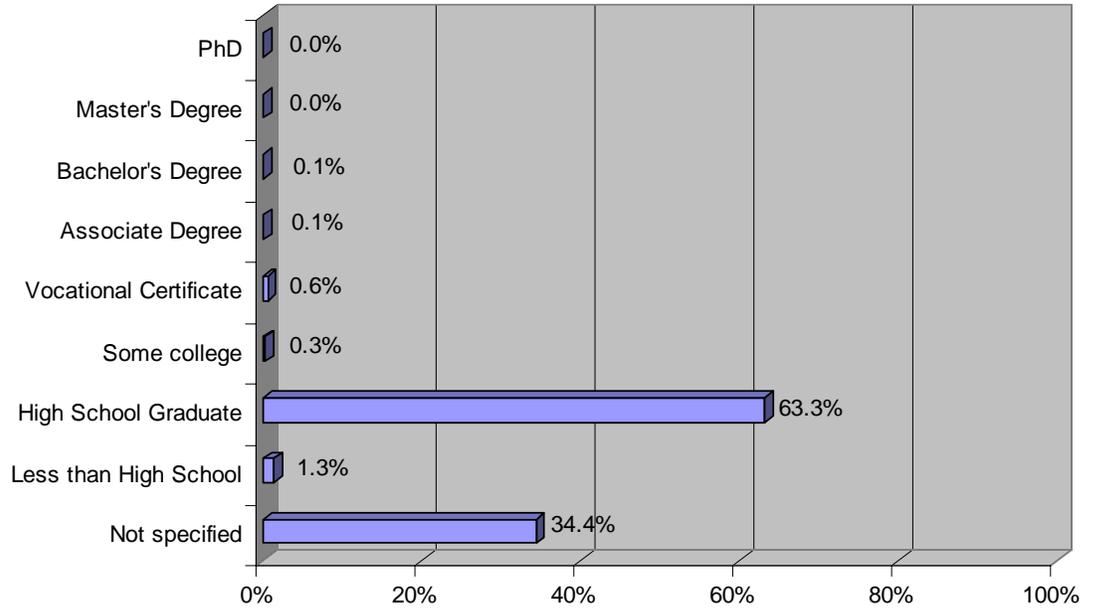
Between "7 and 12 months" (15%) of experience is what employers most frequently requested in job listings, followed closely by "1-6 months" (10%) and "13-24 months" (6%). Over two-thirds of recent California job postings (69%) in the last 90 days did not specify a specific amount of experience that the employer would prefer.

Figure 17 Experience Level Requested by Employers
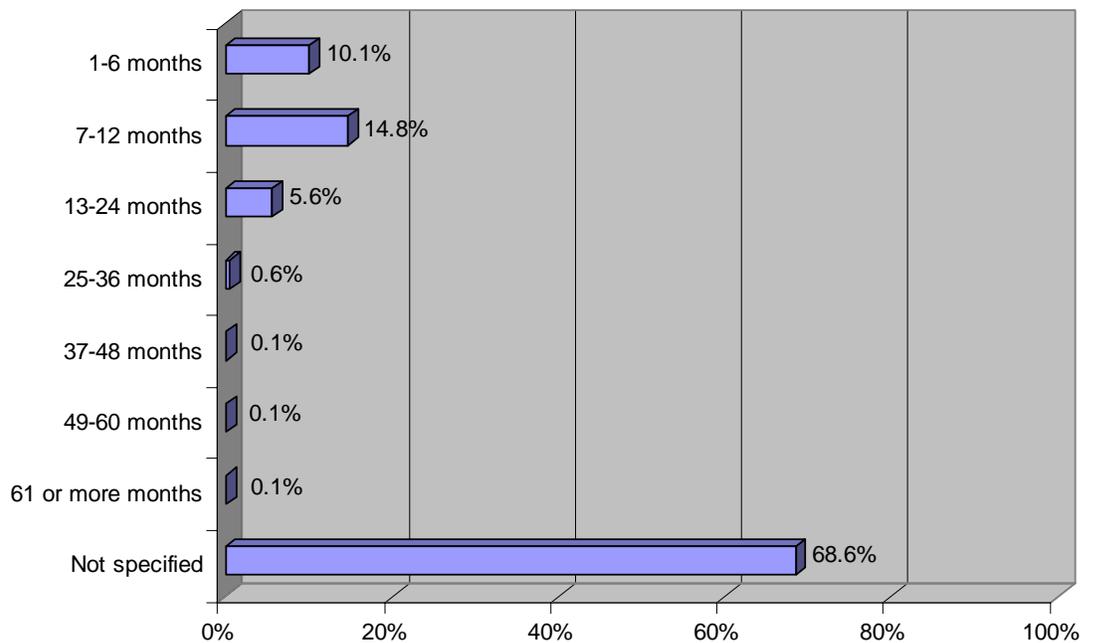
COMPONENT B: REGIONAL ASSESSMENT OF EMPLOYERS

Information Technology (IT) security firms and large firms (defined as having more than 100 employees) with an internal IT department were interviewed to get a better description of the industry in the six county Bay Area. First, respondents were asked a series of questions relating to how many employees they had working at their location as well as growth and retirement over the next 12 months.

1. How many permanent full-time employees work at your business location?

2. How many permanent part-time employees work at your business location?

3. How many temporary and/or seasonal employees currently work at your business location?

4. Including all full-time and part-time employees, how many permanent employees do you expect to have 12 months from now?

5. How many temporary and/or seasonal employees do you expect to have 12 months from now?

9. In the next 3 years, what percentage of your current employees do you expect will retire?

Table 14 shows that there are 355,068 people employed in the Information Security Sector in the six county Bay Area. Using the results from the survey we can estimate that there are 321,604 workers (91%) employed on a permanent full-time basis, 5,642 (2%) employed on a permanent part-time basis, and 27,822 (8%) employed temporary workers. There is also expected to be a 7% growth in employment while 2% are expected to retire in the next year.

Table 14 Industry Employment – Current and Projected

Total employees	Full-time	Part-time	Temporary	Expected growth in employment	Expected retirement in next 12 months
355,068	321,604	5,642	27,822	23,736	6,031
100%	90.6%	1.6%	7.8%	6.7%	1.7%

The next section of questions asked respondents about their hiring and recruitment practices.

> 6. When a non entry-level position becomes available in your firm, do you more often hire from outside or promote from within the company?

As shown in Figure 18, almost half of the firms (47%) prefer to "Recruit from outside" the firm and only 20 percent prefer to "Promote from within."

Figure 18 Hiring Practices
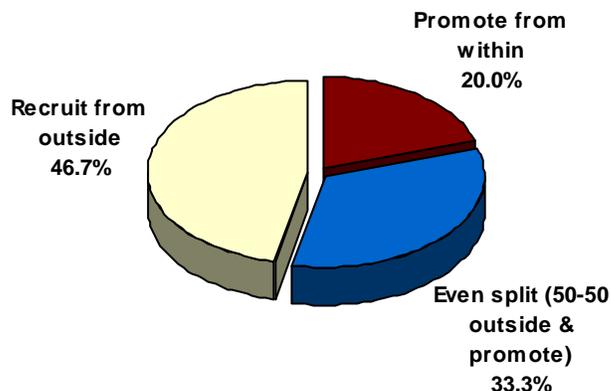
> 7. How often does your business recruit individuals from outside the Bay Area but within California for employment?

Figure 19 shows that about one quarter of the time (26%) firms either "Always" (17%) or "Frequently" (9%) recruit from outside the Bay Area. Thirty-five percent of respondents stated they either "Never" (9%) or "Rarely" (26%) recruit from outside the area.

> SVWIN Opportunity - The fact that only 35 percent of businesses recruit individuals from outside the Bay Area "Rarely" or "Never" presents a clear need for the development of a stronger candidate pool for the Information Security workforce in the Bay Area.

Figure 19 Recruitment from Outside Bay Area
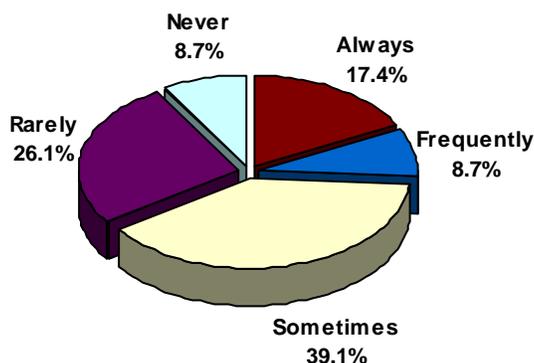
> 8. How often does your business recruit individuals from outside California for employment?

As shown in Figure 20, 48 percent of respondents report "Rarely" recruiting from outside the state. As in the previous question, 26 percent stated they either "Always" (9%) or "Frequently" (17%) recruit from outside California.

Figure 20 Recruitment from Outside California
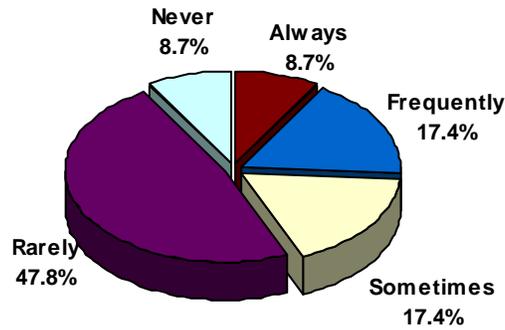
Respondents were next asked about their difficulty in dealing with several different workforce issues.

> 10. Next, I'm going to read a list of issues facing the region's workforce in the coming years, please tell me how much difficulty your firm faces in addressing these workforce needs.

Figure 21 shows that over half the respondents (57%) report having "No difficulty" recruiting entry-level employees with proper training and education. Fifty-seven percent also stated they have "No difficulty" keeping the workers up to date with new technology and practices. Sixty-five percent of firms have trouble recruiting non-entry level employees with the proper skills and experience.

Figure 21 Difficulty Addressing Workforce Needs

Recruiting non entry-level employees with adequate skills and experience: Great difficulty 13.0%, Some difficulty 52.2%, No difficulty 34.8%

Recruiting employees with reasonable salary requirements: Great difficulty 17.4%, Some difficulty 43.5%, No difficulty 39.1%

Developing strategies to retain valuable employees: Great difficulty 8.7%, Some difficulty 43.5%, No difficulty 48%

Keeping current workers properly educated and trained on new technologies and policies: Great difficulty 13.0%, Some difficulty 30.4%, No difficulty 56.5%

Replacing retired workers with qualified candidates from outside the firm: Great difficulty 8.7%, Some difficulty 30.4%, No difficulty 43.5%, DK/NA 17.4%

Recruiting entry-level employees with adequate training and education: Some difficulty 30.4%, No difficulty 56.5%, DK/NA 8.7%

Legend: Great difficulty, Some difficulty, No difficulty, DK/NA

Next, respondents were asked about their employee development practices.

> 11. Next, I'd like to ask you about employee development practices at your business location. As I read each of the following employee development practices, please indicate whether your business uses each practice.

As shown in Figure 22, almost all firms (92%) utilize "Informal on-the-job training." Other top development practices are "Formal on-the-job training" (78%) and "Employer-paid outside training" (74%).

> SVWIN Opportunity – While employers in this cluster are largely willing and committed to internal employee development practices, career development programs or career ladders have not been implemented by most firms that have information security employees. Given the need for retaining and developing their workforce, a career ladder program should be developed with industry collaboration.

Figure 22 Development Practices
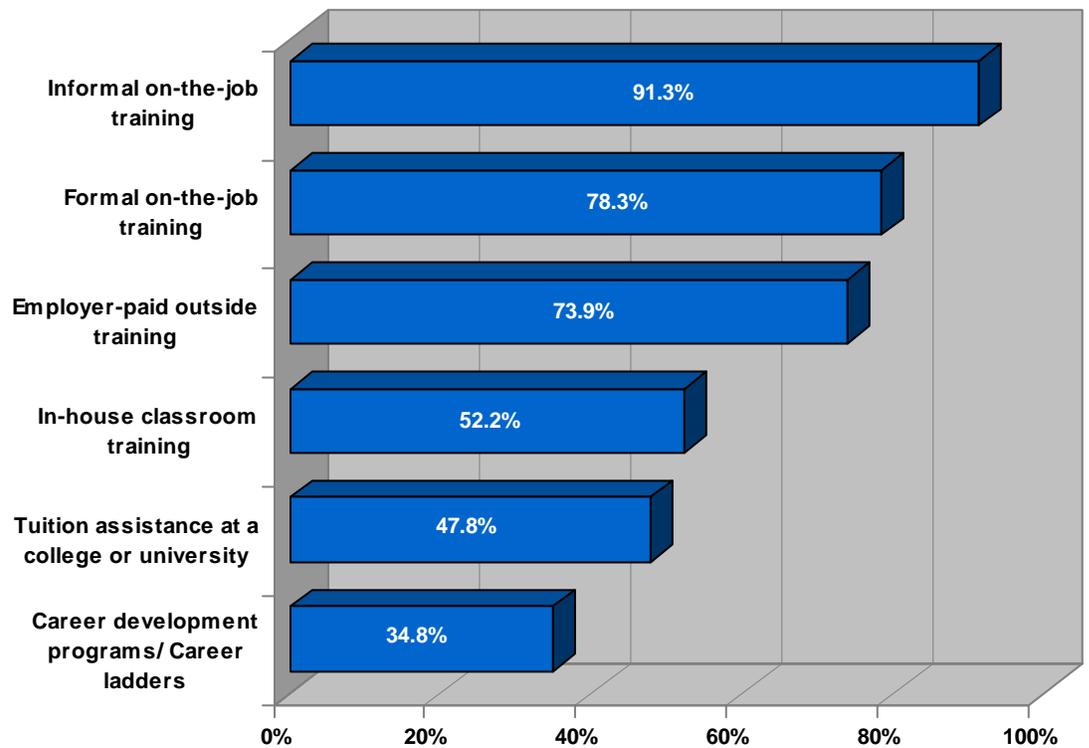
The next series of questions were about specific IT security occupations. First, respondents were asked about the growth of their employment in each occupation.

> 12. Do you have employees who fit this occupational description at your business location?
>
> 13. As I read each of the following occupations, please tell me how many individuals at your business location are currently employed in the occupation.
>
> 14. How many of the current _____, do you expect, will **NOT** be working at this company in the same position 12 months from now?
>
> 15. As I read each of the occupations, please tell me how many total individuals you estimate will be employed in each of the occupations 12 months from now.

The results in Table 15 show that several occupations expect to see a large growth rate in the coming year, "Security Software Engineer" (250%), "Data Security Analyst" (188%), "Network Engineer / Architect" (177%), and "Database Security Engineer" (133%) all expect to at least double in employment.

With turnover rates and growth rates, we can predict how growth expectations are expected to be in the next 12 months. "Network Engineer / Architect," "Database Security Engineer," "Data Security Analyst," and "Security Software Engineer" are expected to have the largest growth in employment over the next year.

Table 15 Occupation Growth and Turnover in the Next 12 Months

	Expected 12 Month Growth Rate	Expected 12 Month Turnover Rate	Growth Expectations
Network Engineer / Architect	176.9%	30.8%	High
Database Security Engineer	133.3%	50.0%	High
Data Security Analyst	187.5%	37.5%	High
Security Software Engineer	250.0%	16.7%	High
Network Security Technical Specialist	46.2%	23.1%	Medium
Application Security Engineer	0.0%	8.0%	Medium
Security Sales Engineer	0.0%	18.2%	Medium
Information Security Manager	0.0%	10.0%	Medium
IT Security Aministrator	-35.7%	10.7%	Low
Senior Security Consultant	0.0%	0.0%	Low
IT Security Analyst	-47.6%	14.3%	Low
Network Security Engineer	-34.4%	12.5%	Low

The next question addressed the company's difficulty in finding good applicant for the different occupations.

> 16. For the same list of occupations, I'm interested in the level of difficulty your business has in finding applicants who meet the company's hiring standards. As I read each occupation, please tell me whether your business has no difficulty, some difficulty, or great difficulty finding applicants.

As shown in Figure 23, the occupations that are the most difficult to fill are "Senior Security Consultant" (50% "Great difficulty"), "Security Sales Engineer" (50% "Some difficulty" and 13% "Great difficulty"), "Network Engineer / Architect" (58% "Some difficulty"), and "Network Security Engineer" (54% "Some difficulty").

> SVWIN Opportunity - Training programs designed by SVWIN should include training for "Security Sales Engineers," "Network Engineer / Architects," "Network Security Engineers," and "Senior Security Consultant."

Figure 23 Difficulty Finding Qualified Applicant
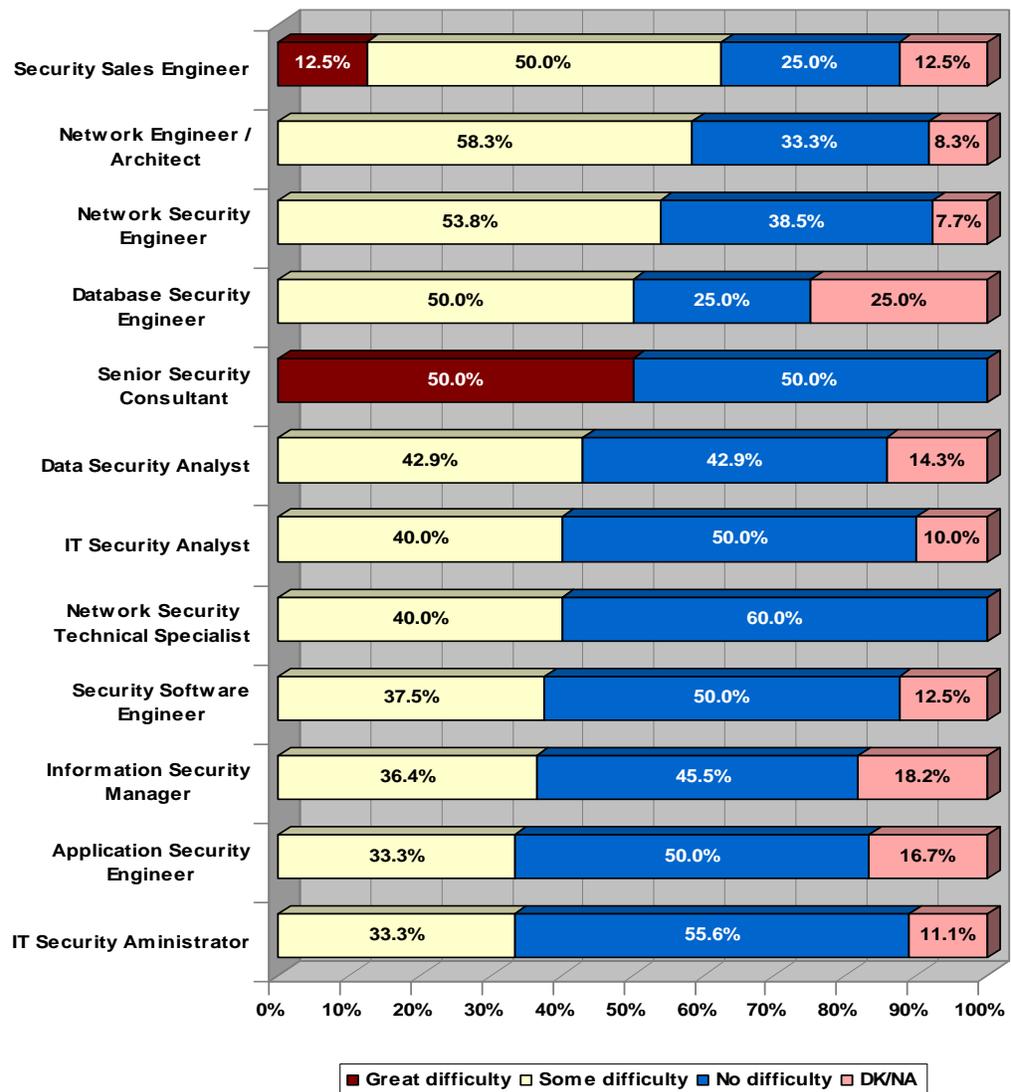
Respondents were next about their recruitment practices and whether or not they hire part-time or temporary workers for each occupation.

> 17. We're interested in how often your business recruits individuals from outside of the Bay Area for an occupation. As I read each occupation, please indicate if you always, frequently, sometimes, rarely or never recruit individuals from outside of the Bay Area for that occupation.

Answers were coded using a scale of "Always"=+4, "Frequently"=+3, "Sometimes"=+2, "Rarely"=+1, and "Never" = 0. The aggregate responses to each item are presented below in the form of a mean, which is simply a summary statistic obtained by taking the overall average of the response codes for the entire sample. A mean of +2, for example, indicates that, overall, respondents "Sometimes" recruit from outside the Bay Area for that occupation.

Figure 24 shows that firms most often recruit for "Senior Security Consultant" (2.00) from outside the Bay Area. The next highest rated occupations were "Network Security Technical Specialist" (1.63) and "Network Security Engineer" (1.43).

Figure 24 Recruitment from Outside Bay Area
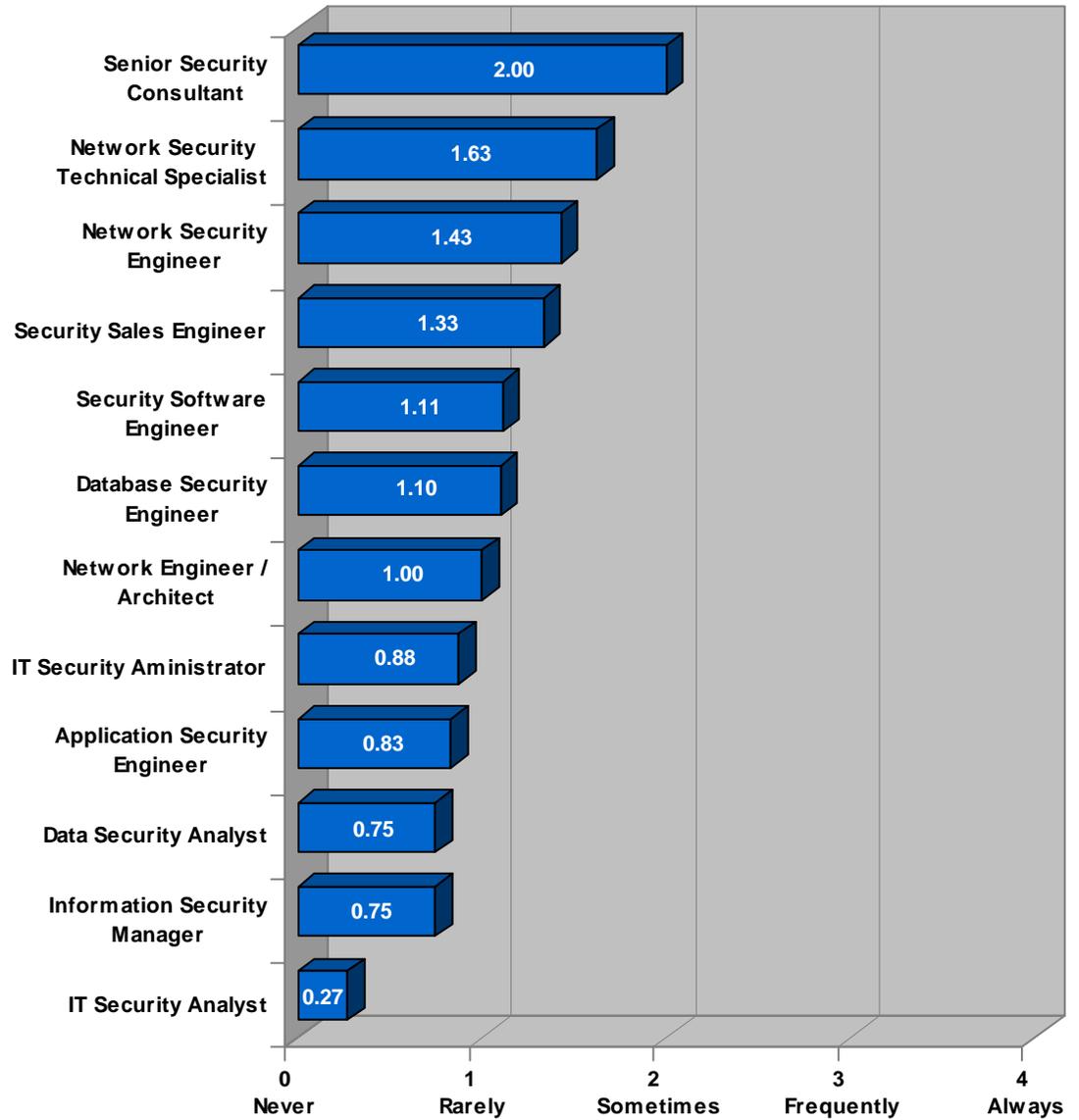
18. For the same list of occupations, we'd like to know how often your business hires **part-time** workers at your business location. As I read each occupation, please indicate whether your business always, frequently, sometimes, rarely or never hires **part-time** workers for that occupation.

19. Same question, only this time we're interested in **temporary workers**. As I read each occupation, please indicate whether your business always, frequently, sometimes, rarely or never hires **temporary workers** for that occupation.

Answers were coded using a scale of "Always"=+4, "Frequently"=+3, "Sometimes"=+2, "Rarely"=+1, and "Never" = 0. The aggregate responses to each item are presented below in the form of a mean, which is simply a summary statistic obtained by taking the overall average of the response codes for the entire sample. A mean of +2, for example, indicates that, overall, respondents "Sometimes" hire part-time or temporary workers.

As show in Figure 25, the only two occupations that at least "Rarely" hire part-time workers are "IT Security Administrator" and "Information Security Manager" (both 1.00). All other occupations received a rating between "Rarely" and "Never."

Figure 25 Frequency of Hiring Part-Time Workers
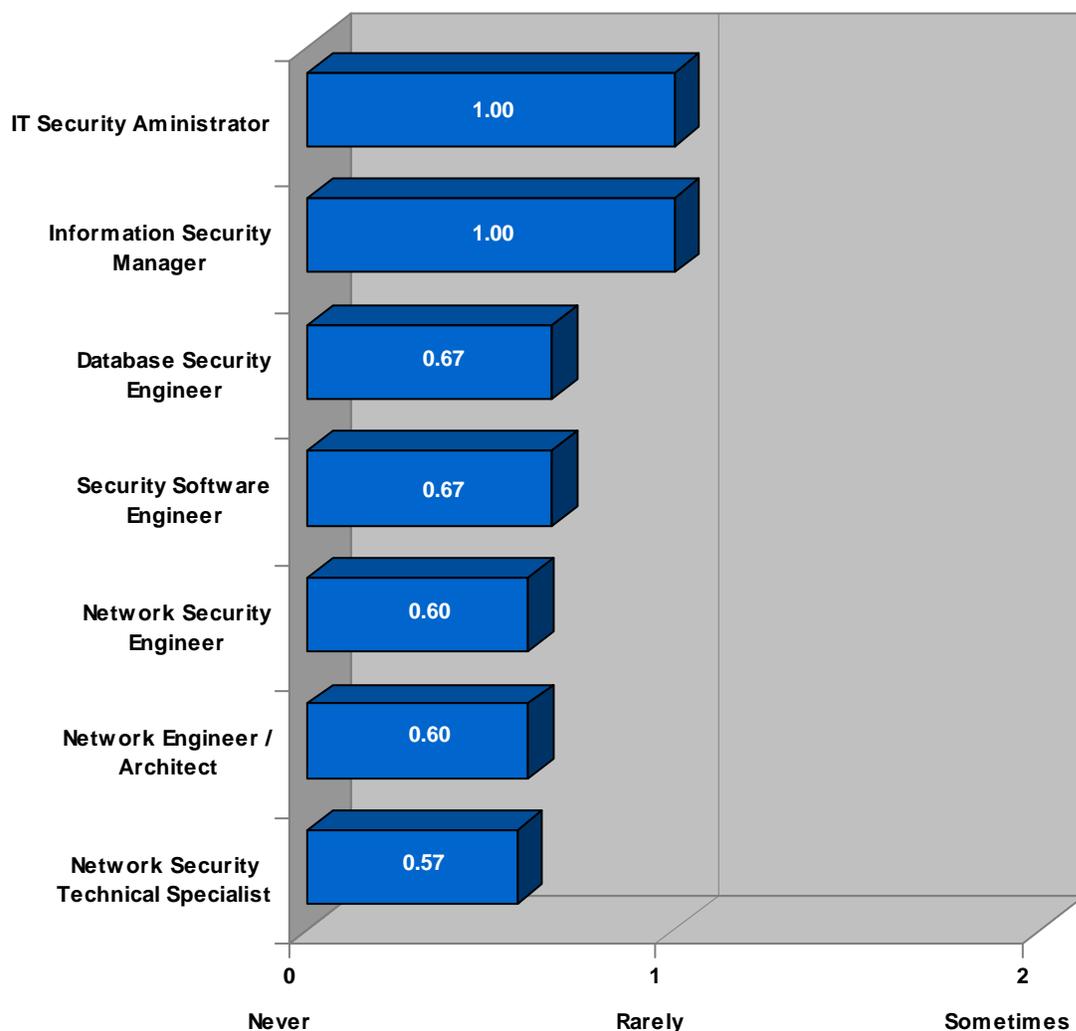
Figure 26 shows that firms most often hire a "Network Engineer / Architect" (1.78) on a temporary basis, followed by "IT Security Analyst" (1.67), "Senior Security Consultant" (1.50), "Data Security Analyst" (1.50), and "Application Security Engineer" (1.50).

Figure 26 Frequency of Hiring Temporary Workers

Position	Value
Network Engineer / Architect	1.78
IT Security Analyst	1.67
Senior Security Consultant	1.50
Data Security Analyst	1.50
Application Security Engineer	1.50
Security Sales Engineer	1.40
Network Security Engineer	1.22
Database Security Engineer	1.17
Network Security Technical Specialist	1.00
Security Software Engineer	1.00
IT Security Aministrator	0.75
Information Security Manager	0.75

0 Never   1 Rarely   2 Sometimes

The next question addressed the typical education requirements for each occupation as well as the importance of certification.

> 20. Next, for the same list of occupations, I'd like to know what are the **typical** education requirements for successful applicants within each occupation. The categories are: _____. Ok, here's the first /next one, what are the **typical** education requirements for successful applicants in this occupation at your business location?

Table 16 shows that all occupations require more than a High School Diploma. All occupations also had at least half of respondents stating they require at least a bachelor's degree. Occupations that had at least one quarter of respondents stating they require "Certification or Associate's Degree" were "Information Security Manager" (25%), "IT Security Administrator" (25%), "Network Security Engineer" (33%), "Database Security Engineer" (33%), and "Network Security Technical Specialist" (36%).

Table 16 Education Requirements

	No formal education requirements	High school	Certification or Associates Degree	Bachelor's Degree (B.A., B.S.)	Professional or Graduate Degree (M.S, Ph.D., J.D., MBA, P.E.)	DK/NA
Application Security Engineer	0.0%	0.0%	16.7%	50.0%	16.7%	16.7%
Information Security Manager	0.0%	0.0%	25.0%	50.0%	25.0%	0.0%
IT Security Aministrator	0.0%	0.0%	25.0%	62.5%	12.5%	0.0%
IT Security Analyst	0.0%	0.0%	9.1%	72.7%	9.1%	9.1%
Network Engineer / Architect	0.0%	0.0%	15.4%	61.5%	15.4%	7.7%
Network Security Engineer	0.0%	0.0%	33.3%	66.7%	0.0%	0.0%
Security Sales Engineer	0.0%	0.0%	11.1%	66.7%	11.1%	11.1%
Security Software Engineer	0.0%	0.0%	0.0%	57.1%	28.6%	14.3%
Data Security Analyst	0.0%	0.0%	18.2%	54.5%	27.3%	0.0%
Database Security Engineer	0.0%	0.0%	33.3%	66.7%	0.0%	0.0%
Network Security Technical Specialist	0.0%	0.0%	35.7%	57.1%	7.1%	0.0%
Senior Security Consultant	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%

Next, respondents were asked to give a salary range for each occupation.

22. What is the typical pay range for each occupation, from entry level to most experienced employees in that occupation?

Table 17 illustrates that "Senior Security Consultant" earns the highest wage ($100,000-$120,000). Other occupations that have the potential to earn the highest wages are "Information Security Manager" ($44,400-$82,800) and "Security Sales Engineer" ($35,000-$82,500). "Network Security Engineer" ($34,577-$49,749) was the only occupation with the high end of the wage level below $60,000.

Table 17 Occupational Wages

	Low	High
Senior Security Consultant	$ 100,000	$120,000
Information Security Manager	$ 44,400	$ 82,800
Security Sales Engineer	$ 35,000	$ 82,500
IT Security Aministrator	$ 59,286	$ 74,857
Database Security Engineer	$ 48,434	$ 73,069
Network Engineer / Architect	$ 50,821	$ 72,923
Security Software Engineer	$ 54,778	$ 67,778
Network Security Technical Specialist	$ 50,556	$ 66,687
Application Security Engineer	$ 42,007	$ 66,667
Data Security Analyst	$ 15,000	$ 65,000
IT Security Analyst	$ 36,100	$ 62,300
Network Security Engineer	$ 34,577	$ 49,749

The next series of questions was designed to gauge which skills are important to each occupation and which of those skills are employees deficient in.

23. I'm going to read a list of general skills. Please tell me which one of these skills are **most important** when considering applicants for _____.

24. 'm going to read the same list of general skills once more. Please tell me which of these skills, your _____ (READ OCCUPATION) are currently **most deficient** in?

APPLICATION SECURITY ENGINEER

Figure 27 shows that "Technical competence" had half of the respondents stating it was the most important skill, as well as half indicating it was also the most deficient. "Communication skills" and "Work independently" were both stated by 17 percent of respondents as being the most important and the most deficient.

Figure 27 Skills for Application Security Engineer
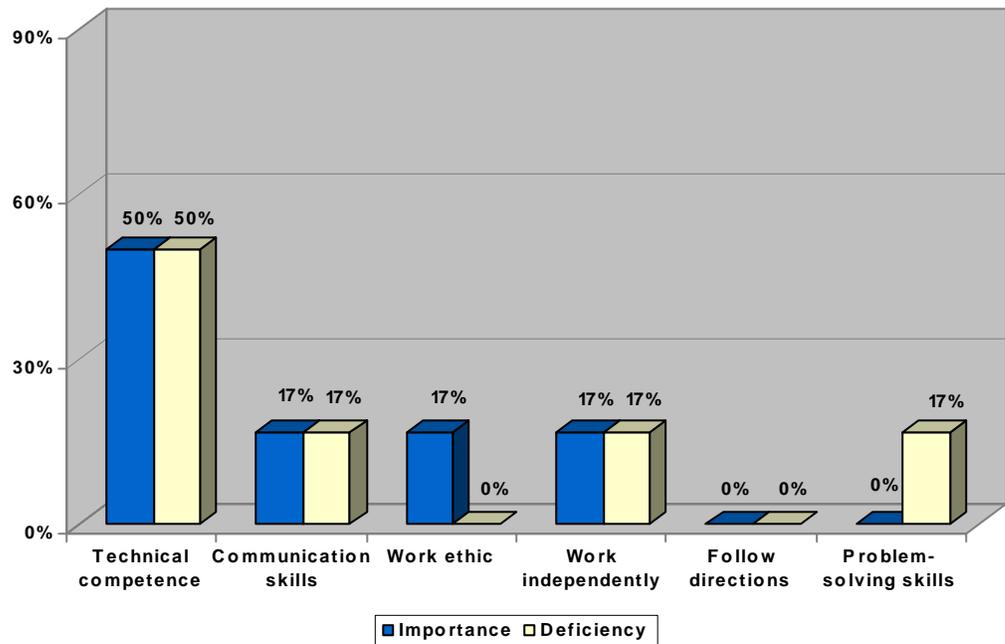
INFORMATION SECURITY MANAGER

As shown in Figure 28, "Technical competence" was stated by 63 percent as being the most important, but only 13 percent indicated it was the most deficient. "Communication skills" was reported by 50 percent as to being the most deficient, but nobody stated it was the most important.

Figure 28 Skills for Information Security Manager
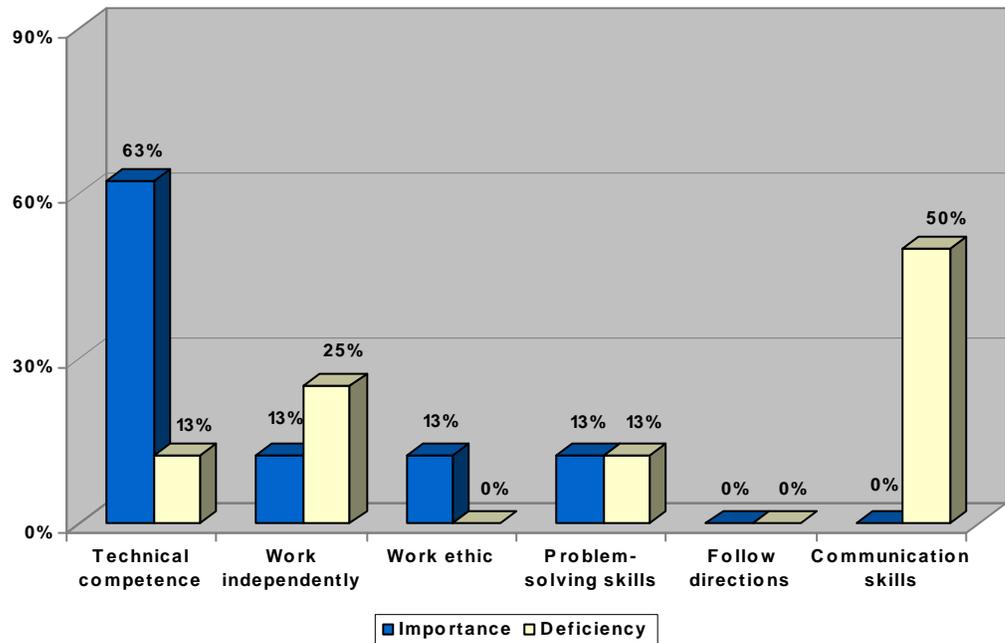
IT SECURITY ADMINISTRATOR

Figure 29 shows that 71 percent of respondents indicated that "Technical competence" was the most important and 38 percent reported that it was also the most deficient. Half of the respondents indicated "Communication skills" were the most deficient but none reported it as the most important skill.

Figure 29 Skills for IT Security Manager
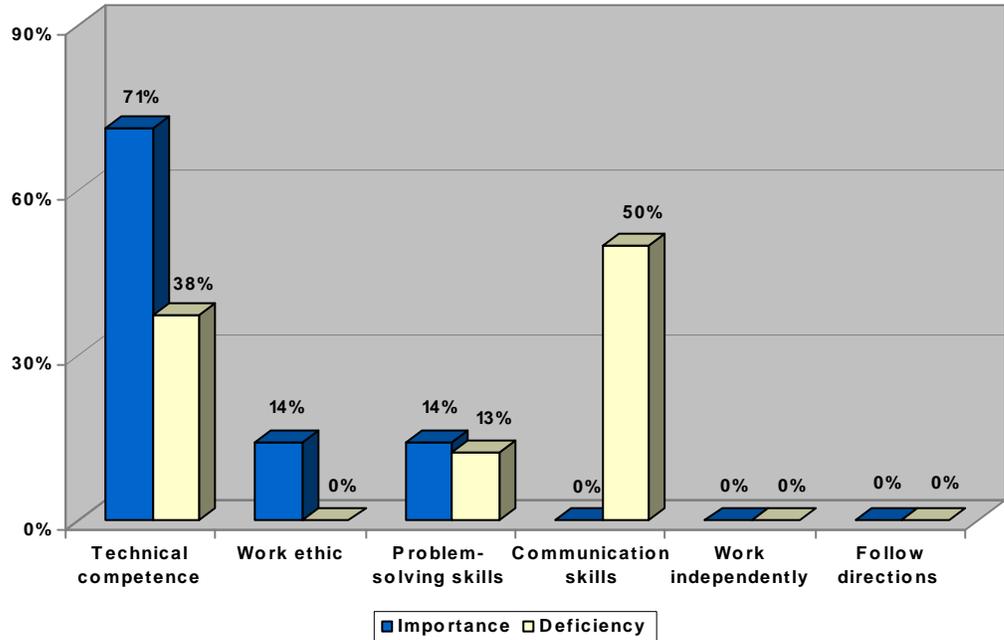
IT SECURITY ANALYST

Figure 30 illustrates that "Technical competence" was stated by 73 percent as to being the most important skill and 36 percent reported it was the most deficient. Twenty-seven percent of respondents indicated that "Communication skills" were the most deficient but only 18 percent reported they were the most important.

Figure 30 Skills for IT Security Analyst
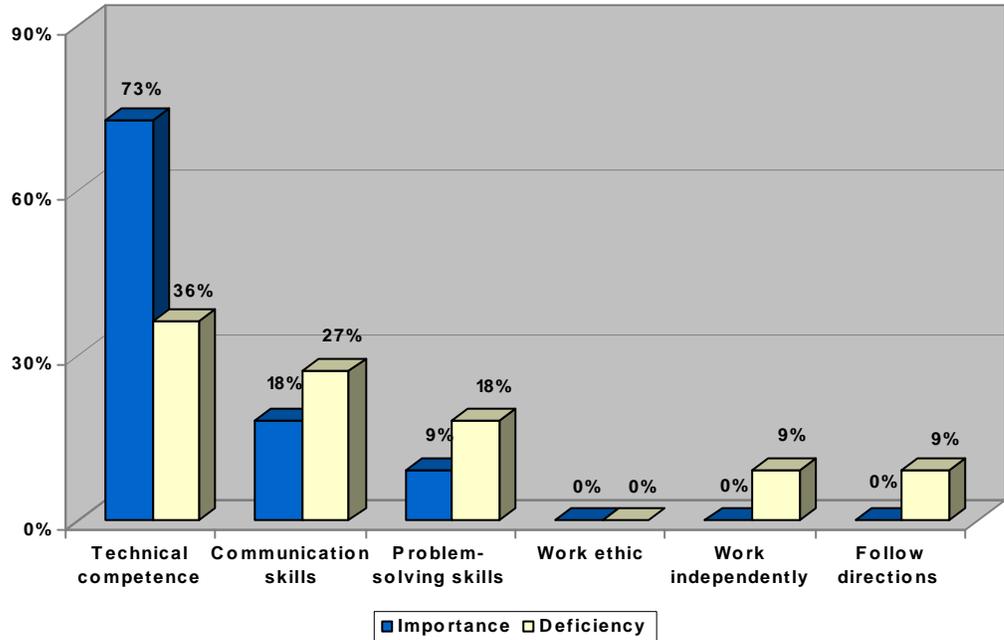
NETWORK ENGINEER / ARCHITECT

As shown in Figure 31, "Technical competence" was stated by 69 percent as to being the most important skill and 20 percent reported it was the most deficient. Thirty-three percent of respondents indicated that "Communication skills" were the most deficient but only eight percent reported they were the most important.

Figure 31 Skills for Network Engineer / Architect
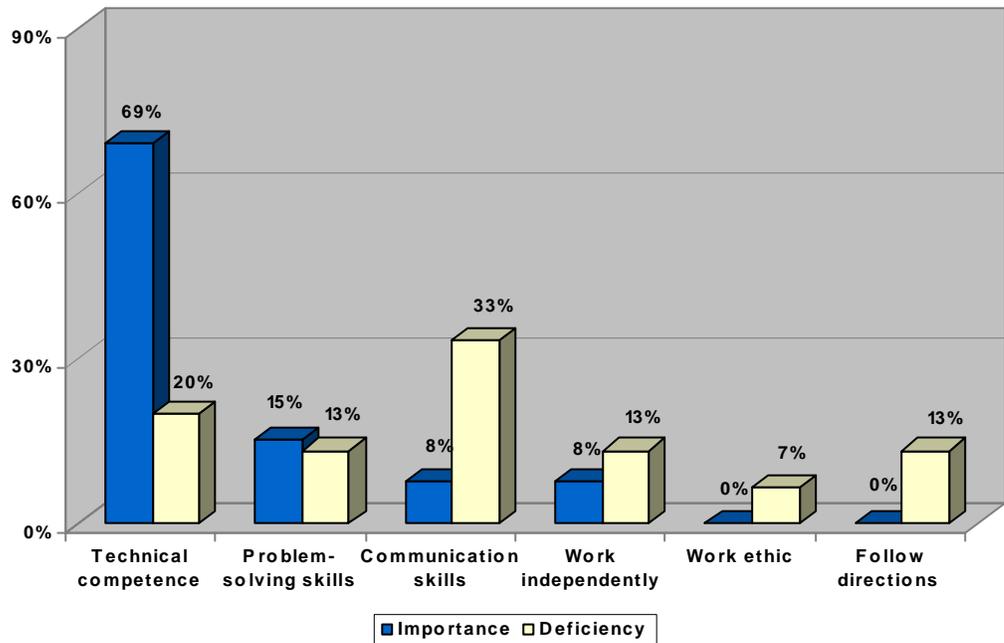
NETWORK SECURITY ENGINEER

Figure 32 shows that "Technical competence" was stated by 57 percent as being the most important, but only 18 percent indicated it was the most deficient. "Work ethic" was reported by 36 percent as to being the most deficient, but only seven percent stated it was the most important.

Figure 32 Skills for Network Security Engineer
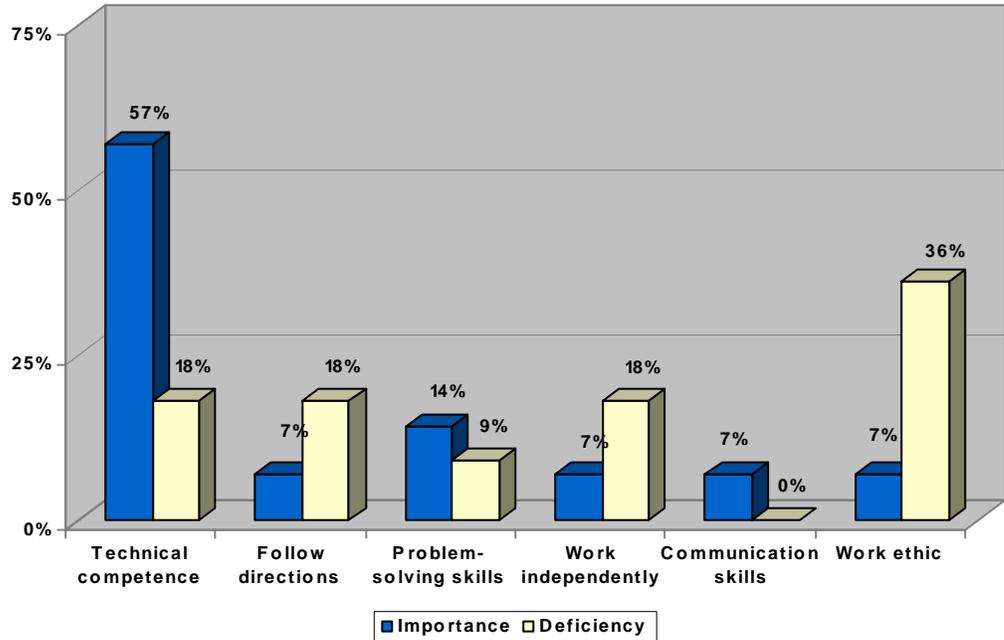
SECURITY SALES ENGINEER

As shown in Figure 33, "Technical competence" was stated by 67 percent as to being the most important skill and 33 percent reported it was the most deficient. Thirty-three percent of respondents indicated that "Problem-solving skills" were the most deficient but only 11 percent reported they were the most important.

Figure 33 Skills for Security Sales Engineer
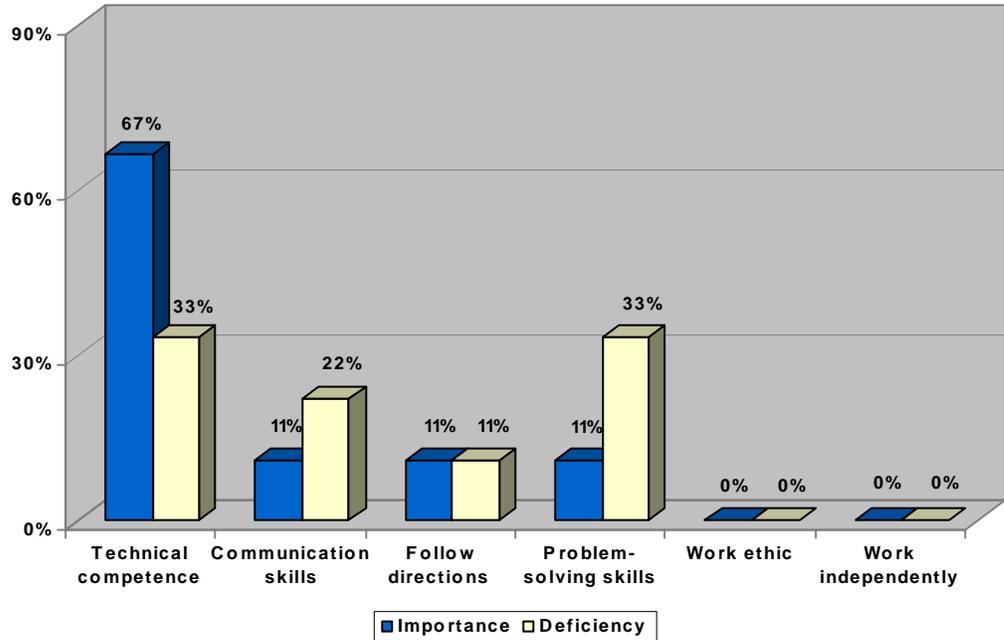
SECURITY SOFTWARE ENGINEER

As shown in Figure 34, "Technical competence" was stated by 55 percent as being the most important, and 36 percent indicated it was the most deficient. "Communication skills" was reported by 55 percent as to being the most deficient, but only 18 percent stated it was the most important.

Figure 34 Skills for Security Software Engineer
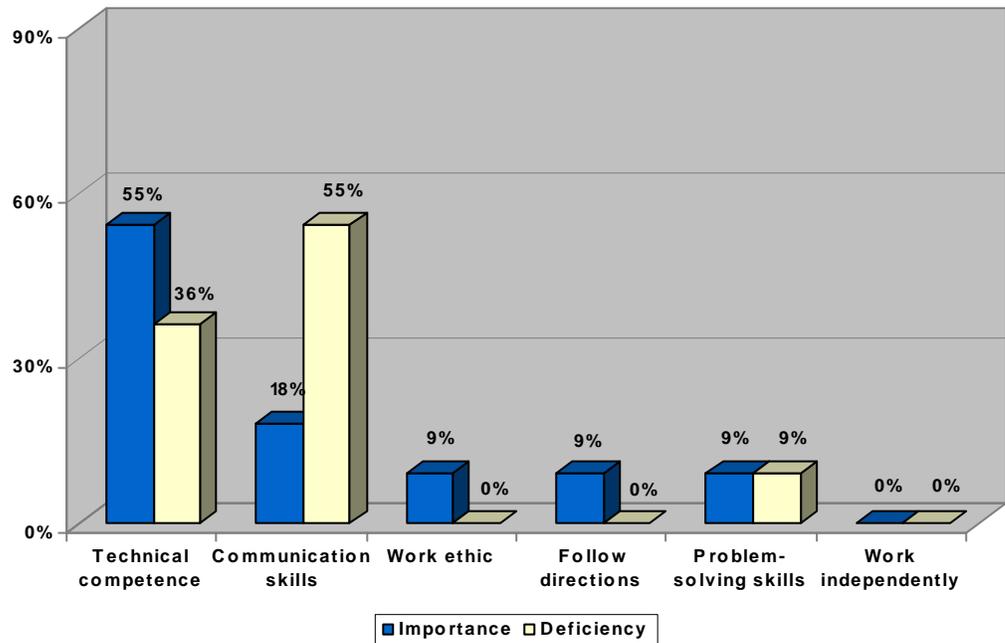
DATA SECURITY ANALYST

Figure 35 shows that "Technical competence" was stated by 50 percent as to being the most important skill and 25 percent reported it was the most deficient. Thirty-eight percent of respondents indicated that "Communication skills" were the most deficient but none reported they were the most important.

Figure 35 Skills for Data Security Analyst
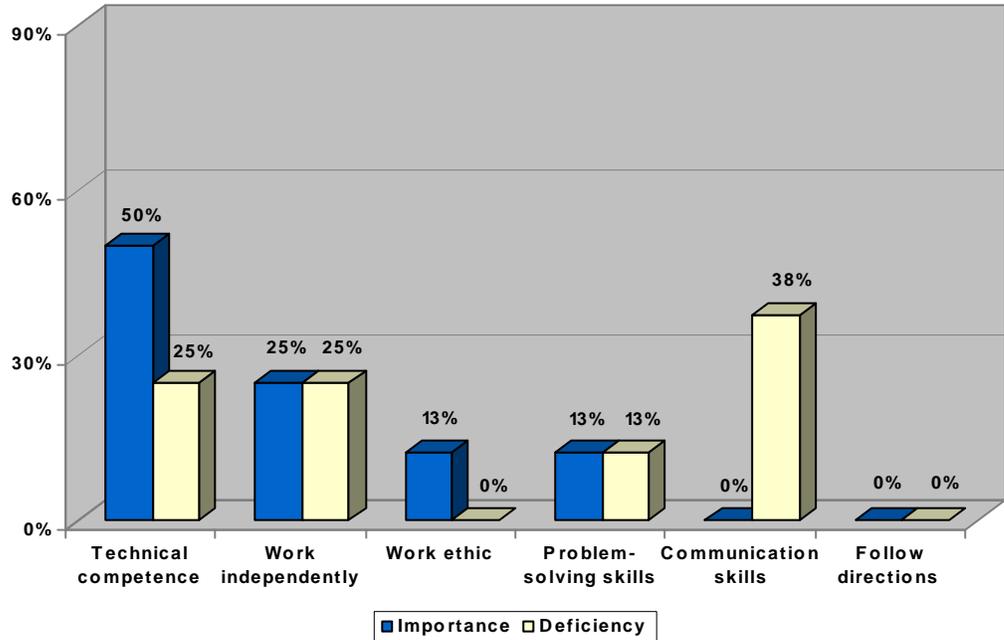
DATABASE SECURITY ENGINEER

As shown in Figure 36, "Technical competence" was stated by 60 percent as being the most important, but only 11 percent indicated it was the most deficient. "Communication skills" was reported by 78 percent as to being the most deficient, but none stated it was the most important.

Figure 36 Skills for Database Security Engineer
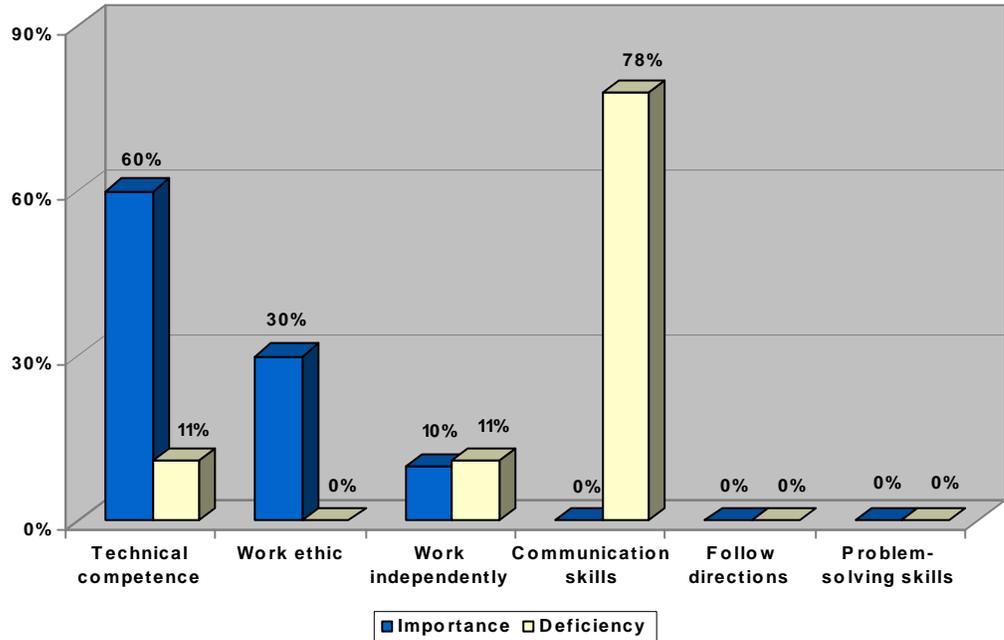
NETWORK SECURITY TECHNICAL SPECIALIST

Figure 37 shows that "Technical competence" had 69 percent of the respondents stating it was the most important skill, as well as 25 percent indicating it was also the most deficient. "Communication skills" and "Problem-solving skills" were both stated by 25 percent of respondents as being the most deficient.

Figure 37 Skills for Network Security Technical Specialist
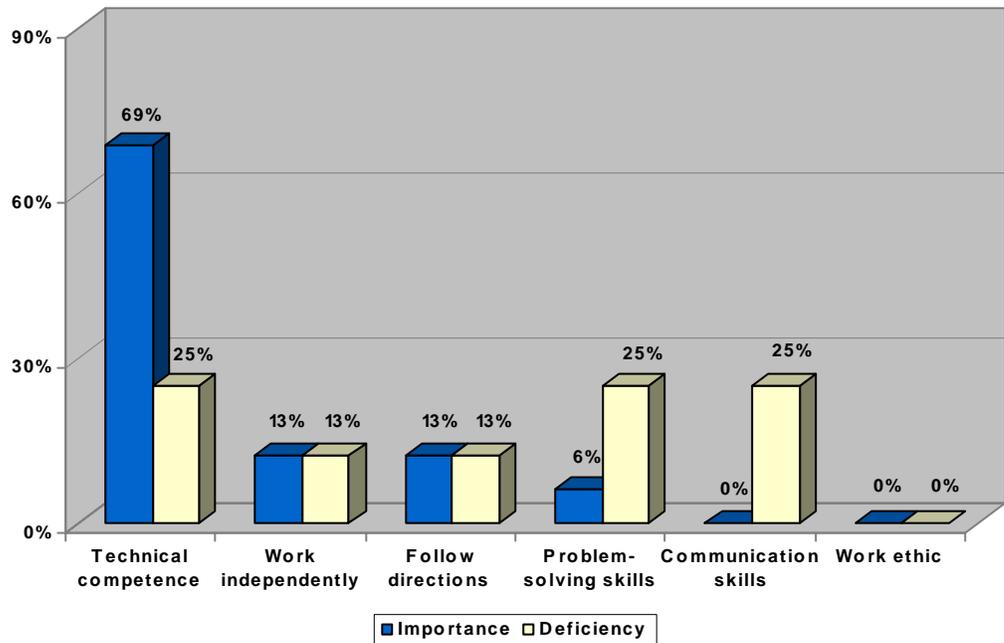
SILICON VALLEY WORKFORCE INVESTMENT NETWORK EVALUATION

The last section of the questionnaire asked questions specifically about the Silicon Valley Workforce Investment Network.

> 27. Would you say that you are very familiar, somewhat familiar, or not at all familiar with the Silicon Valley Workforce Investment Network?

Figure 38 shows that 80 percent of respondents indicated they are "Not at all familiar" with the "Silicon Valley Workforce Investment Network." Twenty percent stated they are "Somewhat familiar" with it.

Figure 38 Awareness of Silicon Valley Workforce Investment Network
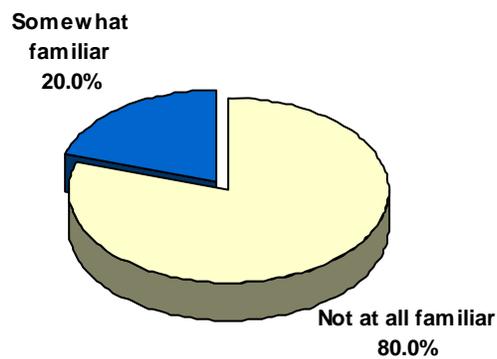
Somewhat familiar
20.0%

Not at all familiar
80.0%

> 28. Generally speaking, is your perception of the Silicon Valley Workforce Investment Network favorable, neutral or unfavorable?

As shown in Figure 39, 68 percent of respondents stated they have a "Neutral perception and 24 percent indicated they either don't know or refused to answer. All eight percent who did have an opinion stated they have a "Somewhat favorable" perception.

Figure 39 Perception of Silicon Valley Workforce Investment Network
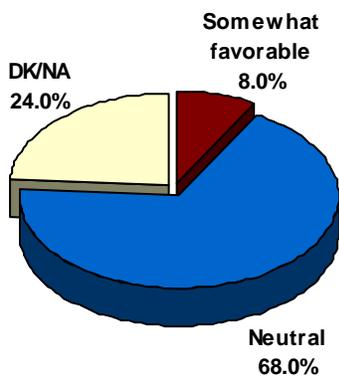
DK/NA
24.0%

Somewhat favorable
8.0%

Neutral
68.0%

> 29. Would your company be interested in receiving any of the following services from the Silicon Valley Workforce Investment Network:

Figure 40 shows that 43 percent of firms would like "Labor market information" and 40 percent indicated "Electronic job posting." The only response stated by fewer than 20 percent of respondents was "Downsizing assistance" with only 3 percent of firms indicating interest in it.

Figure 40 Services from Silicon Valley Workforce Investment Network
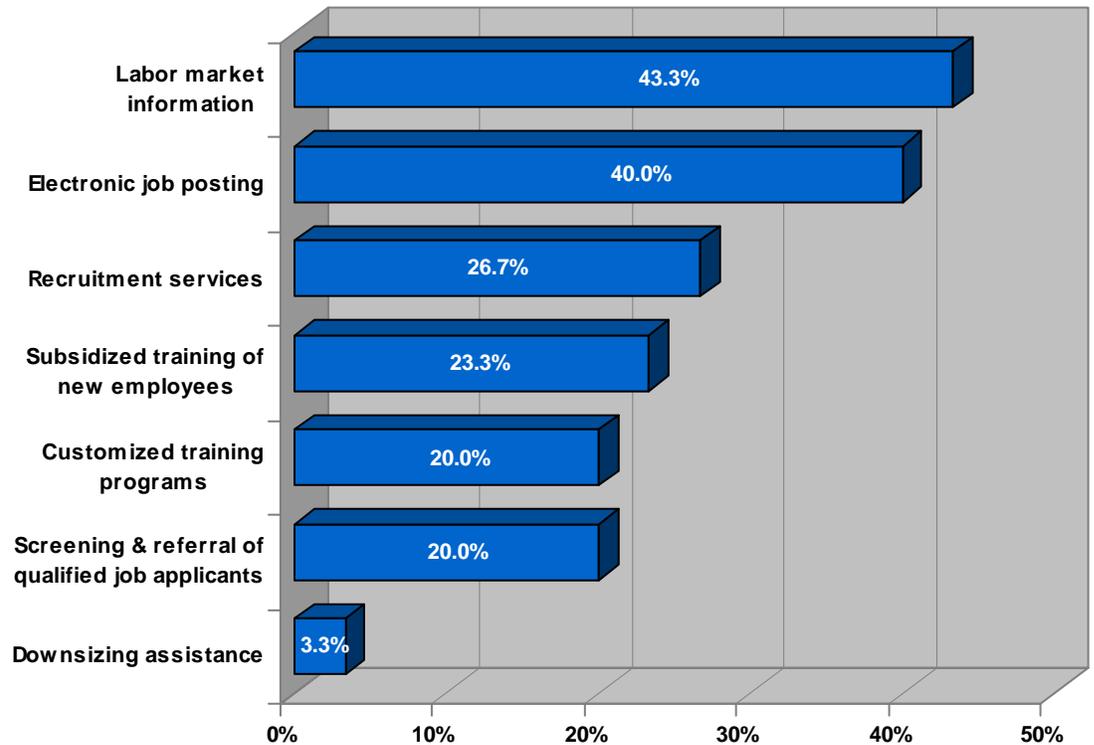
COMPONENT C: ASSESSMENT OF TRAINING PROVIDERS

Due to the dynamic nature of the industry, particularly within information security, each employee receives an average of ten days of information security related training per year. While education and training are important before individuals are hired into this cluster, it is often just as important for continued training and education, while employed in the cluster.

> About 80 percent of community colleges currently offer courses related to Homeland Security, according to the American Association of Community Colleges

<u>Certificates</u>

Recent third-party survey findings as well as the results in the survey of IT Security employers conducted in this study show that industry certifications are very valuable in the industry. By receiving credentials, employment candidates differentiate themselves from others with similar qualifications. Certifications also provide comfort for employers by giving them a guarantee about the candidate's competency level. Ninety-three percent of information security hiring managers reported that certifications were important when it came to making hiring decisions.

There are two different types of certifications, vendor-neutral and vendor-specific certificates, and both play an important role in the industry. Vendor-neutral certifications encompass a broad scope of knowledge about the industry or large area of it. The vendor-specific certification is directly related to a specific product, application, or solution.

In 2003, ISO/IEC 17024 was drafted to provide a benchmark for certification bodies offering certification of persons in any occupation and facilitates accreditation by national bodies. More than 60 percent of those surveyed in the study felt that information security certificates should be accredited under the ISO standards.

> Spending on Information Security training and education is expected to reach $1 Billion in the United States by 2006, which represents a 16% year-over-year growth rate, according to IDC.

Through interviewing local education and training providers, enrollment in training for IT Security certificates has been low compared to other certificate training programs. For example, Foothill College has a network security program that started in the fall of 2005. The enrollment was less than half of the capacity for the program. This signals an opportunity for SVWIN to promote network security training and inform potential workers of the benefits to certification.

Private companies who offer training for IT Security certification have also noted low enrollment in their IT Security certification training programs compared to other broad certification programs. There have also been a few inquiries about certification training that the provider does not currently offer. The most popular inquiry has been about CISSP certification from (ISC)[2]. Several private training providers do offer training for CISSP certification, but the ones do not report that some demand does exist for it. There may also be an opportunity for SVWIN to help fill the demand for CISSP certification training.

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The education and training resources in Homeland and Information Security can be broken down into four different components, a national training provider for IT Security, a regional vendor specific training provider for IT Security, a regional vendor neutral training provider for IT Security, and a Homeland Security training provider. Definitions and examples of these four different types are:

- **National Training Provider for IT Security–** National organizations have developed certificates in order to develop a workforce with a common knowledge base and demonstrated competence in information security. They oversee the exam process as well a offer training programs to prepare individuals for the exams. Examples of this type of training provider are (ISC)[2] and SANS.

- **Regional Vendor Specific Training Provider for IT Security –** This group of training providers is mainly made up of private training firms that offer training for the vender specific information security certificates. An example of this type of training provider is TechSkills Technology Training.

- **Regional Vendor Neutral Training Provider for IT Security –** A mix of some private training firms and local community colleges. These training providers offer courses and programs designed for the vendor neutral information security certificates. An example of this type of training provider is Foothill Community College.

- **Homeland Security Training Provider –** Training for this sector is very diverse and has a large overlap with education and training for Criminal Justice. An example of this type of training provider is David Walker and Associates.

In the survey administered to IT Security employers, one question asked how important certification was for an applicant for several different occupations.

> 21. For the occupations we've been discussing, we'd like to know how important it is to have successful applicants with certifications specific to the position. As I read each occupation, please indicate if it is; extremely important, very important, somewhat important, or not at all important for successful applicants to have at least one certification when applying for the position.

Answers were coded using a scale of "Extremely important"=+3, "Very important"=+2, "Somewhat important"=+1, and "Not at all important" = 0. The aggregate responses to each item are presented below in the form of a mean, which is simply a summary statistic obtained by taking the overall average of the response codes for the entire sample. A mean of +2, for example, indicates that, overall, respondents felt certification was "Very important" for that occupation.

As shown in Figure 41, "Network Engineer / Architect" (2.25) was the top rated occupation, followed by "Network Security Engineer" (2.20), "IT Security Analyst" (2.00), and "Database Security Engineer" (2.00). Previously, it has been noted that training may be needed for ""Network Engineer / Architects" and "Network Security Engineers." As shown here, training in order to pass certificate examinations is important.

Figure 41 Importance of Certification

CONCLUSIONS AND RECOMMENDATIONS

Based on the findings of the secondary and primary research, Godbe offers the following conclusions and recommendations to the Silicon Valley Workforce Investment Network:

The Silicon Valley Workforce Investment Network has several opportunities to help develop a skilled and productive workforce for the Homeland and Information Security cluster in the Bay Area. These opportunities include expanding certificate programs in information security at regional community colleges and universities, assisting in the development and implementation of career ladders and re-training programs for Information Security occupations, and collaborating with Homeland Security firms in recruiting and screening new applicants.

Expand Information Security Certificate Programs at Regional Community Colleges and Universities

The information security cluster is a growing industry that is constantly requiring new education and training for its employees. One of the defining characteristics of the Information Security industry is the demand for qualified applicants with appropriate certifications and the constant need for re-training employees on the latest technology. Given the strong growth expectations for most information security occupations and the constant demand for training in new technologies, expanding the information security certificate programs in the Silicon Valley community should be a high priority.

Information security employers in the region indicated that educational certificates were very important for successful applicants in most of the occupations examined in the primary research. Employers indicated three occupations in particular that had strong growth expectations or current difficulty hiring for the position and stated that educational certificates specific to the position were at least very important when considering new applicants for the position. These occupations include;

- Network Engineer / Architect,

- Network Security Engineer, and

- Database Security Engineer,

These occupations use both general, vendor-neutral information security certificates such as a Certified Information System Security Professional (CISSP) as well as vendor-specific certificates such as Microsoft Certified Systems Engineer: Security.

Currently, community colleges offer courses and programs designed to prepare students for passing a both vendor-neutral and vendor-specific certificate examinations. They also offer degree programs geared towards helping students find entry-level employment within the industry.

There are two areas that can be improved. First, more collaboration needs to be done with the leading security certification organizations, such as (ISC[2]), to offer training for more security related certificates. Also, most of the programs are designed for individuals at the lower end of the career ladder. There are opportunities for the development of programs designed for those who are looking to move up the career ladder by receiving training for additional certification.

Based on an executive interview with one of the education and training providers in Santa Clara County, there exists an opportunity for SVWIN to collaborate with Foothill College to expand awareness of SVWIN and increase recruitment for Foothill's network security program. Chuck Lindauer, the dean of the Computers, Technology & Information Systems division at Foothill College, said "the program is in its first quarter of existence and enrollment is slightly less than half of capacity."

> SVWIN Opportunity - Collaborate with Foothill College to assist in the development and recruitment of students in the network security program. Working with Foothill College, SVWIN will design a feeder program that will develop any prerequisite skills that are needed for students entering the network security program. SVWIN will also work with Foothill College to better market the opportunities that exist for potential applicants in the information security industry.

Given the nature of the current landscape of the training industry, SVWIN should concentrate on vendor neutral certificate training at the local community colleges. Vendor specific certificate training is already well established with private training and education institutions.

Assist in the Development and Implementation of Career Ladders Programs for Information Security Professionals

The strong demand for information security occupations points to not only expanding the supply of qualified candidates but to also retaining and developing those individuals that are already working in information security or a closely related field. Career ladders provide current and potential employees a clear picture of the opportunities that exist in the industry but also tie that opportunity with the educational and training requirements that are essential to the industry.

Developing and implementing a career ladder program for the information security industry will require collaboration with both employers in the industry and education providers but will likely need to be led by an agency like SVWIN. SVWIN will need to work with employers to identify and develop career ladders that connect occupational advancement with the skills and educational requirements that are associated with each progression up a given ladder. SVWIN will also need to collaborate with educational providers in the region, both community colleges and universities, to ensure that these institutions are offering courses and general curriculum that is consistent with the framework in the career ladders.

> SVWIN Opportunity – Develop and implement a career ladder program for information security. This program would establish a career path for those individuals who are starting at the bottom of the occupational ladder as well as provide career advancement information to those individuals who are considering a lateral movement into the information security sector from a higher initial starting point.

Collaborate with Homeland Security Firms in Recruiting and Screening New Applicants

Employers in the Homeland Security arena are generally less willing to disclose any information about their business including those related to workforce needs. However through secondary research and executive interviews, we were able to determine that the Homeland Security industry in Silicon Valley tends to be rather concentrated with a few larger firms and training providers that account for most of the demand for Homeland Security occupations in the region. The demand for new workers also tends to be relatively erratic with greater fluctuations found in other clusters, as much

of it is dependent on federal legislation, and when new positions are open they usually need to be filled quickly. These characteristics indicate that SVWIN should attempt to develop relationships with some of the larger firms in the Homeland Security arena and collaborate on recruiting and screening new applicants. The positions required usually have lower skill and education requirements which would serve a labor pool very different than what is needed in the information security arena.

Explore opportunities to develop and improve communication skills among current information security employees as well as future applicants to this sector.

Employers, as well as education and training providers, for the information security sector are largely focused on developing the technical skills and abilities of their employees or students. However, employers in this cluster were most likely to identify *communication skills* as the skill-set in which applicants were most deficient. Specifically, of the ten occupations evaluated, employers identified communication skills as the skill set where applicants were most deficient for six of the ten occupations. Further, almost 80 percent of employers of database security engineers identified communication skills as the skill-set applicants were most deficient. Of the six skill-sets considered, only technical competence was close to communication skills as an area that employers consistently identified as an area of deficiency among current applicants.

> SVWIN Opportunity – Given the industry's focus on current technical skills usually tied to some type of certification it is not surprising that employers would identify communication skills as an area that is largely deficient among current applicants. The largely technical focus of the information security arena provides an opportunity for SVWIN to assist the industry develop the soft skills particularly the communication skills of current employees and future applicants. This could be done by assisting the current education and training providers in the region or developing stand alone programs working in conjunction with current employers.

APPENDIX A: METHODOLOGY

Table 18 briefly outlines the methodology used in this project. Using a database compiled from InfoUSA and Hoover's, firms in Santa Clara, San Mateo, Alameda, Santa Cruz, San Francisco, Contra Costa, Marin, San Joaquin, and Sacramento counties with at least five employees in the IT Security cluster and any firms with over 100 employees were called to complete either a phone survey interview or an Internet survey. Interviews were conducted from August 21 through September 7, 2005 and each interview typically lasted 20 minutes.

Table 18 Summary of Survey Methodology

Technique	Telephone interviewing and internet survey.
Universe	550 large companies and 515 IT companies
Field dates	August 21 – September 7, 2005
Interview Length	20 minutes
Sample Size	30

Sample size was driven by the goal to interview as many firms in the Homeland and Information Security cluster as possible.

In addition to the employers surveyed there we also interviewed seven local education and training providers about the current and future plans for their degree or certificate programs in IT Security and Homeland Security. This information was largely used in developing the conclusions and recommendations that are offered. Table 19 shows a list of education and training providers interviewed during the study.

Table 19 Education and Training Providers Interviewed

Institution	Name
(ISC)[2]	Anthony Baratta
Department of Homeland Security	Alex Cabassa
Homeland Security Research Corp	Daren Pely
Foothill College	Chuck Lindauer
Foothill / De Anza College	Dan Dishno
David Walker and Associates	Greg Crofley
TechSkills Technology Training	Jason
Netwind Learning Center	Frank Pines
SANS Institute	Laurie Lambert

Understanding the "Margin of Error"

Because a survey only contains responses from a limited number of firms, who are part of a larger population group, by mere chance alone there will almost always be some difference between a sample and the population from which it was drawn. For example, researchers might collect information from 100 companies in a town of 2,500 companies. Because not all firms in the population were surveyed, there are likely to be differences between the results obtained from interviewing the sample respondents and the results that would be obtained if all firms in the population were interviewed. These differences are known as "sampling error," and they can be expected to occur regardless of how scientifically the sample has been selected. The advantage of using a scientifically drawn sample, however, is that the maximum amount of sampling error can be determined based on four factors: the size of the population, the chosen sample size, a confidence level, and the dispersion of responses to a survey question. Of the four factors, sample size is the most influential variable.

Table 20 shows the sampling variation that applies to various percentage results that might have been obtained through the survey. The table shows that if a sample of 30 firms is randomly drawn from the estimated 1,065 firms in the Bay Area, one can be 95 percent confident that the margin of error, due to sampling, will not vary by more than the indicated number of percentage points (plus or minus) from the result that would have been obtained if the interviews had been conducted with all people in the universe represented in the sample.

Table 20 Margin of Error

n	Distribution of Responses				
	90% / 10%	80% / 20%	70% / 30%	60% / 40%	50% / 50%
1000	0.46%	0.61%	0.70%	0.75%	0.77%
900	0.77%	1.03%	1.18%	1.26%	1.29%
800	1.04%	1.38%	1.58%	1.69%	1.73%
700	1.30%	1.74%	1.99%	2.13%	2.17%
600	1.59%	2.12%	2.42%	2.59%	2.64%
500	1.92%	2.55%	2.93%	3.13%	3.19%
400	2.32%	3.10%	3.55%	3.80%	3.87%
300	2.88%	3.84%	4.40%	4.70%	4.80%
200	3.75%	5.00%	5.73%	6.12%	6.25%
100	5.60%	7.47%	8.55%	9.14%	9.33%
30	10.59%	14.12%	16.17%	17.29%	17.65%

As the table indicates, the maximum margin of error for all aggregate responses is between 10.59 and 17.65 percent for the sample of 30 firms. This means that for a given question answered by all respondents, one can be 95 percent confident that the difference between the percentages reported here based on the responses of the sample population, and the percentages that would be calculated for responses from the total population, is no greater than 17.65 percent. The percent margin of error applies to both sides of the answer, so that for a question in which 50 percent of respondents said yes, one can be 95 percent confident that the actual percent of the population that would say yes is between 32.35 percent and 67.65 percent (see the last column of Table 20).

The actual margin of error for a given question in this survey depends on the distribution of the responses to the question. The 17.65 percent refers to dichotomous questions, such as a "Yes" or "No" question, where opinions were evenly split in the sample, with 50 percent of respondents saying "Yes" and 50 percent saying "No." If that same question were to receive a response in which 10 percent of respondents said "Yes" and 90 percent said "No," the margin of error would be no greater than 10.59 percent (see the first column of Table 20). As the number of respondents in a particular subgroup (e.g., occupation) is smaller than the number of total respondents, the margin of error associated with estimating a given subgroup's responses will be higher. For this reason Godbe Research cautions referencing subgroups with fewer than 25 responses.

Occupation Descriptions

The table below gives the title and occupation description of the IT security occupations used for this study.

Table 21 Occupation Descriptions

Occupation	Description
Security Software Engineer	Develops, enhances and maintains security software sold to customers and business partners.
IT Security Analyst	Providing critical input throughout the project management lifecycle to protect information systems and critical data from violations of policy, regulators, or customer expectations as they relate to confidentiality, integrity, and availability, and also delivering security certification and accreditation reports and assessments.
IT Security Administrator	Provides user account administration and support for all network based resources and application specific user account access. The IT Security Administrator will be responsible for developing secure client directories and other information classification and protection initiatives.
Network Security Technical Specialist	Implementing systems to customer requirements, providing support in client environments, ensuring customer expectations are met.
Database Security Engineer	Serves as technical lead and conducts database security risks assessments, architectural reviews, security analysis and evaluation of enterprise networks, software applications, and host systems (desktop, file server, web hosts).
Senior Security Consultant	Analyzing and evaluating information technology (IT) security risks and controls, providing IT risk reduction recommendations, developing policies and procedures as it relates to information security, performing general IT control reviews.
Application Security Engineer	Design and Implement security technologies including reverse proxy, firewall and sever level policy agents. Develop detailed risk assessments, security plans and risk mitigation plans to identify, and mitigate risks.
Information Security Manager	Assist in creating and maintaining security for all SAP authorizations, profiles and roles, translate business requirements into SAP security roles. Lead in requirements gathering, design, configuration and testing security activities, monitors and certifies users and security profiles on a periodic basis.
Network Security Engineer	Configuration, maintenance and monitoring of firewalls, IDS and routers. IDS configuration involves maintenance of ongoing monitoring of intrusion detection systems (IDS), network intrusion detection sensors (NIDS) and incident response and management activities.
Data Security Analyst	Responsible for providing assurance that computing infrastructure and applications meet information security best practices and comply with regulations for information security.
Network Engineer / Architect	Responsible for defining and resolving system performance, data and architecture issues as well as planning, designing and participating in major system installations.
Security Sales Engineer	Prepares and provides configurations and pricing on standard, complex and special hardware and applications, prepares responses to the technical sections of RFP's/RFQ's and conducts technical sales presentations. Assists sales staff in defining system hardware and applications based on customer requirements.

Questionnaire Design

Randomization of Questions

To avoid the problem of systematic position bias - where the order in which a series of questions is asked systematically influences the answers to some of the questions - several of the questions in this survey were randomized such that respondents were not consistently asked the questions in the same order. The series of items in questions 10, 11, 23, 24, and 29 were randomized to avoid the systematic position bias.

Occupation Selection for Questions

Due to the length of the occupational questions (questions 12 through 26) respondents were asked questions for as many as four occupations if the survey was completed over the phone and up to five occupations if the survey was completed online. If a firm indicated that they had more than four of the occupations being evaluated (or five for the online survey), the occupations that were used for questions 12 through 26 were initially determined randomly. After a few weeks of data collection, certain occupations that had a lower response rate were given a higher priority and were automatically included for questions 12 through 26, if that particular occupation was employed at the specific firm.

A Note on "Rounding"

Conventional rounding rules are applied (i.e., numbers that include 0.5 or higher are rounded to the next highest whole number and numbers that include 0.4 or lower are rounded to the next lowest whole number). Because of rounding, the reader may notice that percentages in the discussion may not sum to 100 percent.

To display information relevant to a particular analysis in the most efficient manner possible, the sizing of table columns and fonts vary to fit the analytical needs.

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APPENDIX B: SURVEY QUESTIONNAIRE

Godbe Research

August 2005

Homeland and Information Security – Silicon Valley WIN 2005

Hello, my name is _____. May I please speak to [name] or [the person handling human resource issues at [company]?]

Hello, my name is _____and I'm calling on behalf of the Silicon Valley Workforce Investment Network. I'm following up on a letter sent from **[Name of Cluster Signator]** asking you to participate in a survey that will address your future business needs for trained and educated employees.

As a token of appreciation, we will also enter participants who complete the survey into a drawing for a $500 cash prize.

<< if needed>> The survey should take no more than ten minutes of your time. By answering this survey, you can help regional workforce agencies develop the appropriate type of training that will prepare the employees you will be looking for in the future.<<end of optional section 2>>

<< if needed>> The survey has been commissioned by the Silicon Valley Workforce Investment Network, which is committed to developing the regional workforce. The survey is being conducted by Godbe Research, an independent research firm. <<end of optional section 3>>

First, I'd like to ask you a few general questions about your business.

1. How many permanent full-time employees work at your business location?

Record # full-time**: _____**

2. How many permanent part-time employees work at your business location?

Record # part-time**: _____**

3. How many temporary and/or seasonal employees currently work at your business location?

Record # temporary**: _____**

4. Including all full-time and part-time employees, how many **permanent** employees do you expect to have 12 months from now?

Record # employees: _____

5. How many temporary and/or seasonal employees do you expect to have 12 months from now?

Record # temporary: _____

6. When a non entry-level position becomes available in your firm, do you more often hire from outside or promote from within the company?

Promote from within -------------------------------- 1
Even split (50-50 outside & promote) ----------- 2
Recruit from outside -------------------------------- 3
(DON'T READ) Don't know ----------------------- 4
(DON'T READ) Refused-------------------------- 5

7. How often does your business recruit individuals from outside the Bay Area but within California for employment?

Always --- 1
Frequently--- 2
Sometimes--- 3
Rarely -- 4
Never--- 5
(DON'T READ) Refused-------------------------- 6

8. How often does your business recruit individuals from outside California for employment?

Always --- 1
Frequently--- 2
Sometimes--- 3
Rarely -- 4
Never--- 5
(DON'T READ) Refused-------------------------- 6

9. In the next 3 years, what percentage of your current employees do you expect will retire?

Record % Retiring in next 3 years**: _____

---

10. Next, I'm going to read a list of issues facing the region's workforce in the coming years, please tell me how much difficulty your firm faces in addressing these workforce needs.

Here's the (first/next) one: _____. Please tell me whether your business has no difficulty, some difficulty, or great difficulty in dealing with this issue.

Randomize

	No difficulty	Some difficulty	Great difficulty	(DON'T READ) DK/NA
A. Keeping current workers properly educated and trained on new technologies and policies	1	2	3	4
B. Replacing retired workers with qualified candidates from outside the firm	1	2	3	4
C. Developing strategies to retain valuable employees	1	2	3	4
D. Recruiting entry-level employees with adequate training and education	1	2	3	4
E. Recruiting non entry-level employees with adequate skills and experience	1	2	3	4
F. Recruiting employees with reasonable salary requirements	1	2	3	4

11. Next, I'd like to ask you about employee development practices at your business location. As I read each of the following employee development practices, please indicate whether your business uses each practice.

Randomize

	Yes	No	(Don't Read) DK/NA
A. Formal on-the-job training	1	2	3
B. Informal on-the-job training	1	2	3
C. In-house classroom training	1	2	3
D. Career development programs/ Career ladders	1	2	3
E. Employer-paid outside training	1	2	3
F. Tuition assistance at a college or university	1	2	3

Occupation - Related Questions

12. Now, I'm going to ask you about specific occupations within your business/company. The occupational titles we are using may differ from the specific position titles used in your company. For these questions, I would like you to try to equate your company's specific position titles with the more generic ones we will use here. Please tell me if your company employs, at your location, individuals in positions matching the following generic occupational titles:

Here's the (first/next) one: _____ (READ ITEM & BRIEF DEFINITION, THEN ASK): Do you have employees who fit this occupational description at your business location?

    Occupational List   <<number of occupations is dependent on cluster>>

        1 (occupation 1 – brief definition)
        2 (occupation 2 – brief definition)
        3 (occupation 3 – brief definition)
        4 (occupation 4 – brief definition)
        5 (occupation 5 – brief definition)
        6 (occupation 6 – brief definition)
        7 (occupation 7 – brief definition)
        8 (occupation 8 – brief definition)
        9 (occupation 9 – brief definition)
        10 (occupation 10 – brief definition)

(RANDOMLY SELECT UP TO 4 OF THE OCCUPATIONS THAT THE RESPONDENT INDICATED ARE REPRESENTED AT THEIR BUSINESS LOCATION IN Q6. ASK Q.'S 18-30 IN THE SELECTED BUSINESSES)
Next, I'm going to ask you a few questions about several of the occupations you mentioned.

13. As I read each of the following occupations, please tell me how many individuals at your business location are currently employed in the occupation. (READ ITEMS IN SEQUENCE).

        A. Occupation 1------------- ### (3 digit number)
        B. Occupation 2------------- ### (3 digit number)
        C. Occupation 3------------- ### (3 digit number)
        D. Occupation 4------------- ### (3 digit number)

14. How many of the current _____ [USE NUMBER FROM ABOVE & NAME OF OCCUPATION], do you expect, will **NOT** be working at this company in the same position **12 months from now**?

        A. Occupation 1------------- ### (3 digit number)
        B. Occupation 2------------- ### (3 digit number)
        C. Occupation 3------------- ### (3 digit number)
        D. Occupation 4------------- ### (3 digit number)

[This number can not be larger than the number in Q18 for each occupation]

15. As I read each of the occupations, please tell me how many total individuals you estimate will be employed in each of the occupations **12 months from now**.

        A. Occupation 1------------- ### (3 digit number)
        B. Occupation 2------------- ### (3 digit number)
        C. Occupation 3------------- ### (3 digit number)
        D. Occupation 4------------- ### (3 digit number)

16. For the same list of occupations, I'm interested in the level of difficulty your business has in finding applicants who meet the company's hiring standards. As I read each occupation, please tell me whether your business has no difficulty, some difficulty, or great difficulty finding applicants. (READ IN SEQUENCE)

	No difficulty	Some difficulty	Great difficulty	(DON'T READ) DK/NA
A. Occupation #1	1	2	3	4
B. Occupation #2	1	2	3	4
C. Occupation #3	1	2	3	4
D. Occupation #4	1	2	3	4

17. We're interested in how often your business recruits individuals from outside of the Bay Area for an occupation. As I read each occupation, please indicate if you always, frequently, sometimes, rarely or never recruit individuals from outside of the Bay Area for that occupation.

                                                 (DON'T

	Always	**Frequently**	**Sometimes**	**Rarely**	**Never**	**READ) DK/NA**
A. Occupation #1	1	2	3	4	5	6
B. Occupation #2	1	2	3	4	5	6
C. Occupation #3	1	2	3	4	5	6
D. Occupation #4	1	2	3	4	5	6

18. (ASK Q18 ONLY IF Q0 IS GREATER THAN 0) For the same list of occupations, we'd like to know how often your business hires *part-time* workers at your business location. As I read each occupation, please indicate whether your business always, frequently, sometimes, rarely or never hires *part-time* workers for that occupation.

	Always	**Frequently**	**Sometimes**	**Rarely**	**Never**	**(DON'T READ) DK/NA**
A. Occupation #1	1	2	3	4	5	6
B. Occupation #2	1	2	3	4	5	6
C. Occupation #3	1	2	3	4	5	6
D. Occupation #4	1	2	3	4	5	6

19. (ASK Q19 ONLY IF Q5 IS GREATER THAN 0) Same question, only this time we're interested in ***temporary workers***. As I read each occupation, please indicate whether your business always, frequently, sometimes, rarely or never hires ***temporary workers*** for that occupation.

	Always	Frequently	Sometimes	Rarely	Never	(DON'T READ) DK/NA
A. Occupation #1	1	2	3	4	5	6
B. Occupation #2	1	2	3	4	5	6
C. Occupation #3	1	2	3	4	5	6
D. Occupation #4	1	2	3	4	5	6

20. Next, for the same list of occupations, I'd like to know what are the ***typical*** education requirements for successful applicants within each occupation. The categories are: (INTERVIEWER READ OPTIONS). Ok, here's the first one: (READ ITEM A). What are the ***typical*** education requirements for successful applicants in this occupation at your business location? (CONTINUE UNTIL ALL ITEMS ARE READ).

No formal education requirements --------------- 1
Completion of high school or equivalency ----- 2
Certification or Associates Degree-------------- 3
Bachelor's Degree (B.A., B.S.) ------------------- 4
Professional or Graduate Degree
(M.S, Ph.D., J.D., MBA, P.E.)---------------------- 5
DK/NA (Don't Read) ------------------------------- 6

Education Requirements	1	2	3	4	5	6
A. Occupation #1	1	2	3	4	5	6
B. Occupation #2	1	2	3	4	5	6
C. Occupation #3	1	2	3	4	5	6
D. Occupation #4	1	2	3	4	5	6

21. For the occupations we've been discussing, we'd like to know how important it is to have successful applicants with certifications specific to the position. As I read each occupation, please indicate if it is; extremely important, very important, somewhat important, or not at all important for successful applicants to have at least one certification when applying for the position.

	Extremely Important	Very Important	Somewhat Important	Not at all Important	(DON'T READ) DK/NA
A. Occupation #1	1	2	3	4	5
B. Occupation #2	1	2	3	4	5
C. Occupation #3	1	2	3	4	5
D. Occupation #4	1	2	3	4	5

22. What is the typical pay range for each occupation, from entry level to most experienced employees in that occupation? [After each response to the pay range, please clarify whether the intended response was for hourly, monthly, or annual salary]

PAY RANGE	Low	High	Salary Type
A. Occupation #1	###	###	H, M, or A
B. Occupation #2	###	###	H, M, or A
C. Occupation #3	###	###	H, M, or A
D. Occupation #4	###	###	H, M, or A

+++

(Questions 23 and 26 are a loop to be repeated for each of the occupations selected for previous question set Q0-22)

Ok, for the next few questions, please answer for the: _____ (READ OCCUPATION) occupation.

23. I'm going to read a list of general skills. Please tell me which one of these skills are **most important** when considering applicants for _____ (READ OCCUPATION)?

Randomize

        A. Technical competence specific
             to the position------------------------------------- 1
        B. Interpersonal and communication skills ---- 2
        C. Conscientious work ethic and
             positive attitude ---------------------------------- 3
        D. Ability to work independently ----------------- 4
        E. Ability to follow directions ---------------------- 5
        F. Creative problem-solving skills --------------- 6

Important Skills	1	2	3	4	5	6
A. Occupation #1	1	2	3	4	5	6
B. Occupation #2	1	2	3	4	5	6
C. Occupation #3	1	2	3	4	5	6
D. Occupation #4	1	2	3	4	5	6

24. I'm going to read the same list of general skills once more. Please tell me which of these skills, your _____ (READ OCCUPATION) are currently **most deficient** in?

Follow same order as given in Q24.

A. Technical competence specific
    to the position----------------------------------- 1
B. Interpersonal and communication skills ---- 2
C. Conscientious work ethic and
    positive attitude ---------------------------------- 3
D. Ability to work independently ---------------- 4
E. Ability to follow directions --------------------- 5
F. Creative problem-solving skills --------------- 6

Deficient Skills	**1**	**2**	**3**	**4**	**5**	**6**
A. Occupation #1	1	2	3	4	5	6
B. Occupation #2	1	2	3	4	5	6
C. Occupation #3	1	2	3	4	5	6
D. Occupation #4	1	2	3	4	5	6

25. Lastly, we would like to know which occupations successful candidates for
    _____ (READ OCCUPATION) usually have before they become
    _____ (READ OCCUPATION) (INDICATE ALL THAT APPLY).

    Occupations: ------------------- _____
    (DON'T READ) Don't know -----------------------98
    (DON'T READ) Refused--------------------------99

26. And which occupations do current _____ (READ OCCUPATION) usually
    move onto after working successfully as a _____ (READ OCCUPATION)
    (INDICATE ALL THAT APPLY).

    Occupations: ------------------- _____
    (DON'T READ) Don't know -----------------------98
    (DON'T READ) Refused--------------------------99

We've completed all the questions about occupations. Before we finish I'd like to ask a few
general questions and then verify your contact information so we can enter you in the lottery.

27   Would you say that you are very familiar, somewhat familiar, or not at all familiar with
      the Silicon Valley Workforce Investment Network?

      Not at all familiar ------------------------------------- 1   (Skip to question 24)
      Somewhat familiar ----------------------------------- 2
      Very familiar --- 3

28   Generally speaking, is your perception of the Silicon Valley Workforce
        Investment Network favorable, neutral or unfavorable? (GET ANSWER, IF
        'FAVORABLE' OR 'UNFAVORABLE', THEN ASK:) Would that be very
        (favorable/unfavorable) or somewhat (favorable/unfavorable)?

                    Very favorable --------------------------------------- 1
                    Somewhat favorable ------------------------------ 2
                    Neutral -- 3
                    Somewhat unfavorable --------------------------- 4
                    Very unfavorable ---------------------------------- 5
                    (DON'T READ) DK/NA---------------------------- 6

29   Would your company be interested in receiving any of the following services from
        the Silicon Valley Workforce Investment Network:

Randomize			**(Don't Read)**
	Yes	**No**	**DK/NA**
A. Recruitment services	1	2	3
B. Screening & referral of qualified job applicants	1	2	3
C. Downsizing assistance	1	2	3
D. Labor market information	1	2	3
E. Subsidized training of new employees	1	2	3
F. Customized training programs	1	2	3
G. Electronic job posting	1	2	3

Please verify for us your company Information.

D1a   Company name _____
D1b   Company address (include City and Zip) _____
D1c   Web address _____
D1d   Fax number _____

Please verify for us your personal information, so we can enter you into the lottery for
the $500 cash prize.

D2a   Name _____
D2b   Title _____
D2c   E-Mail _____

APPENDIX C: INVENTORY OF BUSINESS RESOURCES – COMPONENT D

Figure 42 Inventory of Business Resources – Security Employers

Company Name	City	Phone Number	Type	Description	Cost	Eligibility
2Wire, Inc.	San Jose	408-428-9500	Information Security Employer	2Wire's HomePortal networking device combines router and firewall functions, and allows multiple home PCs and telephones to share a single broadband DSL or cable hookup.	NA	NA
8x8, Inc.	Santa Clara	408-727-1885	Information Security Employer	The company offers software, services, and equipment that enable voice and video communication over Internet Protocol (IP) networks.	NA	NA
Accellion, Inc.	Palo Alto	650-739-0095	Information Security Employer	The company makes software that removes the attachment from the e-mail message and places it on a server.	NA	NA
Accton Technology Corporation	Santa Clara	408-330-0940	Information Security Employer	Accton Technology manufactures networking and communication equipment.	NA	NA
Actelis Networks, Inc.	Palo Alto	510-545-1045	Information Security Employer	The company's transmission equipment enables carriers and telecommunications providers to deliver Ethernet services over copper wires. Its products are intended to increase the data carrying capacity of the copper lines and eliminate the need for installing fiber optics in the "last mile" between service providers' networks and their subscribers.	NA	NA
ActivCard Corp.	Palo Alto	510-574-0100	Information Security Employer	The company provides a variety of authentication and user management products, including smart cards, biometric readers, tokens, and USB keys. ActivCard's products are used to control and monitor access to intranets, extranets, and the Internet, enabling businesses to authenticate and manage the digital identities of employees, customers, and trading partners.	NA	NA
Actuate Corporation	Mountain View	650-837-2000	Information Security Employer	The company provides enterprise reporting and analytics software that corporations use to analyze business data and design, publish, and distribute report content through company networks and the Internet.	NA	NA
Adaptec, Inc.	Milpitas	408-945-8600	Information Security Employer	The company's adapters and controllers speed data transfer and connect servers and PCs to storage devices.	NA	NA

Company Name	City	Phone Number	Type	Description	Cost	Eligibility
Adax, Inc.	Palo Alto	510-548-7047	Information Security Employer	Its products include network and protocol controllers and related software. The company works with such high-tech vendors as Hughes Software Systems, Intellinet, and Sun Microsystems.	NA	NA
Air Broadband Communications, Inc.	San Jose	408-894-9090	Information Security Employer	Air Broadband Communications makes the Airobatics line of wireless switches and AWACS network management software for 802.11 standard WLAN networks. The company was founded in 2001.	NA	NA
Airgo Networks, Inc.	Palo Alto	650-475-1900	Information Security Employer	Airgo designs wireless networking components centered around its multi-antenna digital signal processing technology, which it touts as boosting the effectiveness of Wi-Fi networking systems.	NA	NA
AirLink Communications, Inc.	Palo Alto	510-781-9700	Information Security Employer	AirLink Communications provides software that enables businesses to control and collect data wirelessly from remote assets.	NA	NA
AirMagnet, Inc.	Sunnyvale	408-400-0200	Information Security Employer	The company provides clients with wireless LAN administration and management products which solve Wi-Fi connection problems, track down unauthorized access, and ensure high levels of wireless network performance, security, and reliability.	NA	NA
Akimbo Systems, Inc.	Palo Alto	650-292-3330	Information Security Employer	Akimbo Systems (formerly Blue Falcon Networks) makes networking software designed to improve streaming media delivery over the Internet and corporate intranets. Its products are used for tasks such as program downloading, managing libraries of content, searching, and parental control.	NA	NA
Alacritech, Inc.	San Jose	408-287-9997	Information Security Employer	The company makes network interface cards that increase processing speed in servers and storage systems by offloading protocol processing from the host CPU (central processing unit) to the adaptor card.	NA	NA
Alien Technology Corporation	Morgan Hill	408-782-3900	Information Security Employer	Alien Technology makes low-cost, high-volume radio frequency identification (RFID) tags using its Fluidic Self Assembly (FSA) manufacturing process.	NA	NA

Company Name	City	Phone Number	Type	Description	Cost	Eligibility
All Covered, Inc.	Mountain View	650-486-5000	Information Security Employer	The company provides outsourced IT services for small businesses and branch offices of larger companies. Offerings include network design, systems integration, application development, training, support, procurement, consulting, and maintenance.	NA	NA
Alloptic, Inc.	Palo Alto	925-245-7600	Information Security Employer	The company supplies network infrastructure equipment, software, and services for that businesses and residential customers use to deliver and manage a complete bundle of data, video, and voice services.	NA	NA
AltiGen Communications, Inc.	Palo Alto	510-252-9712	Information Security Employer	The company's Quantum and Triton computer circuit boards and associated AltiWare and AltiView software enable the transmission of digital calls over analog phone lines.	NA	NA
AMAX Engineering Corp.	Palo Alto	510-651-8886	Information Security Employer	The company (which does business as AMAX Information Technologies) primarily distributes and resells computer hardware such as servers, clusters, direct attached storage (DAS), network attached storage (NAS), industrial computers, and workstattions.	NA	NA
AmberPoint, Inc.	Palo Alto	510-663-6300	Information Security Employer	AmberPoint provides Web services software tools that work with Microsoft's .NET technology and with Tivoli software from IBM.	NA	NA
AMBI Protective Services, Inc.	Palo Alto	510-271-1800	Homeland Security Employer	AMBI Protective Services provides executive protection and aviation security services to customers worldwide. The company was founded in 1981 by CEO Stephen Jones.	NA	NA
Ampex Corporation	Mountain View	650-367-2011	Homeland Security Employer	The company that invented the videocassette recorder makes digital image storage systems for television archiving, government intelligence gathering, and enterprise data storage.	NA	NA
Ancore Corporation	Santa Clara	408-727-0607	Homeland Security Employer	The company's Pulsed Fast Neutron Analysis (PFNA) technology measures elemental contents (oxygen, nitrogen, and chlorine) found in drugs, explosives, and hazardous materials.	NA	NA

Company Name	City	Phone Number	Type	Description	Cost	Eligibility
ANDA Networks, Inc.	Sunnyvale	408-519-4900	Information Security Employer	The company's primary product is the Universal Access Platform (UAP), which is a communications network switching device that combines a variety of network protocols, including DSL, fiber optics, and analog voice lines.	NA	NA
Aperto Networks, Inc.	Milpitas	408-719-9977	Information Security Employer	Aperto Networks is a manufacturer of wireless networking equipment used to connect service providers to broadband customers over the last mile. Its PacketWave and PacketMAX product lines (the latter using WiMAX technology) include radio frequency base stations, antennas, and customer premise equipment.	NA	NA
Apexon, Inc.	San Jose	408-324-2500	Information Security Employer	The company makes supplier relationship management and quality collaboration software for manufacturers around the world. The Apexon Quality suite helps manufacturers interact with their suppliers to improve product quality, reduce costs related to poor quality, and create repeatable workflows that enable quality managers, engineers, and technicians to work in concert.	NA	NA
Apple Computer, Inc.	Cupertino	408-996-1010	Information Security Employer	The company that has urged customers to "Think Different" now wants them to "Think Digital." Apple Computer's desktop and laptop computers, all of which feature its OS X operating system, include its sleek iMac and iBook for the consumer and education markets, and more powerful Power Mac and PowerBook for high-end consumers and professionals involved in design and publishing.	NA	NA
AppStream Inc.	Palo Alto	650-251-2500	Information Security Employer	The company provides infrastructure software and services that enable customers to deploy and manage networked applications.	NA	NA
APTARE, Inc.	Campbell	408-871-9848	Information Security Employer	APTARE provides storage software that customers use to manage functions such as enterprise data backup and disaster recovery.	NA	NA

Company Name	City	Phone Number	Type	Description	Cost	Eligibility
ArcSight, Inc.	Cupertino	408-864-2600	Information Security Employer	The company provides enterprise security management software used for functions such as risk correlation, threat management, compliance reporting, incident investigation, and reporting.	NA	NA
Arcwave, Inc.	Campbell	408-558-2300	Information Security Employer	Arcwave develops wireless networking equipment, including hubs, transceivers, antennas, and access points.	NA	NA
Ariba, Inc.	Sunnyvale	650-390-1000	Information Security Employer	The company is a leading provider of procurement software and consulting services used by manufacturers, retailers, and distributors to connect with suppliers and manage procurement.	NA	NA
Arkivio Inc.	Mountain View	650-237-6100	Information Security Employer	Arkivio offers storage management software designed to enable IT managers of medium and large businesses to best maintain data across storage networks.	NA	NA
Array Networks, Inc.	Milpitas	408-240-8700	Information Security Employer	Array Networks makes networking equipment that companies use to securely manage and deliver applications.	NA	NA
ArrayComm, Inc.	San Jose	408-428-9080	Information Security Employer	The company's signal processing software, called IntelliCell, maximizes the range, capacity, and quality of cellular and broadband wireless systems.	NA	NA
Aruba Wireless Networks, Inc.	Sunnyvale	408-227-4500	Information Security Employer	Aruba Wireless Networks designs equipment used to build wireless LANs.	NA	NA
Arxan Technologies, Inc.	Sunnyvale	415-445-1350	Information Security Employer	The company provides security software and services for protecting applications from piracy, reverse engineering, and unauthorized hacking.	NA	NA
Asanté Technologies, Inc.	San Jose	408-435-8388	Information Security Employer	One of the largest suppliers of networking equipment for the Apple platform, Asanté also offers products compatible with Windows and Linux.	NA	NA
AsiaInfo Holdings, Inc.	Santa Clara	408-970-9788	Information Security Employer	AsiaInfo Holdings helps keep the information flowing throughout China. The company provides software and services used by telecommunications companies for such functions as activating services, billing, and customer relationship management (CRM).	NA	NA

Company Name	City	Phone Number	Type	Description	Cost	Eligibility
Atempo S.A.	Palo Alto	650-494-2600	Information Security Employer	Atempo helps large and midsized firms return to business after a disaster or computer system glitch. Atempo's storage software manages data backup and recovery functions.	NA	NA
Athena Semiconductors, Inc.	Palo Alto	510-651-6000	Information Security Employer	The company, Athena Semiconductors, designs chipsets used in wireless LAN networking equipment.	NA	NA
Atmel Corporation	San Jose	408-441-0311	Information Security Employer	The semiconductor maker's product lines include nonvolatile memory devices such as flash memory and ROM chips, as well as programmable logic chips, microcontrollers, application-specific integrated circuits (ASICs), and application-specific standard products (ASSPs).	NA	NA
Atrica Inc.	Santa Clara	408-562-9400	Information Security Employer	The company makes optical switching equipment for building metro area networks (MAN).	NA	NA
Atrua Technologies, Inc.	Campbell	408-370-8000	Information Security Employer	The company, which was founded in 2000, develops fingerprint imaging sensors and related fingerprint recognition algorithms.	NA	NA
AudioCodes Ltd.	San Jose	408-441-1175	Information Security Employer	The company's voice compression chips and related products turn audio signals into packets that can be sent more efficiently over packet networks, including the Internet, than over traditional telephone networks.	NA	NA
Autonomy Corporation plc	Sunnyvale	415-243-9955	Information Security Employer	The company's software organizes unstructured data from e-mail, Web pages, presentations, business applications, and other information not commonly stored in databases.	NA	NA
Avanex Corporation	Palo Alto	510-897-4188	Information Security Employer	The company's miniature photonic components help increase the speed and capacity of fiber-optic communications networks, in part by compensating for signal degradation during transmission.	NA	NA
Axonwave Software Inc.	Campbell	866-428-2424	Information Security Employer	Axonwave Software (formerly Gavagai Technology) is a provider of content intelligence systems, which enables companies to analyze large volumes of unstructured information such as customer feedback, industry research, and public records.	NA	NA

Company Name	City	Phone Number	Type	Description	Cost	Eligibility
BackWeb Technologies Ltd.	San Jose	408-933-1700	Information Security Employer	The company's Offline Access Server software lets mobile workers access information such repair manuals, sales tools, and work orders from corporate intranets and Web applications, even when disconnected from the network.	NA	NA
Bay Microsystems, Inc.	Santa Clara	408-653-2181	Information Security Employer	Bay Microsystems develops processors used in routing and switching equipment.	NA	NA
BayTSP, Inc.	Los Gatos	408-341-2300	Information Security Employer	BayTSP is helping the motion picture and recording industries chase down all those sharers of movie and music files on the Internet.	NA	NA
Be Here Corporation	Palo Alto	510-505-7900	Information Security Employer	The company offers software that creates panoramic images for both pre-recorded and live presentations and includes applications for still photography and security.	NA	NA
Bell Microproducts Inc.	San Jose	408-451-9400	Information Security Employer	The company distributes network storage, semiconductor, and other computer products, primarily to computer makers and resellers.	NA	NA
Big Fix, Inc.	Palo Alto	510-652-6700	Information Security Employer	The company provides security configuration management used to handle security configurations and systems updates on computers spread throughout enterprises.	NA	NA
BigBand Networks, Inc.	Mountain View	650-995-5000	Information Security Employer	BigBand Networks makes broadband networking equipment for digital cable television providers.	NA	NA
BiTMICRO Networks, Inc.	Palo Alto	510-623-2341	Information Security Employer	The company specializes in flash-based solid state disk storage.	NA	NA
Bivio Networks Inc.	Palo Alto	925-924-8600	Information Security Employer	Bivio Networks provides network devices used to consolidate services and manage tasks such as security, routing, and packet processing.	NA	NA
BlueArc Corporation	San Jose	408-576-6600	Information Security Employer	The company makes high-end network-attached storage (NAS) devices.	NA	NA

Company Name	City	Phone Number	Type	Description	Cost	Eligibility
Bookham, Inc.	San Jose	408-919-1500	Information Security Employer	Bookham integrates the light processing functions of optical networking components onto silicon chips, which it then puts into communications products such as transceivers, transponders, transmitters, receivers, and multiplexers.	NA	NA
Borland Software Corporation	Santa Clara	831-431-1000	Information Security Employer	Borland Software offers technology used in the development, deployment, integration, and management of software applications.	NA	NA
BroadWare Technologies, Inc.	Cupertino	408-342-2600	Information Security Employer	BroadWare provides servers, matrix switches, data storage, software, and related accessories that allow customers to remotely monitor facilities, collaborate over the Internet, and to stream video.	NA	NA
Brocade Communications Systems, Inc.	San Jose	408-333-8000	Information Security Employer	Brocade Communications Systems makes Fibre Channel switches and related software for connecting corporate storage systems and servers.	NA	NA
Business Wire	Sunnyvale	415-986-4422	Information Security Employer	Business Wire electronically distributes company press releases and other company information to news media, online services, and databases worldwide.	NA	NA
Bytemobile, Inc.	Mountain View	650-641-7700	Information Security Employer	Bytemobile provides acceleration and optimization software that service providers and network operators use to speed access to data and applications.	NA	NA
Cadence Design Systems, Inc.	San Jose	408-943-1234	Information Security Employer	A leader in the electronic design automation (EDA) market, Cadence sells and leases software and hardware products for designing integrated circuits (ICs), printed circuit boards (PCBs), and other electronic systems.	NA	NA
Calient Networks, Inc.	San Jose	408-972-3600	Information Security Employer	The company designs switches used to direct signals in fiber-optic communications networks.	NA	NA

Company Name	City	Phone Number	Type	Description	Cost	Eligibility
Call Centers International	Palo Alto	510-758-4486	Information Security Employer	Call Centers International (CCI) provides lead generation, database maintenance, event support, and other telemarketing services to clients in the business to business arena.	NA	NA
CAS Systems, Inc.	Palo Alto	510-285-3800	Information Security Employer	CAS Systems offers telemarketing services to companies that produce computer hardware, software and/ or networking products.	NA	NA
Caspian Networks, Inc.	San Jose	408-382-5200	Information Security Employer	The company's IP routers are designed to improve performance of core communications networks.	NA	NA
Cassatt Corporation	San Jose	408-737-7600	Information Security Employer	The company is developing software products and services that will aid customers in integrating grid computing applications with service-oriented architectures.	NA	NA
Cast Iron Systems Inc.	Mountain View	650-230-0621	Information Security Employer	The company makes systems used to integrate business processes and software applications, linking together disparate hardware throughout enterprises.	NA	NA
Castelle	Morgan Hill	408-852-8000	Information Security Employer	The company makes software and hardware that improve the ability of corporate computer networks to fax and print documents.	NA	NA
Catalyst Semiconductor, Inc.	Sunnyvale	408-542-1000	Information Security Employer	The company develops nonvolatile memory chips, which retain data when a system's power is off.	NA	NA
Catapult Communications Corporation	Mountain View	650-960-1025	Information Security Employer	Its digital communication test systems are used by telecom service providers and equipment makers to design, test, and configure network elements.	NA	NA
Cavium Networks, Inc.	Santa Clara	408-844-8420	Information Security Employer	The company designs specialized microprocessors used in secure network transmissions.	NA	NA
CCT Technologies Inc.	San Jose	408-519-3200	Information Security Employer	The company, which does business as ComputerLand, provides business information technology services.	NA	NA

Company Name	City	Phone Number	Type	Description	Cost	Eligibility
Celeritek, Inc.	Santa Clara	408-986-5060	Information Security Employer	The company designed integrated circuits using gallium arsenide (GaAs), a specialized semiconductor material that allows chips to run faster and with less energy consumption, compared with ordinary silicon.	NA	NA
CenterBeam, Inc.	San Jose	408-750-0500	Information Security Employer	CenterBeam is one of many companies that help such poster children by taking on the day-to-day management and support of everything IT.	NA	NA
Centillium Communications, Inc.	Palo Alto	510-771-3700	Information Security Employer	The company designs and markets integrated circuits used in high-speed digital subscriber line (DSL) networking equipment.	NA	NA
Cenzic Inc.	Santa Clara	866-423-6942	Information Security Employer	The company provides software tools used for security quality assurance testing.	NA	NA
Check Point Software Technologies Ltd.	Mountain View	650-628-2000	Information Security Employer	The company provides security software for corporate networks and service providers, spanning firewalls, intranets, and extranets.	NA	NA
Chordiant Software, Inc.	Cupertino	408-517-6100	Information Security Employer	The company develops customer relationship management (CRM) software that links call centers, computer networks, databases, and the Internet, allowing departments and employees to share data, collaborate on projects, and retain customers while lowering their operational costs.	NA	NA
Cisco Systems, Inc.	San Jose	408-526-4000	Information Security Employer	The company's bread and butter products are routers and switches; Cisco's switch line includes equipment based on Ethernet, Gigabit Ethernet, Token Ring, and ATM technologies.	NA	NA
Clearswift Limited	Mountain View	800-982-6109	Information Security Employer	The company provides software used to protect and manage content security functions.	NA	NA

Company Name	City	Phone Number	Type	Description	Cost	Eligibility
CNET Networks, Inc.	Sunnyvale	415-344-2000	Information Security Employer	CNET Networks provides information, product reviews, and price comparisons for the tech-savvy and not-so-tech-savvy through its flagship Web sites CNET.	NA	NA
CommerceNet	Mountain View	650-962-2600	Information Security Employer	CommerceNet is a not-for-profit organization that helps its members establish electronic trading networks and improve other Internet-related business operations.	NA	NA
Commtouch Software Ltd.	Mountain View	650-864-2000	Information Security Employer	Commtouch Software offers e-mail filtering and management applications that help administrators reduce the flood of unsolicited messages (spam) on their systems.	NA	NA
Communications & Power Industries Holding Corporation	Palo Alto	650-846-2900	Information Security Employer	Communications & Power Industries Holding, through its wholly-owned subsidiary, Communications and Power Industries (CPI), makes broadcast and wireless components such as satellite communications transmitters, amplifiers, sensors, X-ray equipment, power supplies, transmitters, and microwave components.	NA	NA
Comnetix Inc.	Campbell	408-879-7420	Homeland Security Employer	Comnetix is a developer of personal identification and authentication hardware and software products used primarily in law enforcement and criminal justice.	NA	NA
Configure Inc.	San Jose	408-269-1122	Information Security Employer	Configure designs and implements telecommunications networks for small- and medium-size businesses.	NA	NA
CoroSoft Technologies, Inc.	Cupertino	408-732-7585	Information Security Employer	CoroSoft provides infrastructure automation software used to manage and administer a variety of enterprise applications, including databases, application servers, and storage software.	NA	NA

Company Name	City	Phone Number	Type	Description	Cost	Eligibility
CoSine Communications, Inc.	San Jose	408-236-7515	Information Security Employer	The company manufactures and markets switches and software used by telecom service providers to manage their Internet protocol-based voice and data communications networks.	NA	NA
Costa Enterprises Inc.	Palo Alto	925-606-6495	Information Security Employer	Costa Enterprises is a reseller of networking and communication equipment and parts.	NA	NA
Cotelligent, Inc.	Sunnyvale	415-477-9900	Information Security Employer	The company's information technology (IT) services include application development, network design, systems integration, and wireless applications and services.	NA	NA
Counterpane Internet Security, Inc.	Mountain View	650-404-2400	Information Security Employer	The company provides a variety of managed network security monitoring services.	NA	NA
Coyote Point Systems, Inc.	San Jose	650-969-6000	Information Security Employer	Coyote Point Systems provides load balancing hardware and software that is used to increase network capacity and improve performance.	NA	NA
Cranite Systems, Inc.	San Jose	408-360-4900	Information Security Employer	Cranite Systems offers its WirelessWall software, a LAN security software product for wireless networks.	NA	NA
Creator Connection, Inc.	Palo Alto	650-327-1986	Information Security Employer	Creator Connection is an application service provider (ASP) that offers CreatorBase, a hosted collaborative network for sharing and organizing information and managing projects.	NA	NA
Credence Systems Corporation	Milpitas	408-635-4300	Information Security Employer	The company makes automatic test equipment and related software used during the design, validation, and manufacturing stages of semiconductor production.	NA	NA
Critical Path, Inc.	Sunnyvale	415-541-2500	Information Security Employer	The company, which offers messaging and identity management services, has operated at a loss since its inception.	NA	NA

Company Name	City	Phone Number	Type	Description	Cost	Eligibility
Crossbow Technology, Inc.	San Jose	408-965-3300	Homeland Security Employer	The company manufactures inertial sensor systems for aviation, land, and marine applications.	NA	NA
Cybernet Software Systems, Inc.	San Jose	95128	Information Security Employer	The company provides offshore software and information technology development services for corporations and independent software vendors.	NA	NA
CyberSource Corporation	Mountain View	650-965-6000	Information Security Employer	CyberSource provides software and services that help ensure that e-commerce and other Internet-based transactions are processed securely.	NA	NA
Cyclades Corporation	Palo Alto	510-771-6100	Information Security Employer	Cyclades Corporation makes Linux-based servers, switches, and network management appliances.	NA	NA
Cypress Semiconductor Corporation	San Jose	408-943-2600	Information Security Employer	Cypress Semiconductor makes more than 400 types of integrated circuits; its non-memory products include programmable logic devices, clock and timing chips, Universal Serial Bus (USB) microcontrollers, and specialty products for the computer and data communications markets.	NA	NA
Decru, Inc.	Mountain View	650-413-6700	Information Security Employer	Decru provides network security appliances used to encrypt and secure data for universities, government agencies, and corporations.	NA	NA
Deltagen, Inc.	Mountain View	650-569-5100	Information Security Employer	Deltagen develops technology that can generate, analyze, and study genetic information.	NA	NA
DreamFactory Software, Inc.	Los Gatos	408-399-7454	Information Security Employer	Software developers from IBM, salesforce.com, and Grand Central Communications, however, are using DreamFactory's tools to save time on implementing Web services.	NA	NA
Dust Networks, Inc.	Palo Alto	510-548-3878	Information Security Employer	Dust Networks makes wireless sensor network systems that monitor and control building systems.	NA	NA

Company Name	City	Phone Number	Type	Description	Cost	Eligibility
Ebara Corporation	San Jose	408-571-2250	Information Security Employer	The company is one of the world's largest manufacturers of industrial pumps and related equipment.	NA	NA
Edgewater Networks, Inc	Santa Clara	408-351-7200	Information Security Employer	Edgewater Networks makes network appliances used to provide secure voice and video services over IP networks	NA	NA
Embarcadero Technologies, Inc.	Sunnyvale	415-834-3131	Information Security Employer	The company makes data lifecycle management software used to build, test, and manage application infrastructure and databases for large corporations.	NA	NA
Entertainment Digital Network, Inc.	Sunnyvale	415-274-8800	Information Security Employer	The company allows its entertainment and advertising clients (production companies, directors, talent) to collaborate on projects by exchanging audio and video files over its wide-area network, established through alliances with telephone companies, satellite operators, and ISPs.	NA	NA
Equator Technologies, Inc.	Campbell	408-369-5200	Information Security Employer	The company has been acquired by Pixelworks for approximately $109 million in cash, plus the assumption of stock options.	NA	NA
Equinix, Inc.	Palo Alto	650-513-7000	Information Security Employer	The company provides hosting and colocation facilities (Internet Business Exchanges, IBXs) where ISPs, telecommunications carriers, and content providers can locate equipment and interconnect networks and operations.	NA	NA
Etherlinx Communications, Inc.	Campbell	408-626-9323	Information Security Employer	EtherLinx wireless network access point equipment that uses Wi-Fi technology to enable broadband Internet access.	NA	NA
Eudyna Devices Inc	San Jose	408-232-9500	Information Security Employer	The company also manufactures optoelectronic components used in fiber optic networks.	NA	NA
EVault, Inc.	Palo Alto	510-903-7100	Information Security Employer	The company provides online data backup and recovery services based on its InfoStage Quickrecovery and Ultrarecovery software.	NA	NA

Company Name	City	Phone Number	Type	Description	Cost	Eligibility
Everypath, Inc.	Santa Clara	408-562-8000	Information Security Employer	The company's products can be used to reconfigure Web content for delivery to devices such as PDAs, wireless and standard phones, and pagers.	NA	NA
EvolveWare, Inc.	Santa Clara	408-748-8301	Information Security Employer	The company develops a wide array of software for its corporate clients, including e-commerce, data storage, financial, and networking applications.	NA	NA
Exar Corporation	Palo Alto	510-668-7000	Information Security Employer	The fabless chip maker's digital, analog, and mixed-signal integrated circuits are used in broadband networking equipment -- especially telecommunications infrastructure gear -- as well as in video and imaging devices such as automated test equipment, medical instrumentation, digital cameras, pagers, and scanners.	NA	NA
Extreme Networks, Inc.	Santa Clara	408-579-2800	Information Security Employer	The company designs and markets three switch families -- Alpine, BlackDiamond, and Summit -- using custom semiconductor components to address network switching needs from desktops to network cores.	NA	NA
EZchip Technologies Ltd.	Campbell	408-879-7355	Information Security Employer	The company designs 10-Gigabit network processors and related products used in high-speed telecommunications equipment such as routers and switches.	NA	NA
FileMaker, Inc.	Santa Clara	408-987-7000	Information Security Employer	A subsidiary of Apple Computer, FileMaker makes one of the leading database software applications.	NA	NA
FineGround Networks, Inc.	Campbell	408-376-0570	Information Security Employer	The company provides software that reduces bottlenecks and speeds the performance of companies' existing application delivery methods.	NA	NA

Company Name	City	Phone Number	Type	Description	Cost	Eligibility
FocusFrame, Inc.	Sunnyvale	415-293-7800	Information Security Employer	The company provides a variety of information technology services such as implementation, systems integration, network design, application development, support, training, and consulting.	NA	NA
Force10 Networks, Inc.	Milpitas	408-571-3500	Information Security Employer	The company's E-series products, based on the Ethernet transmission protocol, are designed for such applications as server consolidation, metro-level Internet and Ethernet connectivity, and grid computing.	NA	NA
Foundry Networks, Inc.	San Jose	408-586-1700	Information Security Employer	Businesses, schools, government agencies, and communications service providers use the company's high-performance switches and routers (including Layer 2, Layer 3, and Layer 4-7 equipment) to build local-, metro-, and wide-area networks.	NA	NA
Fujitsu Microelectronics America, Inc.	Sunnyvale	408-737-5600	Information Security Employer	Fujitsu Microelectronics America is the US semiconductor arm of Japanese electronics giant Fujitsu.	NA	NA
FusionOne, Inc.	San Jose	408-282-1200	Information Security Employer	Founded in 1998, FusionOne offers software that enables data access and synchronization via the Internet for consumers and companies with highly mobile employees.	NA	NA
FusionStorm	Sunnyvale	415-623-2626	Information Security Employer	The company provides a variety of information technology and remote support services.	NA	NA
Gemfire Corporation	Palo Alto	510-438-7500	Information Security Employer	Under its PhotonIC brand, Gemfire is developing optical networking devices -- such as attenuator arrays and pump laser source arrays -- that replace separate components with single, highly integrated units.	NA	NA

Company Name	City	Phone Number	Type	Description	Cost	Eligibility
Good Technology, Inc.	Santa Clara	408-327-6000	Information Security Employer	The company's GoodLink software syncs to Microsoft's Exchange Server and provides handheld devices with wireless access to that company's popular Outlook application.	NA	NA
Google Inc.	Mountain View	650-623-4000	Information Security Employer	The company operates one of the most popular, and powerful, search engines, offering targeted search results from more than 8 billion Web pages.	NA	NA
GoRemote Internet Communications, Inc.	Milpitas	408-955-1920	Information Security Employer	The Internet-based communications provider enables travelling and remote workers to securely access their corporate networks from more than 40,000 wired and wireless access points.	NA	NA
Gracenote, Inc.	Palo Alto	510-547-9680	Information Security Employer	Founded in 1995, Gracenote provides music recognition technologies that compare digital music files to a worldwide database of music information, enabling digital audio devices to identify the song or track you're listening to.	NA	NA
Grand Central Communications, Inc.	Sunnyvale	415-344-3200	Information Security Employer	Its Web-based network is designed to connect to a company's own network and smooth some of the communication wrinkles between the company and its vendors and customers.	NA	NA
Groupe SILICOMP SA	Palo Alto	925-931-4450	Information Security Employer	The company provides business IT services from several locations in France, as well as single locations in Belgium, Canada (Quebec), the US (Pleasanton, California), Switzerland, and Singapore.	NA	NA
Harbor Research, Inc.	Sunnyvale	415-615-9400	Information Security Employer	Harbor Research provides Internet networking consulting services to firms in the communications, technology, and publishing industries, among others.	NA	NA

Company Name	City	Phone Number	Type	Description	Cost	Eligibility
Hitachi Data Systems Corporation	Santa Clara	408-970-1000	Information Security Employer	A subsidiary of Hitachi, Ltd., HDS contends with the likes of EMC and IBM in the market for high-end RAID (redundant array of independent disks) storage devices and software. Its storage systems -- including its Thunder, Lightning, and TagmaStore lines -- range in size from PC-sized units to massive cabinets that can manage more than 30 petabytes of data. The company also sells network-attached storage (NAS) servers.	NA	NA
Home Director, Inc.	Palo Alto	925-373-0438	Information Security Employer	Home Director designed and installed home networking systems that linked such items as personal computers, security systems, televisions, utilities, and the Internet.	NA	NA
InDefense, Inc.	Santa Clara	831-471-1413	Information Security Employer	The company's products do not rely on regular software updates to keep abreast of new strains of viruses and other malicious code, but instead recognize questionable code and alert the user to its presence.	NA	NA
Insignia Solutions plc	Palo Alto	510-360-3700	Information Security Employer	The Anglo-American company sold its Jeode Java Virtual Machine line of software development tools to Esmertec of Switzerland, and transferred more than 40 employees to the Swiss company.	NA	NA
International Network Services Inc.	Santa Clara	408-330-2700	Information Security Employer	International Network Services (INS) provides network consulting services, including business alignment, IT infrastructure, network and systems management, operating systems integration, project management, security consulting, storage, and strategy and planning.	NA	NA
InterSAN, Incorporated	Santa Clara	831-430-0692	Information Security Employer	The company provides software used to manage storage systems and related applications in networked environments.	NA	NA

Company Name	City	Phone Number	Type	Description	Cost	Eligibility
Intersil Corporation	Milpitas	408-432-8888	Information Security Employer	The company makes high-speed integrated circuits (ICs), primarily for the communications and computing markets.	NA	NA
InterWorking Labs, Inc.	Santa Clara	831-430-3610	Information Security Employer	InterWorking Labs (IWL) helps technology companies get products to market more quickly with its SilverCreek line of testing and verification software for networking hardware and software, wireless systems, cable television, and embedded systems.	NA	NA
iolon, Inc.	San Jose	408-952-5000	Information Security Employer	It specializes in optical components used in telecommunications network equipment.	NA	NA
IQ Biometrix, Inc.	Palo Alto	510-795-2900	Information Security Employer	The company is a developer of facial imagery technology for law enforcement and security use within government and private industries.	NA	NA
IrisLogic, Inc.	Santa Clara	408-855-8741	Information Security Employer	The company has facilities in India and the US.	NA	NA
IronPort Systems, Inc.	Mountain View	650-989-6500	Information Security Employer	The company makes network gear and software for messaging infrastructure.	NA	NA
IXOS SOFTWARE AG	Palo Alto	650-294-5800	Information Security Employer	IXOS (pronounced icks-ous) SOFTWARE develops business document management software primarily for use with enterprise resource planning (ERP), customer relationship management (CRM), and groupware (MS Exchange) applications.	NA	NA
JDS Uniphase Corporation	San Jose	408-546-5000	Information Security Employer	The company makes components, modules, and equipment used to build fiber-optic telecommunications and cable television networks.	NA	NA
Jigsaw Data Corporation	Palo Alto	650-655-2150	Information Security Employer	Jigsaw Data is an online marketplace of business contacts that are contributed and evaluated by members of the company's service.	NA	NA

Company Name	City	Phone Number	Type	Description	Cost	Eligibility
Juniper Networks, Inc.	Sunnyvale	408-745-2000	Information Security Employer	The company designs and sells Internet Protocol (IP) routers for private and public access networks.	NA	NA
Kasenna, Inc.	Mountain View	650-943-8600	Information Security Employer	The company develops and markets video delivery software for companies in markets such as broadcast, government, and hospitality, as well as for system integrators and developers.	NA	NA
Keynote Systems, Inc.	Palo Alto	650-403-2400	Information Security Employer	Keynote Systems is a leading provider of Internet performance management services with about 2,100 clients, including some of the top US Web sites and FORTUNE 100 companies.	NA	NA
Kinar, Inc.	Santa Clara	408-282-3563	Information Security Employer	Kinar provides software for the secure transmission of confidential documents and e-mail.	NA	NA
Komag, Incorporated	San Jose	408-576-2000	Information Security Employer	The company is among the leading independent makers of thin-film disks.	NA	NA
Landmark Protection, Inc.	San Jose	408-293-6300	Homeland Security Employer	Landmark Protection provides security guard, patrol, and reception services to corporate clients.	NA	NA
LaserCard Corporation	Mountain View	650-969-4428	Information Security Employer	The company (formerly Drexler Technology) makes wallet-sized, recordable optical data cards that permanently store electronic text, graphics, photos, and security marks such as fingerprints and holograms.	NA	NA
Lawrence Livermore National Laboratory	Palo Alto	925-422-1100	Homeland Security Employer	Lawrence Livermore National Laboratory (LLNL) is a national security laboratory responsible for ensuring that the nation's nuclear weapons remain safe, secure, and reliable through application of advances in science and technology.	NA	NA

Company Name	City	Phone Number	Type	Description	Cost	Eligibility
LEGATO Software	Mountain View	650-210-7000	Information Security Employer	The company's storage management software backs up and protects data contained in networks, server systems, software applications, databases, mobile devices, and storage systems.	NA	NA
Leopard Logic, Inc.	Cupertino	408-777-0905	Information Security Employer	The company makes digital logic devices for use in networking, storage, and wireless communications equipment.	NA	NA
Li & Fung Limited	Sunnyvale	415-315-7440	Information Security Employer	The global consumer products trader acts as a supply chain manager for US and European retailers sourcing high-volume, time-sensitive consumer goods, primarily in Asia.	NA	NA
LIGHTCONNECT, Inc.	Palo Alto	510-713-3120	Information Security Employer	The company makes MEMS (microelectromechanical systems) components that allocate bandwidth in optical communications networks.	NA	NA
LightSurf Technologies, Inc.	Santa Clara	831-469-1850	Information Security Employer	The company's software enables picture messaging, database access, and visual content distribution across wireless and wired networks.	NA	NA
LinkedIn Corporation	Palo Alto	650-687-3600	Information Security Employer	The company is an online service designed to help professionals find and connect with one another.	NA	NA
LookSmart, Ltd.	Sunnyvale	415-348-7000	Information Security Employer	LookSmart operates an Internet search engine that indexes more than a billion Web pages and ranks results according to relevancy.	NA	NA
Macrovision Corporation	Santa Clara	408-743-8600	Information Security Employer	The company develops copyright protection and video scrambling technologies for commercial videocassette duplicators, music labels, software companies, set-top decoder manufacturers, and the major motion picture studios.	NA	NA
Maranti Networks, Inc.	San Jose	408-834-4000	Information Security Employer	Maranti Networks provides storage networking products for corporate data centers.	NA	NA

Company Name	City	Phone Number	Type	Description	Cost	Eligibility
McAfee, Inc.	Santa Clara	408-988-3832	Information Security Employer	The company provides antivirus software and other security products.	NA	NA
MDL Information Systems, Inc.	Palo Alto	510-895-1313	Information Security Employer	MDL, a subsidiary of Reed Elsevier Group, the Anglo-Dutch media giant, offers software, reference databases, consulting services, and other resources for managing scientific data during research and development processes.	NA	NA
MegaPath Networks Inc.	Palo Alto	925-201-2500	Information Security Employer	MegaPath Networks provides broadband services, including high-speed Internet, virtual private networks, and Web hosting to small businesses and home offices.	NA	NA
MegaPath Networks Inc.	Santa Clara	408-970-3400	Information Security Employer	Mellanox Technologies, a fabless semiconductor company founded in 1999, designs chips around the InfiniBand data exchange standard, which regulates the way network components such as servers and data storage systems communicate with each other.	NA	NA
Menlo Logic LLC	Palo Alto	408-891-4718	Information Security Employer	Menlo Logic develops enterprise security software used to address tasks such as SSL-encryption and remote access management.	NA	NA
Meru Networks, Inc.	Sunnyvale	408-215-5300	Information Security Employer	Meru Networks develops networking equipment for wireless LANs.	NA	NA
MetiLinx, Inc.	Palo Alto	650-292-9200	Information Security Employer	The company's MetiLinx Infrastructure Suite identifies areas where technology infrastructure can't handle any more workload and routes transactions to places with sufficient capacity.	NA	NA

Company Name	City	Phone Number	Type	Description	Cost	Eligibility
Micrel, Incorporated	San Jose	408-944-0800	Information Security Employer	The company manufactures more than 1,700 kinds of integrated circuits (ICs); its lineup includes high-performance analog, digital, and mixed-signal ICs used primarily for power management in computers, networking equipment, industrial electronics, and cellular phones and other telecommunications gear.	NA	NA
Micromuse Inc.	Sunnyvale	415-538-9090	Information Security Employer	The company provides software that monitors and manages the elements of information technology infrastructures.	NA	NA
Mirae Corporation	San Jose	408-432-3880	Information Security Employer	The company (whose name is Korean for "future") makes semiconductor manufacturing equipment, including more than 30 kinds of test handlers -- robotic devices that manipulate integrated circuits (ICs) during testing.	NA	NA
MiTAC International Corporation	Palo Alto	510-252-6900	Information Security Employer	MiTAC International manufactures PCs, servers, LCD monitors, motherboards, notebook computers, PDAs, networking equipment, and other products for leading computer vendors such as Dell and Intel.	NA	NA
Moody's KMV Company	Sunnyvale	415-296-9669	Information Security Employer	A subsidiary of credit ratings guru Moody's Corporation, the company provides quantitative credit analysis software for lenders, investors, and corporations.	NA	NA
MOSAID Technologies Incorporated	Santa Clara	408-727-7199	Information Security Employer	MOSAID licenses its intellectual property designs to other chip makers; these designs allow specialized memory features to be embedded in system-on-a-chip (SOC) devices used in networking equipment.	NA	NA

Company Name	City	Phone Number	Type	Description	Cost	Eligibility
Mysticom Ltd.	Mountain View	650-210-8080	Information Security Employer	The fabless company was founded by veteran chip engineers in 1997 to offer intellectual property designs for mixed-signal and digital signal processor chips used in high-speed networking applications.	NA	NA
Narus, Inc.	Mountain View	650-230-9300	Information Security Employer	The company provides software used by telecommunications services providers to optimize their IP platforms.	NA	NA
NASA Ames Research Center	Mountain View	650-604-5000	Information Security Employer	The Ames center was founded in 1939 and, eight years later, was the location above which Chuck Yeager flew faster than the speed of sound.	NA	NA
nCircle Network Security, Inc.	Sunnyvale	415-625-5900	Information Security Employer	nCircle Network Security manufactures devices that assess and monitor enterprise network security, keeping hackers and other baddies out.	NA	NA
Neale-May & Partners	Palo Alto	650-328-5555	Information Security Employer	The independent firm specializes in public relations for high-tech companies but doesn't shy away from more traditional companies that need help sending a message.	NA	NA
NeoScale Systems, Inc	Milpitas	408-473-1300	Information Security Employer	NeoScale Systems develops and markets data storage security devices for enterprise networks.	NA	NA
Net Nanny Software International Inc.	Sunnyvale	415-348-7142	Information Security Employer	The company also makes BioPassword, a user verification application.	NA	NA
NetContinuum, Inc.	Santa Clara	408-961-5600	Information Security Employer	NetContinuum provides Web security gateways that protect against malicious attacks.	NA	NA
NETGEAR, Inc.	Santa Clara	408-907-8000	Information Security Employer	The company designs a range of wired and wireless networking equipment -- hubs, routers, switches, servers, and interfaces -- for connecting PCs in home and small business settings to each other and the Internet.	NA	NA

Company Name	City	Phone Number	Type	Description	Cost	Eligibility
NetIQ Corporation	San Jose	408-856-3000	Information Security Employer	The company provides enterprise software used to test, monitor, migrate and analyze distributed computer systems.	NA	NA
Netli, Inc.	Palo Alto	650-331-5000	Information Security Employer	Netli provides corporate network support and data and application hosting services.	NA	NA
NetLogic Microsystems, Inc.	Mountain View	650-961-6676	Information Security Employer	The company designs and sells packet processors and content-addressable memory (CAM) chips, which are used in routers and other devices to optimize speed and search capabilities over the Internet.	NA	NA
Netopia, Inc.	Palo Alto	510-420-7400	Information Security Employer	The company provides digital subscriber line (DSL) gear to enable high-speed Internet connectivity and routing equipment for cable, T1, integrated services digital network (ISDN), and traditional modem connections.	NA	NA
NetScaler, Inc.	Santa Clara	408-987-8700	Information Security Employer	The company provides specialized networking hardware for the secure and efficient distribution of applications across networks.	NA	NA
Network General Corporation	San Jose	408-571-5000	Information Security Employer	Network General provides application and network management hardware and software, including the Sniffer line of performance and security analysis products.	NA	NA
Newgen Software Technologies Limited	Palo Alto	510-794-6724	Information Security Employer	Newgen Software Technologies provides custom software development, and also offers a line of software applications for database and document management, billing, imaging, workflows, and creating new software.	NA	NA
NGK INSULATORS, LTD.	Santa Clara	408-330-6900	Information Security Employer	One of the world's largest insulator makers, NGK produces insulation and other equipment for power transmission lines, distribution lines, and substations.	NA	NA

Company Name	City	Phone Number	Type	Description	Cost	Eligibility
Nimsoft AS	Palo Alto	650-570-5401	Information Security Employer	Nimsoft provides software to help simplify management of service levels and IT infrastructure such as servers, software applications, databases, and entire networks.	NA	NA
Notify Technology Corporation	San Jose	408-777-7920	Information Security Employer	A provider of messaging applications (voice mail and call waiting, for instance) to telecommunications carriers, the company has increasingly focused efforts on developing products for the enterprise wireless market.	NA	NA
NuCORE Technology, Inc.	Sunnyvale	408-907-7100	Information Security Employer	NuCORE Technology designs image processing chips used in digital cameras, camcorders, and security cameras.	NA	NA
Objectivity, Inc.	Sunnyvale	408-992-7100	Information Security Employer	The company markets its Objectivity/DB product to government agencies.	NA	NA
Oblix, Inc.	Cupertino	408-861-6800	Information Security Employer	The company provides identity management software that is used to grant and restrict access to enterprise data and software applications.	NA	NA
OneTouch Systems, Inc.	San Jose	408-436-4600	Information Security Employer	OneTouch offers distance learning applications for corporate training, enabling companies to provide interactive multimedia training courses to employees in multiple locations at the same time.	NA	NA
ONStor, Inc.	Los Gatos	408-963-2400	Information Security Employer	The company provides file storage software, hardware, and support services.	NA	NA
Oracle Corporation	Mountain View	650-506-7000	Information Security Employer	The enterprise software giant provides a range of tools for managing business data, supporting business operations, and facilitating collaboration and application development.	NA	NA

Company Name	City	Phone Number	Type	Description	Cost	Eligibility
OuterBay Technologies, Inc.	Cupertino	408-340-1200	Information Security Employer	The company's LiveArchive software locates inactive data stored in Oracle, PeopleSoft, and other databases and transfers that data to an accessible archive database, allowing the primary database to run more efficiently.	NA	NA
Pacific Data Designs, Inc.	Sunnyvale	415-776-0660	Information Security Employer	Pacific Data Designs provides clinical study data management and statistical services including database design and quality assurance to the biotech, pharmaceutical, and medical device industries.	NA	NA
Packet Design, Inc.	Palo Alto	650-739-1850	Information Security Employer	Packet Design develops hardware and software used to manage Internet protocol (IP) networks.	NA	NA
Packeteer, Inc.	Cupertino	408-873-4400	Information Security Employer	The company develops bandwidth management systems that enable businesses and Internet service providers to find and classify network traffic, analyze network performance, control traffic, and prioritize Web site access.	NA	NA
Panalpina, Inc.	Palo Alto	650-653-6600	Information Security Employer	The North American arm of Switzerland-based Panalpina World Transport, Panalpina, Inc., offers airfreight and ocean freight forwarding, customs brokerage, and supply chain management services.	NA	NA
Panasas Inc.	Palo Alto	510-608-7790	Information Security Employer	Linux is the open-source computer operating system making its way through the IT infrastructure, and network storage is one of the beachheads for the Windows-challenging OS.	NA	NA
Panscopic Corporation	Sunnyvale	415-348-2300	Information Security Employer	Panscopic provides software that gives secure, simplified access to data in Web-based environments.	NA	NA
Perfigo, Inc.	Sunnyvale	415-431-8900	Information Security Employer	Perfigo develops software and applications that are used to manage network security and control.	NA	NA

Company Name	City	Phone Number	Type	Description	Cost	Eligibility
PerkinElmer Optoelectronics	Palo Alto	510-979-6500	Homeland Security Employer	The company makes amorphous silicon digital X-ray detectors used in medical imaging applications.	NA	NA
Pixim, Inc.	Mountain View	650-934-0550	Information Security Employer	Pixim develops imaging technology for the security camera industry.	NA	NA
PMC-Sierra, Inc.	Santa Clara	408-239-8000	Information Security Employer	PMC's high-end semiconductors drive telecom and optical networking gear at the heart of broadband networks; customers include Alcatel, Cisco Systems (10% of sales), Fujitsu, Hewlett-Packard, Lucent, and NEC.	NA	NA
Polaris Networks, Inc.	San Jose	408-281-7466	Information Security Employer	The company makes optical network transport switches (OMX) and accompanying network management software (IntelliOp) used by communications service providers in their metropolitan area networks.	NA	NA
Polivec, Inc.	Mountain View	650-230-3470	Information Security Employer	The company creates, markets, and deploys security software for computer systems.	NA	NA
Polycom, Inc.	Palo Alto	925-924-6000	Information Security Employer	Its ViewStation videoconferencing device combines a camera, microphone, computer network connections, and external audio and video devices.	NA	NA
POS.com, Inc.	San Jose	408-528-2700	Information Security Employer	The company, formerly MobiNetix Systems, offers interactive point-of-sale (POS) transaction systems and electronic signature capture devices for retail, restaurant, and e-business markets.	NA	NA
Promise Technology, Inc.	Milpitas	408-228-1400	Information Security Employer	The company makes storage controller cards and redundant array of independent disk (RAID) subsystems, interfacing through the Parallel Advanced Technology Attachment standard and the newer Serial ATA.	NA	NA
Pronto Networks, Inc.	Palo Alto	925-227-5500	Information Security Employer	The company also offers design and implementation consulting services for customers buying its Wi-Fi and hot spot products.	NA	NA

Company Name	City	Phone Number	Type	Description	Cost	Eligibility
QNX Software Systems Ltd.	Campbell	408-879-7211	Information Security Employer	QNX Software Systems markets the QNX Neutrino real-time operating system and QNX Momentics software development tool suite for designing and debugging embedded systems, while providing technical consulting services.	NA	NA
Qualys, Inc.	Mountain View	650-801-6100	Information Security Employer	The company provides a variety of network security auditing and vulnerability management services for enterprises, as well as hosted network security software.	NA	NA
Quanta Computer Inc.	Palo Alto	510-226-1001	Information Security Employer	The company also makes network servers, set-top boxes, monitors, optical storage products (CD-ROMs, DVD-ROMs, CD-RWs, rewritable DVDs), liquid-crystal display TVs, and mobile phones.	NA	NA
Quova, Inc.	Mountain View	650-528-3700	Information Security Employer	The company's geolocation technology can pinpoint the physical location of an Internet user's IP address, information that can then be used to assess levels of Internet traffic, monitor browsing activities, enhance network security, minimize the risk of online fraud, and provide regionally relevant marketing information.	NA	NA
Radiance Technologies, Inc.	Los Altos	650-625-9510	Information Security Employer	Founded in 2000, the company makes content delivery software for the transmission of large multimedia files over Internet protocol (IP) networks.	NA	NA
RadioLAN Marketing Group, Inc.	San Jose	408-365-6200	Information Security Employer	RadioLAN Marketing Group makes adapters and bridges that enable wireless communication between PCs, laptop computers, servers, printers, and other networked equipment	NA	NA
Radix Technologies Inc.	Mountain View	650-988-4700	Information Security Employer	Radix Technologies makes advanced digital signal processing (interference cancellation, multi-path mitigation, high data rate communication) equipment for telecommunication and	NA	NA

Company Name	City	Phone Number	Type	Description	Cost	Eligibility
				military applications.		
RAE Systems Inc.	Sunnyvale	408-752-0723	Homeland Security Employer	The company has progressed from being a supplier of stand-alone analytical instruments to providing networked instrumentation that can be used in many locales, from factories to spills of hazardous materials, and even to find those pesky missing weapons of mass destruction.	NA	NA
Rainfinity, Inc.	San Jose	408-382-5000	Information Security Employer	Rainfinity provides high-availability software used to optimize the performance of electronic transactions across a variety of network environments.	NA	NA
Rainmaker Systems, Inc.	Santa Clara	831-430-3800	Information Security Employer	The company generates more than 95% of sales through its proprietary Contract Renewals Plus program, which focuses not only on contract renewals, but also on new contract sales, service upgrades, and license sales through direct marketing, telesales, and hosted E-commerce channels.	NA	NA
Redback Networks Inc.	San Jose	408-750-5000	Information Security Employer	Redback Networks' equipment enables telecommunications companies and Internet service providers, mostly in Europe, North America, and Asia, to deliver broadband services to their subscribers.	NA	NA
ReDOX Technology Corporation	Palo Alto	510-769-4600	Information Security Employer	ReDOX provides software designed to prevent the unauthorized copying of CDs and DVDs.	NA	NA
Resonate, Inc.	Sunnyvale	408-548-5500	Information Security Employer	The company's software balances and manages the flow of network traffic among computer servers.	NA	NA

Company Name	City	Phone Number	Type	Description	Cost	Eligibility
Riverbed Technology, Inc.	Sunnyvale	415-247-8800	Information Security Employer	Riverbed Technology develops software that improves the performance of applications that are shared over networks.	NA	NA
Riverstone Networks, Inc.	Santa Clara	408-878-6500	Information Security Employer	Products from the company help streams of data move more efficiently across citywide networks.	NA	NA
Road, Inc.	Palo Alto	510-668-1638	Homeland Security Employer	Road's mobile resource management system enables vehicle location, wireless voice and text communications, and remote transaction processing with signature capture using a PDA.	NA	NA
Roamware, Inc.	San Jose	408-861-9300	Information Security Employer	Roamware would concur with the B-52s in that sentiment.	NA	NA
Saama Technologies, Inc.	Campbell	408-371-1900	Information Security Employer	The company's services include consulting, application development, systems integration, network design, testing, software localization, training, and consulting.	NA	NA
SAN Valley Systems	San Jose	408-284-6200	Information Security Employer	The company's gateways are used to extend access to Fibre Channel-based storage area networks (SANs) over IP-based WANs and metro-area networks.	NA	NA
Sana Security, Inc.	Palo Alto	650-292-7100	Information Security Employer	The company develops and markets application security software that detects and prevents attacks, for both standard and custom server applications.	NA	NA
SanDisk Corporation	Sunnyvale	408-542-0500	Information Security Employer	The company is a top producer of storage products based on flash memory, which retains data even when power is interrupted.	NA	NA
Santur Corporation	Palo Alto	510-656-7130	Information Security Employer	Santur makes widely tunable laser components for optical communications networks.	NA	NA
Savant Technology Group, Inc.	Palo Alto	925-461-4510	Information Security Employer	Savant Technology Group provides management consulting and technology services to a variety of large and mid-sized companies.	NA	NA

Company Name	City	Phone Number	Type	Description	Cost	Eligibility
Savi Technology, Inc.	Sunnyvale	408-743-8000	Information Security Employer	Savi Technology operates the largest global wireless cargo tracking network in the world, covering some 45 countries and 800 locations.	NA	NA
Scintera Networks Inc.	San Jose	408-557-2810	Information Security Employer	Scintera Networks is a manufacturer of optical network transmission components.	NA	NA
SCM Microsystems, Inc.	Palo Alto	510-360-2300	Information Security Employer	The company's smart card-based security hardware and software lets financial institutions and other corporations control access to computers and conduct secure e-commerce transactions.	NA	NA
SecuGen Corporation	Santa Clara	408-727-7787	Information Security Employer	SecuGen provides biometric software and hardware used for security functions such as restricting and granting access to computer networks and facilities.	NA	NA
Secure Computing Corporation	San Jose	408-979-6100	Information Security Employer	The company provides a variety of network security products, including firewalls, user identification and authorization software, and Web filtering applications.	NA	NA
Secure Data in Motion, Inc	Palo Alto	650-572-6100	Information Security Employer	The company (which does business as Sigaba) creates software to enable the secure exchange of e-mail, instant messages and documents.	NA	NA
Securify, Inc.	Cupertino	408-343-4300	Information Security Employer	The company (founded in 1998 by former Netscape chief scientist Taher Elgamal) offers software that is used to manage and automate network security functions.	NA	NA
SeeCommerce	Palo Alto	650-213-1800	Information Security Employer	The company's SeeChain software provides real-time access to information across the supply chain, from inventory and production to distribution and order fulfillment.	NA	NA
Semotus Solutions, Inc.	Los Gatos	408-358-7100	Information Security Employer	The company develops software that delivers data to mobile phones, personal digital assistants, and other wireless devices.	NA	NA

Company Name	City	Phone Number	Type	Description	Cost	Eligibility
SenSage, Inc.	Sunnyvale	415-808-5900	Information Security Employer	The company provides data management software that customers use to analyze network activity and manage enterprise assets.	NA	NA
Sequoia Voting Systems Inc.	Palo Alto	510-875-1200	Information Security Employer	The company's touch screen systems have been used in more than 35 states.	NA	NA
ServGate Technologies, Inc.	Milpitas	408-635-8400	Information Security Employer	ServGate Technologies provides security software and hardware used to protect computer networks and systems.	NA	NA
Seven Networks, Inc.	Mountain View	650-381-2500	Information Security Employer	The company provides wireless software that telecommunications carriers and operators use to provide businesses with mobile access to applications and data.	NA	NA
Sharper Image Corporation	Sunnyvale	415-445-6000	Information Security Employer	If James Bond had problem nose hair, he'd probably ask Q for a Sharper Image Turbo Groomer 5.	NA	NA
Sheer Networks Inc.	San Jose	408-487-0402	Information Security Employer	The company is a provider of service management software that centralizes, simplifies, and enhances the management of broadband network operations.	NA	NA
Sierra Atlantic, Inc.	Palo Alto	510-742-4100	Information Security Employer	The company provides custom software development and other information technology (IT) services from its development center in Hyderabad, India, and from offices in Indonesia, Malaysia, Singapore, the UK, and the US.	NA	NA
Sierra Monitor Corporation	Milpitas	408-262-6611	Homeland Security Employer	Sierra Monitor manufactures, distributes, and services gas and flame detection devices for customers worldwide	NA	NA
Silicon Image, Inc.	Sunnyvale	408-616-4000	Information Security Employer	Silicon Image designs and sells a variety of integrated circuits, including digital video controllers, receivers, transmitters, and processors that are built into personal computers, set-top boxes, and DVD players.	NA	NA

Company Name	City	Phone Number	Type	Description	Cost	Eligibility
Silicon Optix Inc.	San Jose	408-487-9290	Information Security Employer	The company makes digital image processing chips that correct distortion in video displays by adjusting the scale and warp of projected images.	NA	NA
Sino-American Electronic Co., Ltd.	Palo Alto	510-979-1523	Information Security Employer	The company was founded in 1968 to make transformers.	NA	NA
Snap Appliance, Inc.	San Jose	408-879-8700	Information Security Employer	The company makes network-attached storage (NAS) servers.	NA	NA
Socket Communications, Inc.	Palo Alto	510-744-2700	Information Security Employer	The company makes PC and CompactFlash cards for handheld and notebook computers.	NA	NA
Solectron Corporation	Milpitas	408-957-8500	Information Security Employer	The company is one of the world's largest providers of contract electronics manufacturing services (along with archrivals Flextronics and Sanmina-SCI).	NA	NA
SOMA Networks, Inc.	Sunnyvale	415-882-6500	Information Security Employer	The company is a manufacturer of wireless networking equipment used by local telephone companies and Internet service providers.	NA	NA
SonicWALL, Inc.	Sunnyvale	408-745-9600	Information Security Employer	The company makes the SonicWALL family of broadband network security devices, which protect communications between headquarters and branch offices, secure broadband Internet access, and filter Web content (blocking a minor's access to adult Web sites, for example).	NA	NA
Sorrento Networks Corporation	Palo Alto	510-777-7000	Information Security Employer	The company makes fiber optic telecommunications hardware that service providers use to build broadband data networks.	NA	NA
Space Systems/Loral	Palo Alto	650-852-4000	Homeland Security Employer	The company designs and manufactures weather and communications satellites, subsystems, and payloads.	NA	NA
Spansion Inc.	Sunnyvale	408-962-2500	Information Security Employer	Formerly called FASL, the joint venture between Advanced Micro Devices and Fujitsu makes and markets flash memory devices.	NA	NA

Company Name	City	Phone Number	Type	Description	Cost	Eligibility
Speedera Networks, Inc.	Santa Clara	408-970-1500	Information Security Employer	The provider of distributed content and application delivery services helps companies offer bandwidth-intensive content, graphics, and streaming media over the Web.	NA	NA
Spoke Software, Inc.	Palo Alto	650-424-8525	Information Security Employer	Spoke Software develops social networking software that connects business professionals with one another.	NA	NA
Stalworth, Inc.	Palo Alto	650-378-1448	Information Security Employer	The company's DQ*Plus application addresses data quality needs, giving users control of the various rules governing their databases.	NA	NA
StrataLight Communications, Inc.	Campbell	408-961-6250	Information Security Employer	StrataLight Communications manufactures optical transport subsystems used by telecom carriers to build metro, regional, and long-haul networks.	NA	NA
Stratify, Inc.	Mountain View	650-988-2000	Information Security Employer	The company provides electronic legal discovery technologies and services designed to help attorneys understand and process the huge volumes of data involved in the legal discovery process.	NA	NA
StubHub, Inc.	Sunnyvale	415-222-8400	Information Security Employer	The company (formerly LiquidSeats) offers a Web site where season ticket holders and others can buy and sell tickets to concerts, sports events, and theater shows.	NA	NA
Summit Microelectronics, Inc.	San Jose	408-436-9890	Information Security Employer	Summit Microelectronics makes semiconductor chips for networking equipment that are designed to manage power consumption and detect component failures.	NA	NA
Sun Microsystems, Inc.	Santa Clara	650-960-1300	Information Security Employer	Sun Microsystems is a leading maker of UNIX-based servers used to power corporate computer networks and Web sites.	NA	NA
Sunrise Telecom Incorporated	San Jose	408-363-8000	Information Security Employer	Sunrise Telecom makes broadband network access equipment testing products for communications service providers.	NA	NA

Company Name	City	Phone Number	Type	Description	Cost	Eligibility
Sybase, Inc.	Palo Alto	925-236-5000	Information Security Employer	Long known for its relational database products, the company offers software that stores and distributes content throughout enterprises.	NA	NA
Sygate Technologies, Inc.	Palo Alto	510-742-2600	Information Security Employer	Sygate Technologies provides enterprise software used to protect networks, manage security policies, and enforce business policies.	NA	NA
Symantec Corporation	Cupertino	408-517-8000	Information Security Employer	The company provides a variety of content and network security software for both consumers and businesses, used for functions such as virus protection, intrusion detection, and remote management.	NA	NA
Symmetricom, Inc.	San Jose	408-433-0910	Information Security Employer	The company manufactures synchronization and timing equipment used to control the flow of voice, video, and data traffic in telephone, wireless, and broadband networks.	NA	NA
Synchron Networks, Inc.	Santa Clara	831-440-1499	Information Security Employer	Synchron Networks makes the Everserve line of infrastructure software products to help companies with secure digital asset delivery.	NA	NA
Tablus, Inc.	Palo Alto	650-572-1515	Information Security Employer	Tablus provides information security systems for protecting confidential information against unauthorized or unintended disclosure.	NA	NA
TAG Aviation USA, Inc.	Sunnyvale	650-342-1717	Homeland Security Employer	The company offers aircraft acquisition and sales; chartering; and management services.	NA	NA
Taos Mountain, Inc.	Santa Clara	408-588-1200	Information Security Employer	Taos provides a variety of information technology services, including the evaluation of technical staff and network administration.	NA	NA

Company Name	City	Phone Number	Type	Description	Cost	Eligibility
Tarantella, Inc.	Santa Clara	831-427-7222	Information Security Employer	Formerly The Santa Cruz Operation (SCO), the company changed its name when it sold its OpenServer software and professional services divisions to Caldera International (which has since changed its name to The SCO Group).	NA	NA
Tasman Networks, Inc.	San Jose	408-216-4700	Information Security Employer	Tasman Networks makes routers for services aggregation and scalable network access.	NA	NA
Teja Technologies, Inc.	San Jose	408-288-2560	Information Security Employer	Founded in 1998, Teja Technologies provides application development tools for network equipment developers.	NA	NA
Teknowledge Corporation	Palo Alto	650-424-0500	Information Security Employer	Spawned in the early 1980s at the Stanford University computer science labs, the company's software improves business and transaction processes for government agencies and financial services companies.	NA	NA
Tele Atlas NV	Los Altos	650-328-3825	Information Security Employer	Tele Atlas' portfolio of digital maps covers more than 340 million inhabitants in 18 European countries and provides complete coverage of North America.	NA	NA
Terabit Corporation	Los Altos	650-321-3709	Information Security Employer	Terabit, which is conducting research for the US Department of Defense, is developing commercial products it calls "metarouters" that combine off-the-shelf network data routers into larger systems using its proprietary network switches and software.	NA	NA
Teradiant Networks, Inc.	San Jose	408-519-1700	Information Security Employer	Teradiant Networks designs network traffic management semiconductors.	NA	NA
Teros, Inc.	Santa Clara	408-850-0800	Information Security Employer	The company (formerly Stratum8 Networks) provides security software that protects Web servers, databases, and enterprise applications.	NA	NA

Company Name	City	Phone Number	Type	Description	Cost	Eligibility
Thales Navigation, Inc.	Santa Clara	408-615-5100	Information Security Employer	Thales Navigation, produces a wide variety of GPS units and accessories for consumer and professional/business applications.	NA	NA
The Children's Internet, Inc.	Palo Alto	925-737-0144	Information Security Employer	The company makes software to restrict access to Web-based content considered inappropriate for children and to regulate e-mail which is accessed through their Internet service.	NA	NA
TIBCO Software Inc.	Palo Alto	650-846-1000	Information Security Employer	The company's business integration software enables customers to integrate, manage, and monitor enterprise applications and information delivery.	NA	NA
TimesTen, Inc.	Mountain View	650-526-5100	Information Security Employer	The company's infrastructure software makes it possible for event-processing applications to manage and distribute data across corporate networks while maintaining the integrity of ongoing transactions.	NA	NA
Tiny Software, Inc.	Santa Clara	408-919-7360	Information Security Employer	Tiny Software provides firewall software for both home and enterprise users, addressing functions such as intrusion detection and network traffic management.	NA	NA
Topio, Inc.	Santa Clara	408-350-9800	Information Security Employer	Topio provides disaster recovery and data replication software for use across storage area networks and direct attached storage devices.	NA	NA
Totality Corporation	Sunnyvale	415-402-3000	Information Security Employer	The company uses computer hardware and business software to provide outsourced services such as remote managed systems monitoring, application management, problem management, asset management, server and network infrastructure design, and Enterprise site design.	NA	NA

Company Name	City	Phone Number	Type	Description	Cost	Eligibility
T-RAM, Inc.	San Jose	408-597-3000	Information Security Employer	The company touts its designs as combining the speed of static random-access memory (SRAM) devices with the memory density of dynamic RAM (DRAM) chips.	NA	NA
Trapeze Networks, Inc.	Palo Alto	925-474-2200	Information Security Employer	Trapeze builds switching systems used in wireless computer networks.	NA	NA
Trend Micro Incorporated	Cupertino	408-257-1500	Information Security Employer	The company provides network antivirus and Internet security software used to protect file and e-mail servers, Internet gateways, and PCs.	NA	NA
TriNet Communications, Inc.	Palo Alto	925-294-1720	Information Security Employer	TriNet Communications is a distributor of telecommunications components from such suppliers as 3M, Lucent Technologies, and Harris Corporation.	NA	NA
Tripath Technology Inc.	San Jose	408-750-3000	Information Security Employer	The company uses proprietary digital technology to create smaller, more powerful, and more energy-efficient amplifier integrated circuits (ICs).	NA	NA
Tumbleweed Communications Corp.	Mountain View	650-216-2000	Information Security Employer	The company's software lets businesses filter, monitor, and archive e-mail and messages sent and received by employees, partners, distributors, and suppliers.	NA	NA
Unigen Corporation	Palo Alto	510-668-2088	Information Security Employer	The company produces memory modules -- memory chips connected to small, plug-in boards -- with flash memories, static random-access memories (SRAMs), dynamic RAMs (DRAMs), and Rambus DRAMs.	NA	NA
UTStarcom, Inc.	Palo Alto	510-864-8800	Information Security Employer	The company, which sells mostly to telecommunications providers in China, makes infrastructure systems for Internet protocol (IP), digital subscriber line (DSL), and wireless networks.	NA	NA

Company Name	City	Phone Number	Type	Description	Cost	Eligibility
Valyd, Inc.	San Jose	408-436-1000	Information Security Employer	Valyd develops and distributes enterprise security software used by corporate and government clients for document security, electronic signatures, and database encryption.	NA	NA
Venture Corporation Limited	Palo Alto	510-744-3720	Information Security Employer	The company's electronics manufacturing services (EMS) division makes products such as printed circuit boards, fiber-optic switches and transceivers, and box-build (complete system) assembly.	NA	NA
Veo	San Jose	408-324-2100	Information Security Employer	Founded in 1993, Veo manufactures digital imaging equipment including web, digital still, networking, and PDA cameras.	NA	NA
Veraz Networks, Inc.	San Jose	408-750-9400	Information Security Employer	The company offers the ControlSwitch software-based switching platform (or "softswitch"), which enables telecom carriers to offer Voice over Internet Protocol services without buying expensive network hardware.	NA	NA
VeriSign, Inc.	Mountain View	650-961-7500	Information Security Employer	The company provides a variety of digital commerce and communication products and services.	NA	NA
VeriTest, Inc.	Sunnyvale	415-546-6885	Information Security Employer	The company provides a variety of testing services, including quality assurance, benchmarking, performance testing, and security testing.	NA	NA
Vernier Networks, Inc.	Mountain View	650-526-2600	Information Security Employer	The company makes network hardware and software that prevents unauthorized access to wired and wireless networks.	NA	NA

Company Name	City	Phone Number	Type	Description	Cost	Eligibility
Versant Corporation	Palo Alto	510-789-1500	Information Security Employer	The company's object-oriented (as opposed to relational) database management systems are used primarily by telecommunications and financial services companies for such purposes as real-time data analysis, fraud detection, service activation and assurance, and customer billing.	NA	NA
VIA Technologies, Inc.	Palo Alto	510-683-3300	Information Security Employer	VIA Technologies has taken on Intel for market leadership in PC chipsets -- clusters of components that connect a computer's microprocessor to its other parts.	NA	NA
Viador Inc.	Mountain View	650-551-6000	Information Security Employer	The company provides software that businesses use to create enterprise portals to access, manage, and distribute information from intranets and the Internet in various languages.	NA	NA
Virage Logic Corporation	Palo Alto	510-360-8000	Information Security Employer	The company's compiler software allows chip designers to embed Virage Logic's memory designs into complex system-on-a-chip (SOC) devices used in electronic gear such as network routers and switches, mobile phones, digital cameras, and PCs.	NA	NA
Visionael Corporation	Palo Alto	650-470-8920	Information Security Employer	Visionael provides network resource management software for operation support systems, enabling service providers and large enterprises to deliver high-demand services to subscribers and users at different service levels.	NA	NA
Visto Corporation	Mountain View	650-486-6000	Information Security Employer	The company provides connectivity software for secure access to corporate messaging applications, encompassing both browser-based and mobile devices.	NA	NA

Company Name	City	Phone Number	Type	Description	Cost	Eligibility
VMware, Inc.	Palo Alto	650-475-5000	Information Security Employer	VMware develops software that creates and manages virtual machines -- computer functions spread across multiple systems that act as one.	NA	NA
Vocent Solutions, Inc.	Mountain View	650-316-3000	Information Security Employer	Vocent Solutions offers voice authentication software that allows call centers and help desks to verify the identity of callers using speech recognition technology.	NA	NA
Vocera Communications, Inc.	Cupertino	408-790-4100	Information Security Employer	Its voice communication system works via wireless networks and includes a communications badge and server software that runs on a Windows 2000 server.	NA	NA
Voltage Security, Inc.	Palo Alto	650-543-1280	Information Security Employer	The company specializes in secure e-mail and business communications tools, using encryption technology originally developed by computer science students at Stanford University, who went on to found Voltage Security, along with professors from Stanford and UC Davis.	NA	NA
Volterra Semiconductor Corporation	Palo Alto	510-743-1200	Information Security Employer	The fabless company designs and markets low-voltage power supply chips, including switching regulators for communications and networking applications.	NA	NA
Wedgetail Communications Pty Ltd.	Sunnyvale	415-929-2288	Information Security Employer	Wedgetail Communications provides enterprise security products and related integration services that are used for tasks such as encryption, identity management, and secure messaging.	NA	NA
Wellex Corporation	Palo Alto	510-743-1818	Information Security Employer	As a contract electronics manufacturer, Wellex makes printed circuit boards (PCBs) for original equipment manufacturers in the networking, telecommunications, computer, storage, and medical markets.	NA	NA

Company Name	City	Phone Number	Type	Description	Cost	Eligibility
Wheels of Zeus, Inc.	Los Gatos	408-358-6030	Information Security Employer	The company plans to provide location products (potentially used to find people, pets, and valuables) that utilizes existing radio frequency networks and global positioning systems (GPS) technology.	NA	NA
WideRay Corporation	Sunnyvale	415-263-2800	Information Security Employer	WideRay provides wireless network hardware and software that enables customers to beam data to people using palmOne handheld devices, Symbian-based smart phones, and wireless devices running on Microsoft's Pocket PC operating system, via the company's Jack Service Point and iJack products.	NA	NA
Wipro Technologies	Mountain View	650-316-3555	Information Security Employer	Wipro Technologies, the global technology and consulting services division of Indian conglomerate Wipro Limited, is one of the world's leading providers of systems integration and outsourcing services.	NA	NA
WJ Communications, Inc.	San Jose	408-577-6200	Information Security Employer	WJ Communications makes semiconductors, including radio-frequency (RF) amplifiers, used in cellular base stations and other wireless communications equipment.	NA	NA
Workshare Technology, Inc.	Sunnyvale	415-975-3855	Information Security Employer	The company develops document integrity management software that helps users manage the exchange and verification of electronic information and documents.	NA	NA
Wyse Technology Inc.	San Jose	408-473-1200	Information Security Employer	Wyse Technology is a leading supplier of thin-client computer network terminals and general-purpose display terminals.	NA	NA

Company Name	City	Phone Number	Type	Description	Cost	Eligibility
XACCT Technologies, Inc.	Santa Clara	408-654-9900	Information Security Employer	The company's Network to Business (N2B) Platform collects detailed network usage data, which corporate network operators and telecom and Internet service providers use for billing, traffic planning, usage audits, and user profiling.	NA	NA
Xilinx, Inc.	San Jose	408-559-7778	Information Security Employer	The company is a top supplier of field-programmable gate arrays (FPGAs) and complex programmable logic devices (CPLDs).	NA	NA
Xora, Inc.	Mountain View	650-314-6460	Information Security Employer	The company provides software that gives mobile workers wireless and voice access to enterprise databases and applications via cell phones and personal digital assistants.	NA	NA
Xyratex Group Limited	San Jose	408-894-0800	Information Security Employer	Subsidiary Xyratex Technology designs and manufactures storage subsystems and controllers, as well as PCI cards that analyze and manage network data.	NA	NA
Xythos Software Inc.	Sunnyvale	415-248-3800	Information Security Employer	Founded in 1999, the company develops document and file management software that enables organizations to securely manage and share information throughout the enterprise.	NA	NA
Yahoo! Inc.	Sunnyvale	408-349-3300	Information Security Employer	Yahoo! is the leading online information portal, drawing more than 345 million people to its network of Web sites with a mix of news, entertainment, and online shopping, as well as its search engine and Internet directory.	NA	NA
Yipes Enterprise Services, Inc.	Sunnyvale	415-901-2000	Information Security Employer	Formerly Yipes Communications, it provides managed, end-to-end Gigabit Ethernet services to businesses.	NA	NA
Yosemite Technologies, Inc.	San Jose	408-236-7556	Information Security Employer	The company's principal software product, TapeWare, backs up tape drive storage in Windows, Linux, Novell NetWare, and UNIX	NA	NA

Company Name	City	Phone Number	Type	Description	Cost	Eligibility
				environments.		
Zelos Group, Inc.	Sunnyvale	415-393-5700	Information Security Employer	The firm helps technology vendors and service providers predict the effects of new technology on consumers and enterprises then capitalize on the trends created by technology.	NA	NA
ZiLOG, Inc.	San Jose	408-558-8500	Information Security Employer	The semiconductor company makes a wide variety of integrated circuits, including embedded processors and microcontrollers.	NA	NA
Zone Labs, Inc.	Sunnyvale	415-633-4500	Information Security Employer	The company's ZoneAlarm line of firewall products offers protection from computer viruses and other malicious programs, which perform unauthorized functions on PCs (such as stealing passwords and reformatting hard drives).	NA	NA

APPENDIX D: INVENTORY OF EDUCATION AND TRAINING PROVIDERS – COMPONENT D

Table 22 Inventory of Education and Training Providers – Education and Training Providers

Company Name	City	Phone Number	Type	Description	Cost	Eligibility
(ISC)[2]	San Jose	1-866-462-4777	Information Security Training Provider	Offers training for information security certificates.	$1000-$2500	NA
Bryman College	San Jose	1-888-741-4270	Homeland Security Training Provider	Offers a Homeland Security degree.		
CED Solutions	San Jose	800-611-1840	Information Security Training Provider	Offers training for a variety of network security certifications.	$195 - $19,995	None
David Walker & Associates	San Jose	408-947-1500	Homeland Security Training Provider	Provides training for security guards.	$90	NA
De Anza Community College	Cupertino	408-864-5678	Information Security Training Provider	Offers degrees or certificates in Computer Systems Security, Computer Crime Inventory, Home/Small Business Computer Security, Enterprise Security Professional, Network Description and Administration, and Network Programming.	$17 per unit	Application process
Foothill College	Los Altos Hills	650-949-7777	Information Security Training Provider	Offers degrees or certificates in Computer Science, Computer Software Development, Help Desk/Technical Support, Internet Technology, Biotechnology, and Bioinformatics.	$17 per unit	Application process
GlobalNet Training	San Jose	1-866-392-3922	Information Security Training Provider	Offers training for Cisco Network Security certificates.	$150 and up	NA
Heald College	San Jose	1-800-88-Heald	Information Security Training Provider	Offers a program in Network Security		

Hello Computers	San Jose	408-435-0801	Information Security Training Provider	Offers training for a variety of network security certifications.		None
Mission College	Santa Clara	408-988-2200	Information Security and Homeleand Security Training Provider	Offers degrees or certificates in Computer Network Technology, Computer Information Systems, Computer Applications, and Military Science.	$18 per unit	Application process
Netwind Learning Center	San Jose	1-800-617-5586	Information Security Training Provider	Offers training for a variety of network security certifications.	$250 - $3000	NA
New Horizons	San Jose	787-999-1000	Information Security Training Provider	Offers training for a variety of network security certifications.		None
Parsec Group	San Jose	408-437-7511	Information Security Training Provider	Offers training for a variety of network security certifications.	$2,675 for a 5 day course	None
Productivity Point	San Jose	800-774-2727	Information Security Training Provider	Offers training for a variety of network security certifications.	$1,275 for a 3 day course	None
QuickStart	San Jose	408-441-2720	Information Security Training Provider	Offers training for a variety of network security certifications.	$495 and up	None
San Jose Police Academy	San Jose	650-270-6458	Homeland Security Training Provider	Provides POST (Peace Officer Standards & Training) certified basic law enforcement training.	$4,000	Pass physical and written test
SANS Institute	San Jose	301-654-7267	Information Security Training Provider	Offers training for GIAC Certification		None
TechSkills Technology Training	San Jose	408-983-031	Information Security Training Provider	Offers training in Microsoft, Cisco, Oracle, Web Design, IT Security, Wireless Networking and other leading technologies.	$6,495 for a 9 month course	None
West Valley College	Saratoga	408-741-2000	Information Security Training Provider	Offers degrees or certificates in Local Area Network Administration and Computer Science.	$26 per unit	Application process

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