
# High Tech:
## *Sonoma County at a Crossroads*

### Challenges and Action Opportunities

*A report developed, researched and written by*
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# I. OVERVIEW

Over the last three months, three of Sonoma County's major high-tech firms have been bought-out by larger non-local companies and the region's largest private employer, Hewlett Packard, has announced plans to alter its Sonoma County operations. As a consequence of these recent developments and a reported dissatisfaction with the local high-tech business climate, Sonoma County today stands at a crossroads: it must take significant steps if it is to become a high-tech region and a home for the high-wage, low-impact jobs-of-the-future.

For years, Sonoma County, California has been world-renowned for its scenic beauty and its high-quality foods and wines. However over the last decade, Sonoma County has also begun to become a hub for the emerging "high-technology" firms that are changing the way the world lives and works and thereby the economic opportunities for the region.

In 1993, the Sonoma County Economic Development Board (EDB) performed a survey of these local high-tech firms and issued a report, *High Tech: A New Harvest in Sonoma County*, on its findings and recommendations. This report, well-received at the time, is now five years old, an eternity in a sector where new firms and technologies emerge almost daily.

This 1999 report is a much-needed update. The EDB surveyed 210 of the County's high-tech firms and achieved a 57% response rate (120 responses), thereby garnering a factual understanding of how local high-tech firms believe the County is doing in comparison with 1993.

This 1999 report indicates that while Sonoma County offers a favorable locale for burgeoning high-technology firms and their high-wage, low-impact jobs, it now stands at an important crossroads: the area still promises the high quality of life and relatively low-cost real estate that it did in 1993, but now has significant obstacles such as heavy traffic on area roads and an insufficient local labor pool that need to be addressed. The pace at which the technology-based sector is moving, and the level of regional competition for these "industries-of–the-future" combine to make these obstacles issues that need to be addressed seriously and immediately. In short, while Sonoma County remains well positioned as a high-tech region of the future, it must take significant and immediate action if it is to realize its potential.

# II. KEY RECOMMENDATIONS

Vitality as a high-tech region is well within Sonoma County's reach. The following steps will help position the County to attain this goal:

INDUSTRY SUPPORT

- **Create a vibrant umbrella organization serves local high tech firms and strengthens the technology network in the area through initiatives on Education, Workforce Development, Regulatory Assistance, Capital Access, Public Awareness/ Understanding and more. A proposed structure is included on page 33.**

- **Charge the Economic Development Board to utilize existing staff to help support high tech as the Agriculture Commissioner, Farm Advisor and Tourism Program help support for Sonoma County's two other primary economic clusters, Agriculture and Tourism.**

- **Reach out to local high-tech firms. All sectors of the local government should make a special effort to include the high-tech leaders in the planning, coordination and implementation of programs that could promote the region's vitality.**

- **Support current high-tech trade groups including SofTech, North Bay Multimedia Association, and Manufacturers' Group; and explore the creation a local chapter of the American Electronics Association.**

WORKFORCE DEVELOPMENT

- **Vigorously expand links between education and the Sonoma County high-tech community in an effort to combat the shortcomings of the local labor pool. Particular efforts should be directed towards supporting a Sonoma State University graduate-level Engineering Sciences program.**

- **Coordinate high- tech job creation and placement efforts with the new "One Stop" Center program and the Sonoma County Job Link website.**

PUBLIC AWARENESS/UNDERSTANDING

- **Publicize the area as a high-technology-friendly region.**

- **Educate local residents about science and high-technology.**

- **Consolidate high-tech into one cluster for economic analysis purposes.**

- **Publish an annual Sonoma County High-Tech Report**

Each of these recommendations will be discussed at further length later in the report.

# III. BACKGROUND

As the United States moves into the 21st Century and the "information economy" begins to take hold, a larger portion of the economic base is shifting away from the traditional manufacturing and agricultural sectors and towards the high-tech industry. According to a 1998 report by the American Electronics Association (AEA):

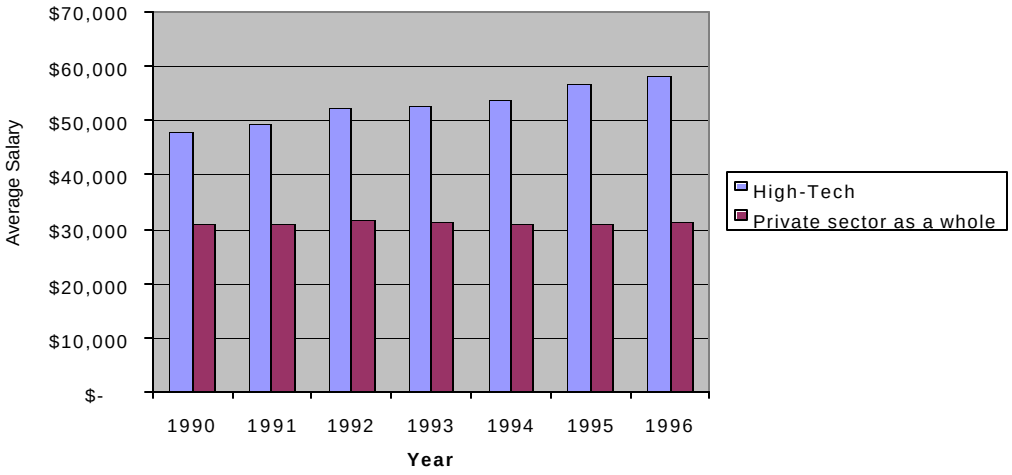
- The U.S. high-tech industry exported $171 billion worth of goods last year, an increase of almost 50% from 1990.
- The high-tech sector has added a total of 617,000 positions between 1994 and 1997, bringing the total number of high-tech jobs to 4.5 million.

Accompanying such a growth in the high-tech sector has been a significant increase in the wages of high-tech employees that are fueling this growth. The AEA reports that:

- The average high tech employee earns 73% more than another private sector worker, with an average annual salary of nearly $50,000.
- Adjusted for inflation, wages in high tech have increased three times faster than in the overall private sector in the 1990's.

The graph below illustrates that in California the average real wage growth for high-tech workers has been even more dramatic. The difference between the average wages in the high-tech industry and in the overall private sector has increased every year in the 1990's, peaking at 86% in 1996, the last year studied:

**California High-Tech Annual Wages vs Average Private Sector Wages 1990-1996 (adjusted for inflation in 1996 dollars)**




Source: AEA, 1998

With the growth, speed and wealth of high-tech industry, regional competition for the companies of the future is fierce and relocation frequent. Areas from Alemeda, California to Charlotte, North Carolina to Indianapolis, Indiana all seek to have high-tech companies locate in their area. At the same time mergers and acquisitions within the industry make location decisions almost perpetual.

**SONOMA COUNTY**

Sonoma County is no exception to this high-technology trend. In 1995, the most recent year studied, the Gross Regional Product (Output) for high tech in Sonoma County fell squarely in

between the two other largest sectors, Agriculture and Tourism, with a growth rate far greater. According to the American Electronics Association:

- **There are more than 200 high-tech establishments in Sonoma County, double the amount that existed in 1990.**
- **Nearly 10,000 people work for these high-tech firms in Sonoma County, about 2,000 (30%) more than in 1993.**
- **The total payroll for all of Sonoma County's high-tech firms is $452 million.**
- **Sonoma County's average real annual high-tech wage growth has been 20% since 1990.**
- **The average annual salary for a Sonoma County high-tech employee ($50,537) is nearly double the average wage for the local private sector as a whole ($26,054).**

As trends, these figures will most likely increase as economies and lifestyles become more heavily reliant on the goods and services these high-tech companies offer.

## THE 1993 REPORT

In 1993 the Sonoma County Economic Development Board (EDB) surveyed local high-tech firms and produced a report on its findings and recommendations. Specifically, the EDB found that the high-tech sector offers a strong potential for Sonoma County due to its:

- Compatibility with Sonoma County's high quality of life
- High wages
- Low pollution level
- Strong export potential
- Small-scale operations

The 1993 survey indicated that Sonoma County's favorable real estate costs and high quality of life uniquely situated it to meet the needs of high-tech start-ups and Bay Area companies seeking to relocate. In 1993, the majority of responding firms believed that Sonoma County had good potential to become a high-tech center.

The 1993 report also developed a series of recommendations for Sonoma County:

1. Explore the creation of a Sonoma County (or North Bay) Science and Advanced Technology Council to strengthen the high-tech network in the North Bay.

2. Explore development of a Software, Science and Advanced Technology Center as a means to link Sonoma County resources with those at Berkeley, San Jose and elsewhere.

3. Explore performing a similar study of the Marin high-tech industry as a means to develop new links between Sonoma and Marin County companies.

4. Expand links between education and high tech. A "High-Tech Summer" internship would offer a particular opportunity.

5. Expand the high-tech industry's participation in upcoming EDB and other agency projects regarding small business help, procurement, home-based businesses, small business financing, workforce improvement, regulatory streamlining and more.

## EFFORTS SINCE 1993

Since the 1993 report, the Sonoma County Economic Development Board initiated the launch of SofTech, a software industry trade association with almost 300 members and a mission to foster communication and cooperation among the high-tech firms of Marin and Sonoma Counties. Since its establishment in 1994, SofTech has developed a series of networking opportunities, a newsletter, and an online list of jobs and companies in need of venture capital, all of which serve the North Bay's software development community. SofTech has also become a legislative voice in Sacramento, lobbying on behalf of a bill that would make it easier for workers to telecommute.

Another group founded since the 1993 report is the North Bay Angels (NBA). NBA fulfills a vital need of the local high-tech community – start-up capital – by attracting and coordinating investment in Sonoma County's smaller, but growing companies.

In 1997, the Economic Vitality Project identified High Tech as one of the key sectors driving the county's economy. In response, the EVP convened a high-tech cluster working group that has helped develop the emerging Sonoma State University Engineering Sciences program.

The other major effect of the 1993 report was a broader appreciation throughout Sonoma County of the high-tech sector's existence as well as its potential economic and social impacts. In an area where understanding of the high-tech sector was relatively low, this impact of the 1993 report should not be underestimated.

## THE 1999 REPORT

The 1999 report is the Economic Development Board's follow-up to the 1993 survey. It charts how far Sonoma County has come and how far it still needs to go. For this new report, the EDB mailed a survey to 210 of Sonoma County's high-tech firms, 40% more than 1993, and tabulated 120 responses, 60% more than in 1993. Using these figures, the EDB then compared them to the 1993 findings and developed a series of finding and recommendations.

# IV. KEY FINDINGS

## Sonoma County High Tech Industry

1. **Sonoma County is still a great place to live, work, and operate a high-tech business.**
   By far, Sonoma County's greatest asset is its quality of life; 91% of the respondents recognize Sonoma County as a great place to live and work, up from 87% in 1993.

2. **Sonoma County has strong potential as a high-tech region.**
   Seventy-eight percent of the responding firms feel that Sonoma County has a good potential for future high-tech growth, up from 61% in 1993.

3. **High-tech firms want to remain and grow in Sonoma County.**
   Sixty percent of the firms report that they would expand their operations within the County, up from 52% in 1993.

4. **Today, high-tech firms show a greater range of business activities than in 1993.**
   Now high technology encompasses much more than simply computers and software. Today, Sonoma County's high-tech community includes significant numbers of companies that specialize in computer hardware & electronics, telecommunications, consulting, equipment & instrumentation, multimedia, and biotechnology. Since 1993, the trend shows a move away from software development towards consulting and telecommunications.

5. **High tech is still a very young industry in Sonoma County**.
   Sixty-one percent of the responding firms began operations in the last eight years. And of these firms, 48% have started in the last four.

6. **High tech is a "home-grown" industry**.
   66% of the responding firms were founded in Sonoma County.

7. **There are more high-tech start-ups now than in 1993.**
   In 1998, 16 firms (13% of respondents) began operations since 1996; whereas only 6 firms (6%) had begun in the two years before the 1993 survey.

8. **Fewer high-tech companies are relocating to Sonoma County now than in 1993.**
   In 1998, only 20% of the responding firms had relocated to Sonoma County whereas 41% had relocated here in 1993.

## Obstacles

1. **The high-tech labor pool in Sonoma County is inadequate and getting worse.**

A majority of the firms rate the labor pool in Sonoma County as inadequate: 81% of the firms experience some degree of difficulty in finding skilled employees. This is a 21% increase from 1993.

2. **Local high-tech firms say they have a difficult time finding and training technicians.**
   Thirty-eight percent of responding firms reported that technicians were the most difficult type of job to recruit. This in an increase of nearly 20% since 1993 and interestingly, technicians have replaced experienced engineers as the most critical need.

3. **Local educational and vocational training programs need to be improved.**
   Sonoma County's high-tech firms reported that the public sector can best assist high-tech companies in the long-run by investing more resources into workforce training and development. This response correlates with the firms' dissatisfaction with the local labor pool. Sonoma State University's emerging Graduate Engineering Sciences program will hopefully help address this shortcoming.

4. **Traffic congestion is now a significant concern to high tech firms.**
   Fifty-eight percent of the companies cite traffic congestion on local roads and highways as a significant obstacle to doing business in the County. This is an increase of more than 100% since the 1993 study.

Detailed charts are available for review in Chapter IX, starting on page 21.

# V. ANALYSIS

As the United States approaches the 21st Century and the "Information Economy" begins to take hold, high-tech firms are commanding a larger portion of the economy. Offering high-paying jobs while contributing little to pollution and sprawl, the high-tech sector is a golden opportunity for Sonoma County and its residents.

As the Millennium approaches, Sonoma County is still in a strategic position to offer space, low real estate costs and a high quality-of-life to start-up, expanding, and relocating high-tech companies. But the County also faces a few major obstacles that it did not five years ago.

Perhaps the most pressing challenge for Sonoma County is its labor force. One of the shared attributes of successful high-tech regions is an exceptionally skilled and well-educated workforce. The 1998 survey respondents report that this region does not have an adequate one. Instead Sonoma County lags behind 'knowledge-based' areas such as Silicon Valley, Boston's "Route 128", Austin, TX, and Cambridge, UK, each of which has easy access to major universities (i.e. Stanford, Berkeley, MIT, UT Austin and Cambridge), and therefore a much higher number of local graduates with advanced degrees and extensive field experience. Sonoma County's high-tech community is well aware of this shortcoming; nearly two-thirds of responding firms reported that they have difficulty finding skilled employees and 81% say the local labor pool is inadequate. The local high-tech firms are consequently forced to recruit from other areas, thereby spending valuable time, energy and money trying to gain inroads into other regions' high-tech training grounds.

It is commonly recognized that such a shortcoming will become a major problem in the future as high-tech companies will relocate to and emerge from areas with strong high-tech human capacity. Mr. Ed Dennison, the President of the Council of Regional Information Technology Associations (CRITA) agrees: "The region that can offer the best workforce will be *the* place for companies to relocate or settle."

So Sonoma County now stands at a crossroads. In one direction stands the economic prosperity and quality of life that will accompany a high-technology region in the 21st Century. In the other direction lies the missed opportunity that will inevitably accompany a failure to respond to the high-tech community's needs.

Sonoma County should make an effort to choose the path of high-technology, recognizing the link between the County's future vitality and the industry. For without an improvement in the local labor pool, local infrastructure, local educational programs, and public understanding, high-tech companies may eventually choose to locate elsewhere, removing their high-wage, low-impact jobs from Sonoma County.

Of the attributes that characterize other successful high-tech areas, Sonoma County can most readily forge bonds with and within its high-tech community. For Sonoma County, the path to sustained economic prosperity lies in a greater synergy among local schools, businesses and government. Working together, leaders from these three sectors can successfully advance Sonoma County's economy into the 21st Century and an age of enhanced opportunity.

# VI. DETAILED RECOMMENDATIONS

The following recommendations provide a means to address the major concerns raised in this report. They are based on the survey data, research on other high-tech areas, and suggestions made by Sonoma County's high-tech business leaders.

## 1. CREATE A VIBRRANT TECHNOLOGY UMBRELLA ORGANIZATION THAT SERVES SONOMA COUNTY'S HIGH-TECH FIRMS

*Action Steps*

1. *Organize a Sonoma County Technology Roundtable with leaders from the local high-tech community*
2. *Encourage leaders from local high-tech firms to participate more actively in trade groups and bi-county support efforts.*
3. *Explore the creation of a Sonoma County branch of the American Electronics Association*

### SONOMA COUNTY TECHNOLOGY ROUNDTABLE

Sonoma County should create a Technology Roundtable in order to better serve its local high-tech firms. Consisting of leaders from the local high-tech community with support from education, trade groups, businesses, agencies and with staff from the Economic Development Board, such a group would take the lead in Sonoma County's efforts to strengthen its high-tech business climate: A Technology Roundtable would:

- Improve the high-tech business climate in Sonoma County
- Act as a conduit of information between the local high-tech community and Sonoma County's residents, businesses, and governments
- Speak as one informed voice on behalf of the local high-tech community
- Raise awareness of high technology among local residents

A proposed Technology Roundtable organizational structure is included on page 33.

### A BI-COUNTY EFFORT

While Sonoma County can benefit by working alone in areas such as workforce development and publicity, other efforts such as lobbying, attracting venture capital, and infrastructure improvements may be best furthered on a bi-county basis in conjunction with Marin County.

A few bi-county high-tech support organizations currently exist in the North Bay, and although they tend to be focused on particular high-tech market segments rather than the sector as a whole, they remain a logical place to start the organized bi-county effort. Organizations including the North Bay Multi-Media Association, the Manufacturers' Group, North Bay Council, APICS, and the North Bay Software and Information Technology Association (SofTech), a trade association launched in response to the 1993 report, all currently serve the region's high-tech sector and can therefore be a starting point for the bi-county effort.
Sonoma County can make an effort to enable these organizations to better serve the Sonoma County's High-Tech community by encouraging local high-tech leaders to participate more actively in the bi-county efforts and trade groups.

### AMERICAN ELECTRONICS ASSOCIATION

The American Electronics Association (AEA) is the nation's largest high-tech trade association, with more than 3,000 member companies spanning the spectrum of electronic and information technology. AEA serves as a non-partisan advocacy group, educating the public, the media and the government about high-technology and its impacts. AEA has 18 councils, 4 in California. These branches link their communities together by bringing technology leaders together for speaker sessions and special events.

Sonoma County should actively explore forming an AEA branch on its own or with Marin County. Such a local branch would create networking opportunities for the area's high-tech leaders and draw attention to the area as a high-tech friendly locale.

## 2. IMPROVE AND DEVELOP A HIGH-TECH WORKFORCE

To reap the rewards of the high-tech industry's growth, Sonoma County must make better efforts both to bring in outsiders who are already trained, and to prepare its residents for employment in local high-tech firms.

In fact, many areas across the country are already succeeding with high-technology workforce development initiatives. States from Connecticut to Oregon, and regions from Northern Virginia to Dallas, have organized scholarship, mentorship, internship, and apprenticeship programs. Though specifics differ, all of these programs link local high-tech firms with local students in an effort to develop the local workforce. Many high-tech associations also try to improve the local high-tech labor pool with programs that sponsor workforce development activities that connect employers and employees, gather important market information, and provide job training.

**RECOMMENDATIONS:**

Sonoma County must make a similarly vigorous effort to improve and develop its high-tech workforce. Specifically, Sonoma County should work to:

- Support the emerging Sonoma State University effort to form graduate a level Engineering Sciences program.
- Offer high-tech scholarships at the emerging Sonoma State University Engineering Sciences program. These would attract the best students. Local firms could help subsidize the scholarships in exchange for a guarantee that the students will work in the area after graduation.
- Expand the math, science and engineering curriculums in local schools, both K-12 and post-secondary.
- Bring more local high-tech businesses into the planning and implementation of these curriculums to ensure a real link between what is taught in the classroom and what occurs in the workplace.
- Arrange a forum or series of forums for educators and business leaders to meet in order to discus the high-tech industry's critical workforce needs.
- Bring more local high-tech leaders into the school environment to talk with students and educators, and to conduct workshops on high-tech careers.
- Facilitate more student internships and apprenticeships by bringing local high-tech companies and school administrators together. A "High-Tech Summer" internship program for students with an interest in high-tech careers and an internship/apprenticeship program during the school year for local students should be organized.
- Increase the high-technology literacy of Sonoma County's educators and instructors. Often they do not have the requisite background or training to successfully impart the necessary knowledge and motivation to their students. Possible opportunities include workshops, lectures, and training sessions with high-tech leaders and experts.
- Create/expand links between local high-tech firms and traditionally exceptional research institutions such as MIT, Berkeley, Stanford, as well as the California State University system. Possible opportunities for the local high-tech community include sponsoring academic conferences, offering internships and mentorships to students, and presenting guest professors.

- Explore the possibility of linking technical courses at Sonoma State University and Santa Rosa Junior College with major research institutions through video conferencing and guest professors.

With its technical expertise, a Technology Roundtable is best equipped to direct the development of these workforce development initiatives. But it won't be successful without the support of local government, professional service advisors, professional groups and academic institutions. Local government especially must make its support for the development of a high-tech workforce clear. Opportunities to do so include:

- A County Board of Supervisors' resolution declaring support for developing and improving the high-tech workforce and business environment.
- The encouragement of local schools (especially K-12) to work with the local high-tech community in developing and implementing curriculums.

A synergy among the high-tech, government, trade groups, and education sectors will enable Sonoma County to improve its workforce to a level necessitated by the 21st Century economy.

It must be noted that another impetus exists for the improvement of local educational institutions: highly educated high-tech employees expect and demand good schools for their children. If Sonoma County is going to market itself as family-oriented locale with a high quality of life, it must ensure that local schools meet the needs of the high-tech community's children.

**ONE –STOP HIGH-TECH CAREER CENTER**

While there is a reported serious deficiency in the high-tech capabilities of the local labor pool, not all of the local high-tech firms' inability to find employees can be attributed to it. Rather, a portion of the problem may result from a disconnection between the firms and potential employees. Many people in Sonoma County could be good high-tech employees but do not know of available job opportunities, and many high-tech firms do not know of available potential employees.

Sonoma County Job Link already has website that links to online job postings and provides employers with online résumés and local labor market information.

Nonetheless, a disconnection still exists. Consequently, a greater emphasis needs to be placed on encouraging local high-tech firms to post their job openings on the Job Link web site, and on encouraging local residents to look there for the high-tech job openings.

## 3. CONSOLIDATE HIGH-TECHNOLOGY INTO ONE ECONOMIC CLUSTER

Regional Financial Associates, in their recent economic analysis of the county, broke the Sonoma County economy into eight clusters for economic analysis purposes:

1. Agricultural, Wineries and Food Processing
2. Information Technology
3. High-Tech Electronics
4. High-Tech Instruments and Optical Goods
5. Other High-Value Added Manufacturing
6. Resource-Based Manufacturing
7. Financial Services

8. Tourism

No fewer than four of these clusters include "High-Technology". By so diffusing high tech, the current grouping may minimize high-tech's perceived impact on the County's economy. Consequently, the clusters should be redefined to more accurately represent high technology in Sonoma County.

Specifically, future economic analysis should consider:

- **Grouping together "Information Technology", "High-Tech Electronics", "High-Tech Instruments" and "Optical Goods" and "Other High-Value Added Manufacturing" into one "High Tech" cluster for economic analysis purposes.**

Such a regrouping would raise the perceived impact of high-technology to a level that more accurately reflects the sector's true impact. For example, in 1995, the regrouping would place High Tech as the second-highest Gross Regional Product (Output) cluster, smaller than Agriculture but larger than Tourism.

1995 Sonoma County Gross Regional Product (Output) by Cluster:
*Millions of 1987 Dollars*

| | |
|---|---|
| 1. Agriculture | 709.1 |
| 2. High Tech | 670.0 |
| 3. Tourism | 655.0 |

## 4. DEVELOP AND PUBLICIZE SONOMA COUNTY AS A TECHNOLOGY FRIENDLY PLACE

*Action Steps*

1. *Charge the Economic Development Board to staff a Technology Roundtable and to develop policies and programs for the high-tech community*
2. *Publish an annual Sonoma County Technology Report similar to the Agriculture Crop Report*
3. *Organize a Sonoma County Science and Technology Week*
4. *Publish and distribute information for and about Sonoma County's high tech community*

If Sonoma County is going to become a place where many high-tech firms start-up and grow, the business community must see it as a high tech-friendly place; high-tech firms must know that they are wanted in Sonoma County. Consequently, Sonoma County should:

**Dedicate staff to serve High-Technology**. Both Agriculture and Tourism are considered important enough by the County of Sonoma to have management and staff dedicated to assisting their vitality. Since High-Tech's impact on the Sonoma County economy falls squarely in between the two, it follows that High Tech should be afforded a similar effort. The Economic Development Board has in the past taken the lead in performing similarly innovative approaches to maintaining the region's economic vitality and would be logical staff for a Technology Roundtable or preliminary support efforts. The staff would:

a**. Write and distribute an annual Sonoma County High Tech Report**. Every year the Office of the Sonoma County Agricultural Commissioner writes and distributes a report on the County's agricultural sector. This report serves not only to alert the public about agriculture's impact on Sonoma County, but also to highlight agriculture's importance within it. An Annual Report on Technology in Sonoma County would serve a similarly useful purpose: it would alert the public to high tech's impact on the local economy and demonstrate that Sonoma County values high-technology firms. Since high tech is a sector that is rapidly evolving, an annual report would also be particularly useful because it would enable Sonoma County to better adapt to and serve high tech's emerging needs.

b. **Organize a Sonoma County Science and Technology Week.** Sonoma County declares weeks to recognize a number of community concerns and opportunities. Like the *Agricultural Crop Report*, these weeks serve to both familiarize the public with particular causes and to demonstrate that the County values them. Sonoma County could use these as a model for high technology and establish a *Sonoma County Science and Technology Week*. By publicly recognizing and exposing science and technology, the week would demystify this often abstract sector as well as reaffirm its importance to Sonoma County. The week could include demonstrations on high technology in public spaces such as malls and libraries, events that celebrate high tech contributions to Sonoma County, presentations at local schools, and more.

c**. Publish and distribute information for and about Sonoma County's high-tech community**. Such lines of communication would not only link a sector that benefits from linkages, but would also familiarize the local population with high technology and increase Sonoma County's profile as a high tech-friendly region. A **website** would be a particularly appropriate (and cost-effective) starting point.

## 5. LOCAL GOVERNMENTS SHOULD MAKE A SPECIAL EFFORT TO REACH OUT TO LOCAL HIGH-TECH FIRMS

As they become a more significant part of the region's economy, Sonoma County's high-tech businesses need a special effort by local governments to reach out to their concerns. Consequently, the County should:

- **Create a Board of Supervisors' *ad hoc* Committee on Technology that focuses on issues of technology and serves as a liaison between the local high-tech sector and the entire Board of Supervisors and the larger community.**

In addition, the following existing programs should be adapted in order to better address the concerns of the County's high-tech community:

1. **North Bay Permit Assistance Center (PAC)** - Both regulations and permits were areas that the high-tech respondents believed local government could assist businesses. The PAC is charged with making it easier for companies to comply with regulation. This program should be requested to work with leaders from high-tech companies so that they can become actively involved in jointly developing solutions.

2. **The Sonoma County *Home Team* -** The Economic Development Board has launched the Sonoma County *Home Team*, a public/private partnership devoted to supporting and encouraging appropriate home-based businesses in Sonoma County. *The Home Team* should make an effort to expand the presence of local high-tech home-based businesses in its leadership and program activities.

3. **Job Creation Investment Program** – This program is specifically charged with surveying companies regarding the obstacles to job creation and then developing strategies to resolve those impediments. High-tech firms should be encouraged to participate of the survey process and strategy development.

4. **Other existing programs** – High-tech leaders should be included in these existing business and support services groups:
   - International trade resources (North Bay World Trade Association/U.S. Foreign Commercial Service/SBA/Bay Trade-GOITC/CEFO); One Step Career Center; Small Business Assistance and Counseling Services (Service Corps of Retired Executives/SRJC's Redwood Empire Small Business Development Center), Sonoma County Job Link, et al.

# VII. SURVEY GOALS AND METHODOLOGY

The primary objectives of this update study were to:

- Update the 1993 report with more current information
- Compare the 1999 results with the 1993 report
- Profile Sonoma County existing high-tech companies
- Identify factors that have been critical to the growth of Sonoma County high-tech companies.
- Identify major concerns of Sonoma County high-tech companies
- Explore possible solutions to these problems

This report is an update of the information gathered for a study conducted in 1993. In the original report, high-tech was defined as "industries which require a high degree of technical sophistication and scientific personnel to produce goods and services." For the sake of comparison, this definition was used again.

Companies in both the 1993 and 1998 reports were identified using various high-tech listing guides, Standard Industrial Classification (SIC) codes, and information provided by other local sources. A brief cover letter and a double-sided, single-page survey questionnaire were mailed out to 210 firms. A total of 120 companies responded to the surveys. This 57% response rate was an increase of 7% over the 1993 response rate.

It should be noted that the definition of "high-technology" in this study yields a consistently conservative assessment of high-tech's impact. Specifically, the SIC codes do not capture the new growth industries that have arisen since the SIC system was designed in 1941 and updated in 1987. Nor do the codes capture the thousands of temporary high-tech workers because all temporary workers are grouped together under SIC code 7363, "help supply services".

Some the graphs list the actual number of firms that responded. However, the majority of the data of this study is represented as percentages. The tables and graphs herein have two types of percentages. They are labeled as either "Percentage of Firms" or "Percentage of Firms Responding." The difference between the two is that the "Percentage of Firms Responding" graphs represent questions for which there are multiple answers. These percentages will not add up to 100%. They merely show the number of responses that each category received from each firm.

# VIII. QUALIFICATIONS AND AREAS FOR FURTHER STUDY

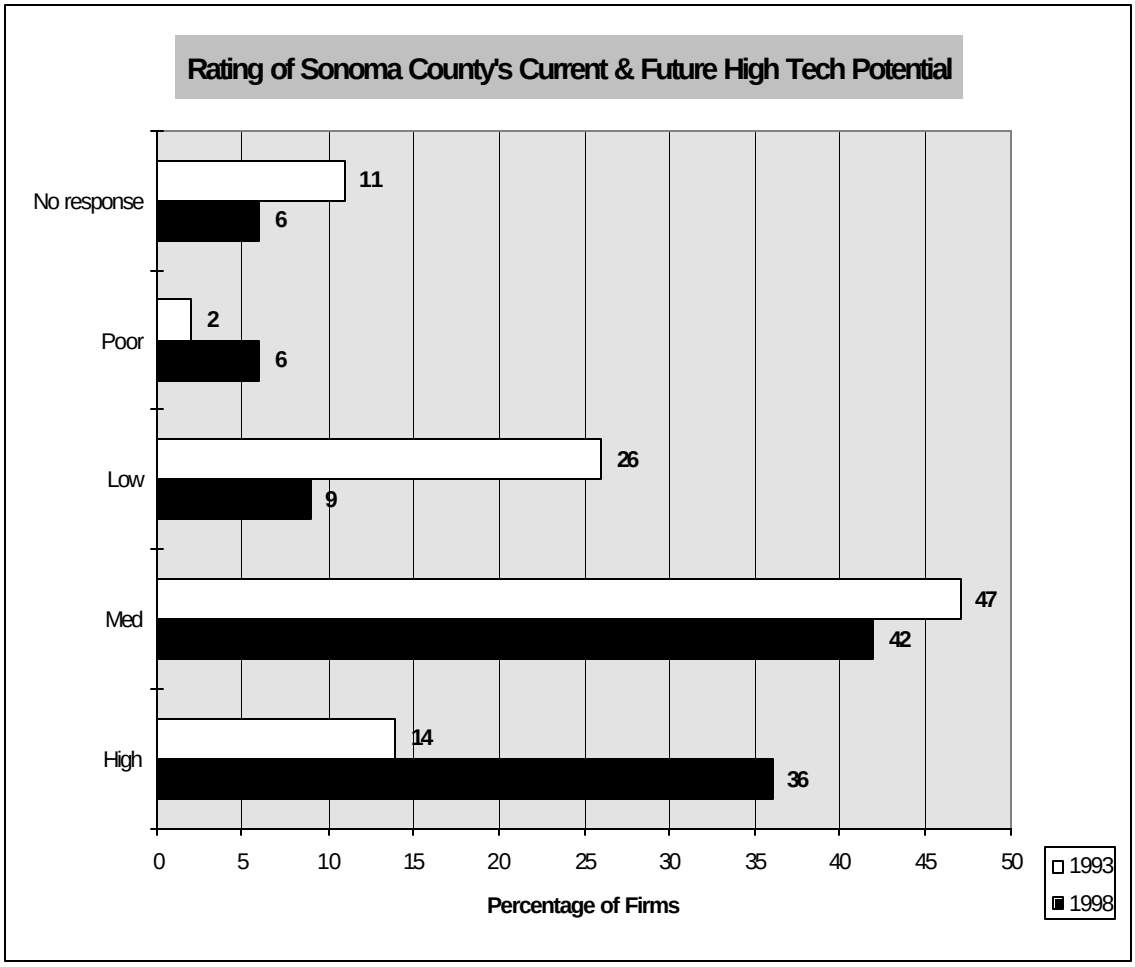
This study relied on local high-tech firms responding to a survey that was mailed to them. This process invites a few potential problems, most notably the possible skewing of results. It is possible that the manner in which the information was gathered encouraged a certain segment of the industry population to respond while possibly discouraging other segments. For example, it is possible that a larger, more established firm would take the time and effort to respond while a smaller and newer firm might not. Another possible problem is the manner in which the list of companies to be mailed surveys was collected. New companies and start-ups are less likely to be in guides and therefore less likely to be surveyed.

However, the Economic Development Board believes that that the large number (120) and percentage (57%) of firms responding provides a large enough sample size to confidently draw the conclusions it does. Nonetheless, if another study is performed, an extra effort should be made to include as many firms as possible, especially those that are smaller and newer.

In addition, if another study is performed, an analysis of employment statistics from the US Bureau of Labor should be performed. The American Electronics Association uses the *ES-202 program* (Covered Employment and Wages) for its detailed reports. However, the SIC classification system that the AEA currently uses should not be used for subsequent EDB reports. Instead, the EDB should use a more flexible system known as the North American Industrial Classification System (NAISC) that the Federal government began to implement in 1997 in order to better address the changes in the economy.

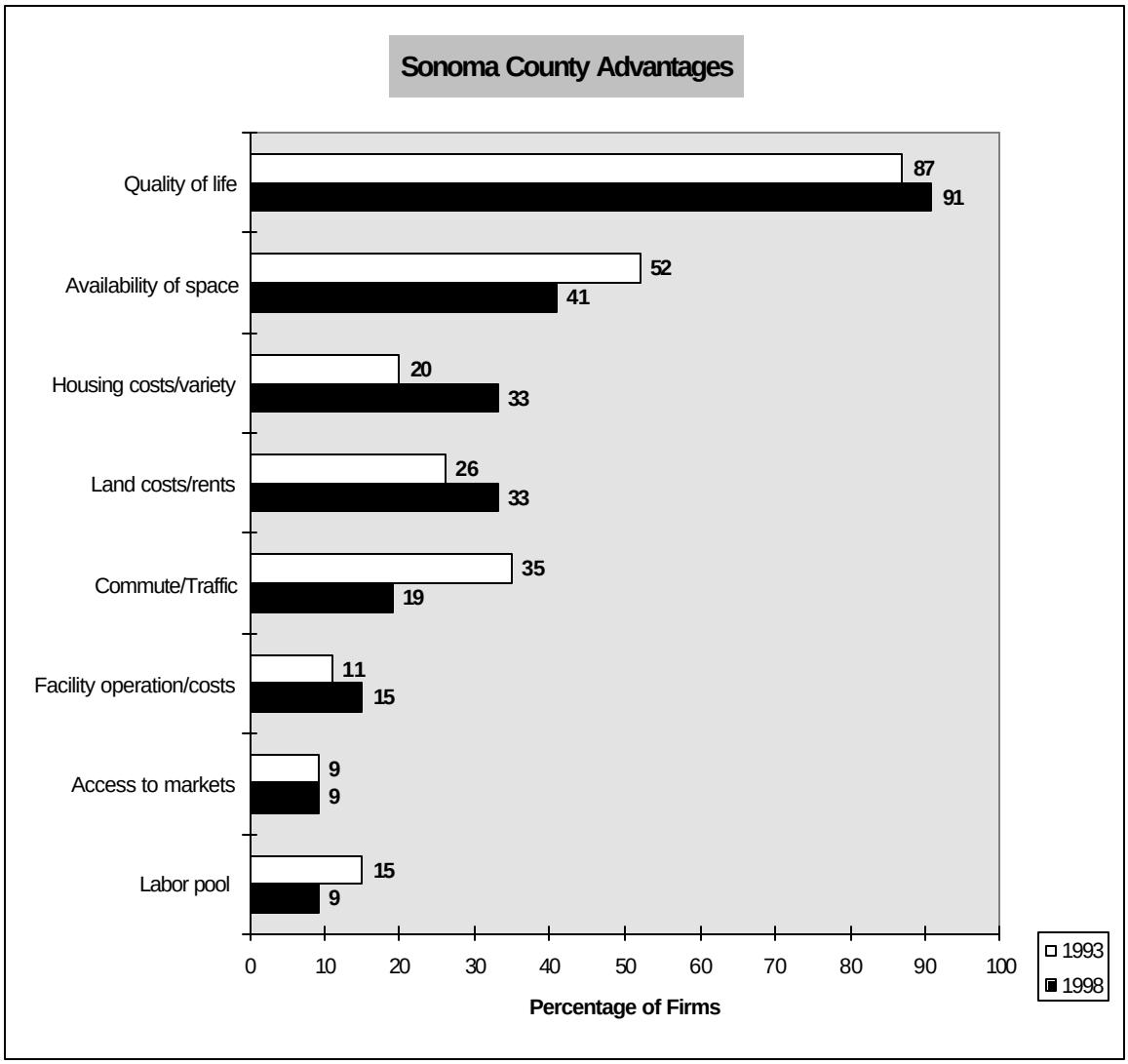
# IX. SURVEY FINDINGS AND RESULTS

## 1. How would you rate Sonoma County's current and future potential for attracting and retaining high tech industries?




Seventy-eight percent of the firms felt that Sonoma County had good potential (high and medium) for attracting and retaining high-tech industries. Fifteen percent felt that Sonoma County has only low or poor potential.

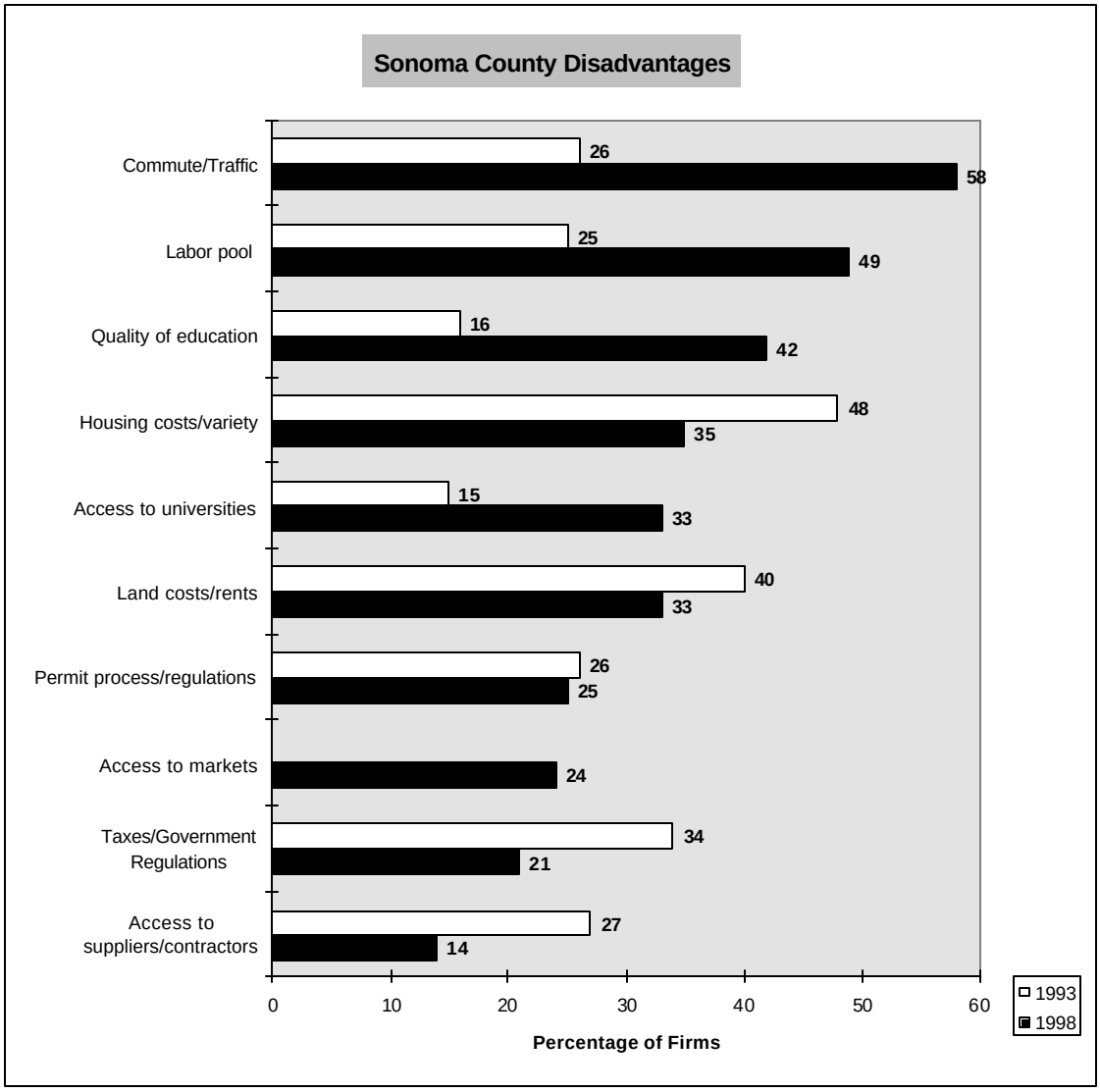
## 2. What are the major advantages of locating a high-tech company in Sonoma County?




By far, ***Quality of Life*** is Sonoma County's greatest asset: 91% of the firms feel that Sonoma County offers a very high standard of living as a great place to live and work. Another reason firms find Sonoma County attractive is the ***Availability of Space:*** 41% feel that having 'room' to expand and/or relocate in Sonoma County is important. In this respect, Sonoma County has an advantage over highly dense market-areas such as San Francisco and Silicon Valley. One-third of the firms also feel that ***Housing Costs/Variety*** and ***Land Costs/ Rents*** are advantages enjoyed by Sonoma County businesses.

It is important to note that there was a decrease in two of the 1993's most cited advantages: availability of space (-11%) and commute/traffic (-16%).

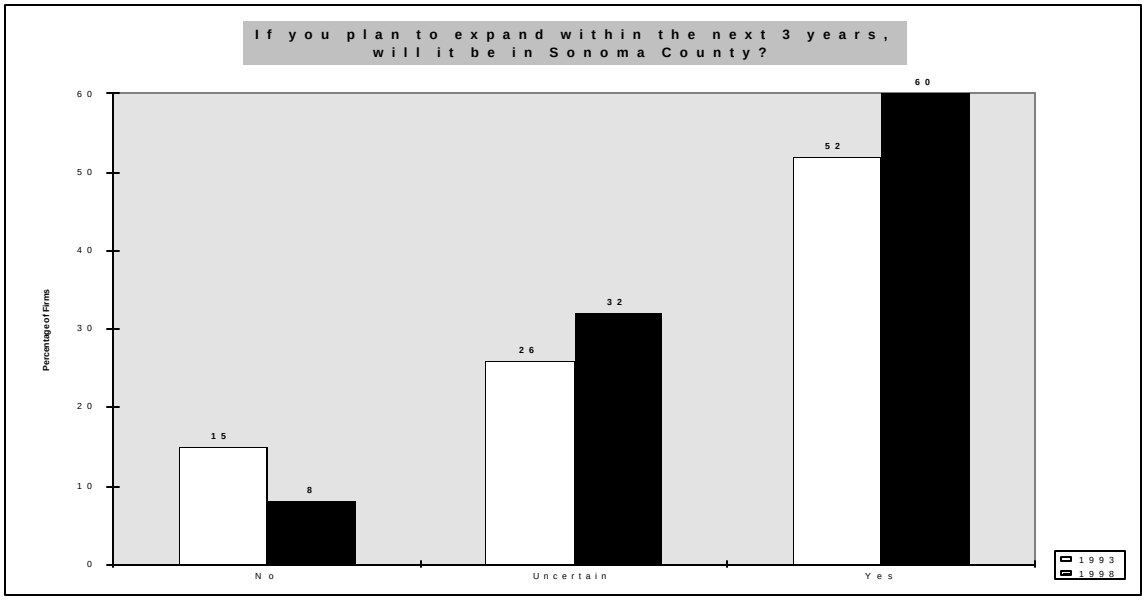
## 3. What are the major disadvantages of locating a high-tech company in Sonoma County?




Firms were also asked to identify some of the negative aspects of locating their operations in Sonoma County. The most cited complaint was ***Commute/Traffic*** at 58%. This percentage is more than double the percentage of 1993's.

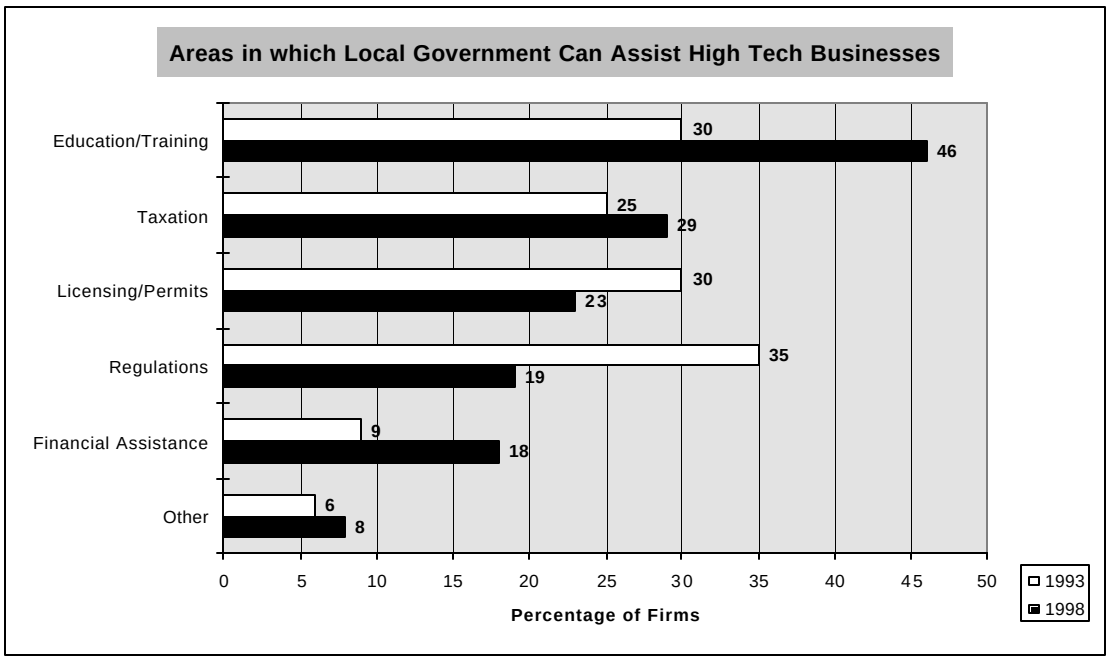
Nearly 50% of the firms also feel that the local ***Labor Pool*** is a disadvantage to doing business in Sonoma County, again almost double the percentage of 1993. Similarly, 42% of the respondents felt that the ***Quality of Education*** provided by local institutions of learning (e.g. K-12, Santa Rosa Junior College and Sonoma State University) is inadequate. One-third of the firms feel that ***Access to Universities*** is a major disadvantage of being in Sonoma County. Hopefully, the emerging SSU Engineering Sciences program will begin to address this shortcoming.

## 4. If you plan to expand within the next three years, will it be in Sonoma County?



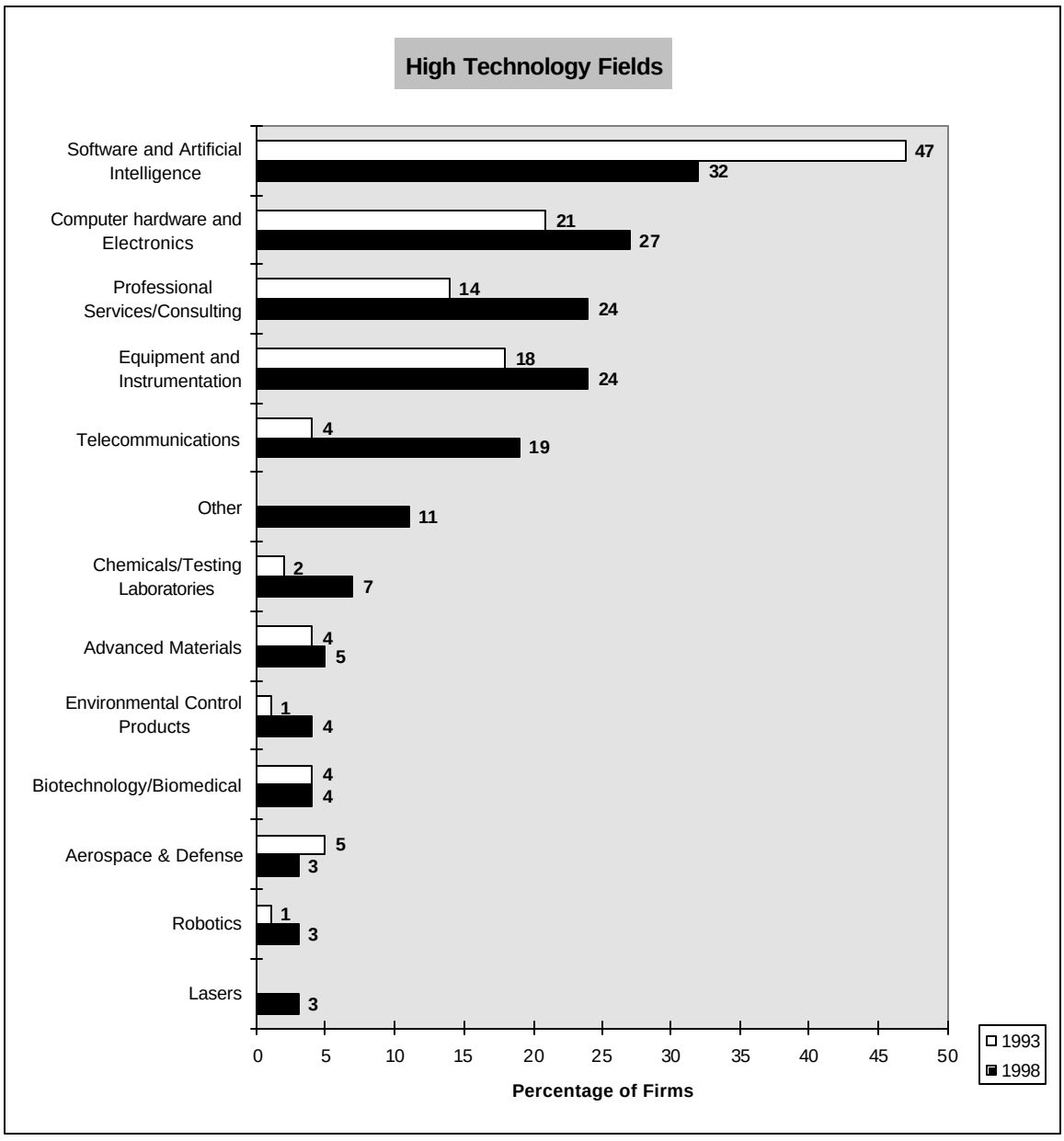

Despite the drawbacks, 60% of the firms would expand their operations within Sonoma County. This is an 8% increase from 1993. Some will do so out of convenience (since their businesses are already established) while others feel that the quality of life enjoyed by Sonoma County residents balances the disadvantages of locating a company here. Only 8% would not locate within Sonoma County, a 7% decrease.

## 5. In which areas do you feel local government could help to further assist high-tech companies?



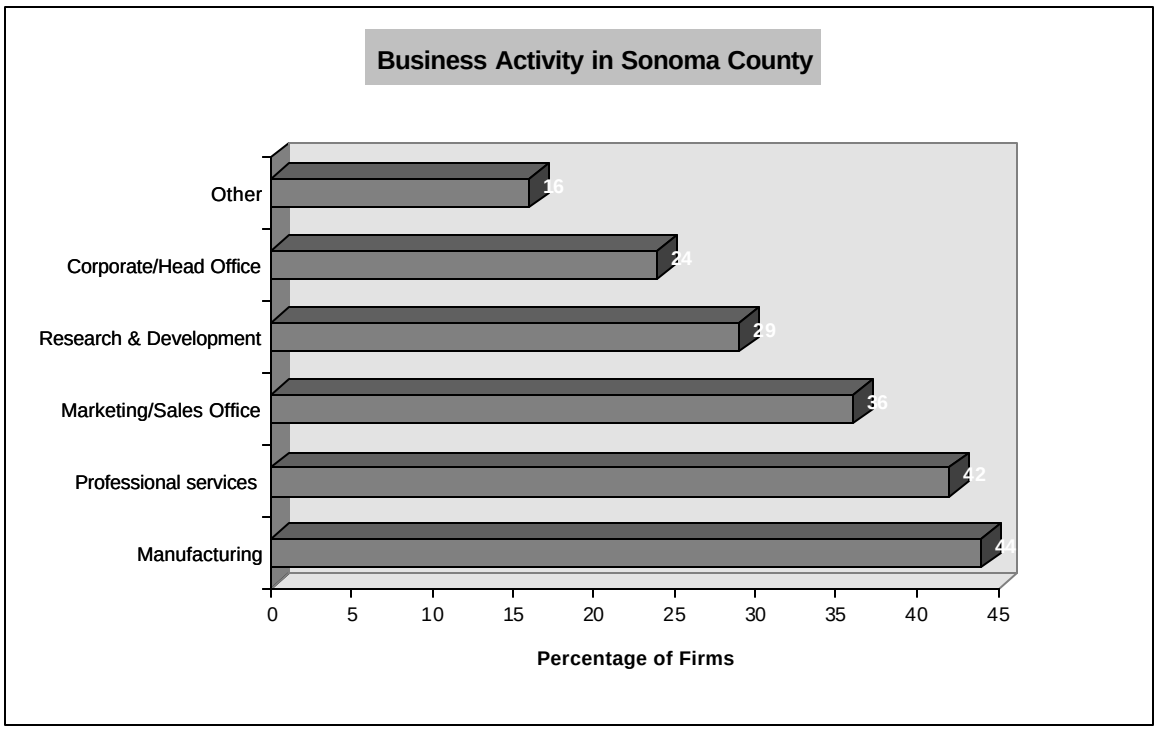

Forty-six percent of the firms consider ***Education & Training*** to be the most critical area in which local governments can assist. Forty-two percent reported that ***Licensing*** *and* ***Regulations*** should be streamlined, and twenty-nine percent of the firms say that ***Taxes*** are problematic.

## 6. Which field of technology best describes your business activity in Sonoma County?



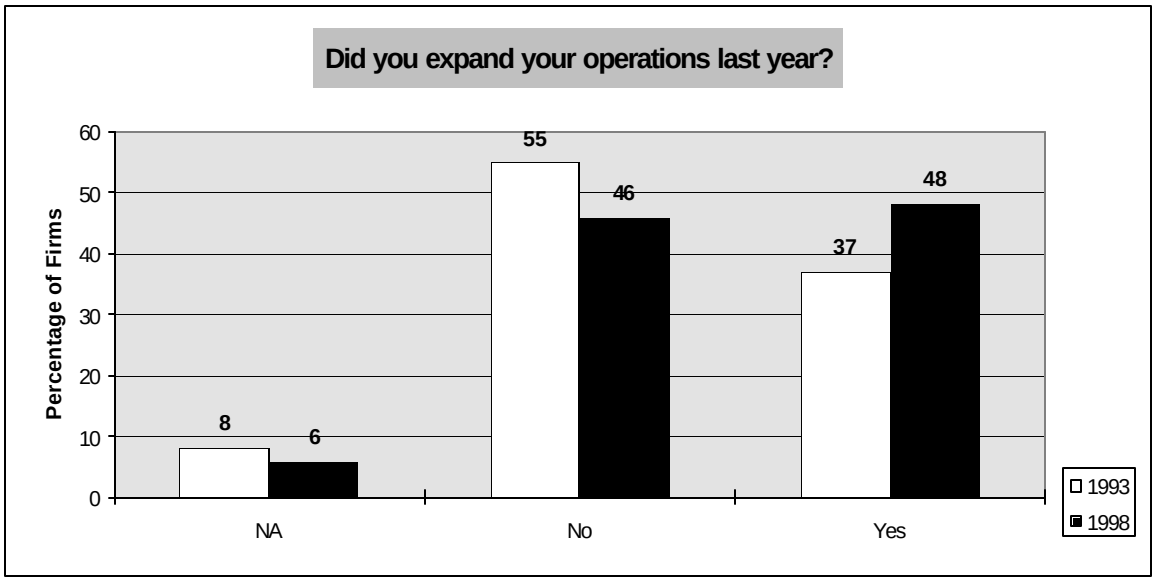

High-Technology has evolved to encompass much more than simply computers and software. For example, whereas only 4% of the firms surveyed in 1993 were engaged in ***telecommunications***, 19% are now involved in this area, a five-fold increase. Additionally ***Professional Services and Consulting*** has experienced a 10 percentage point increase from 14% to 24%. Other increases include Computer Hardware & Electronics (+6), ***Equipment & Instrumentation*** (+6), and ***Chemicals/Testing Laboratories*** (+5).

## 7. Which business operations best describe your business in Sonoma County?



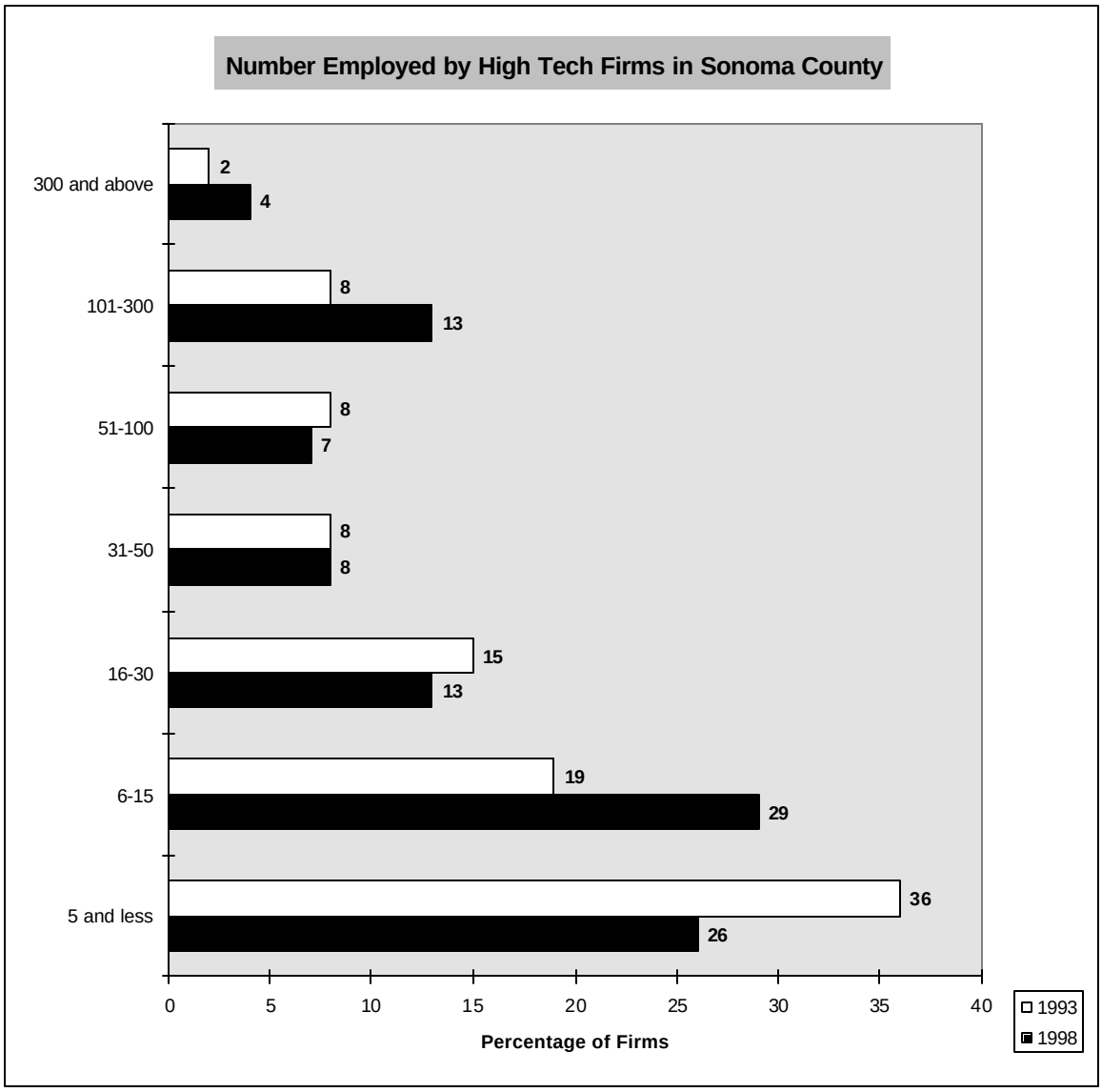

As in the previous question, firms now show a greater range of primary business activities. The three largest activities engaged in by local high-technology businesses are Manufacturing (44%), Professional Services (42%), and Marketing/Sales Office (36%).

## 8. Did you expand your operations last year?



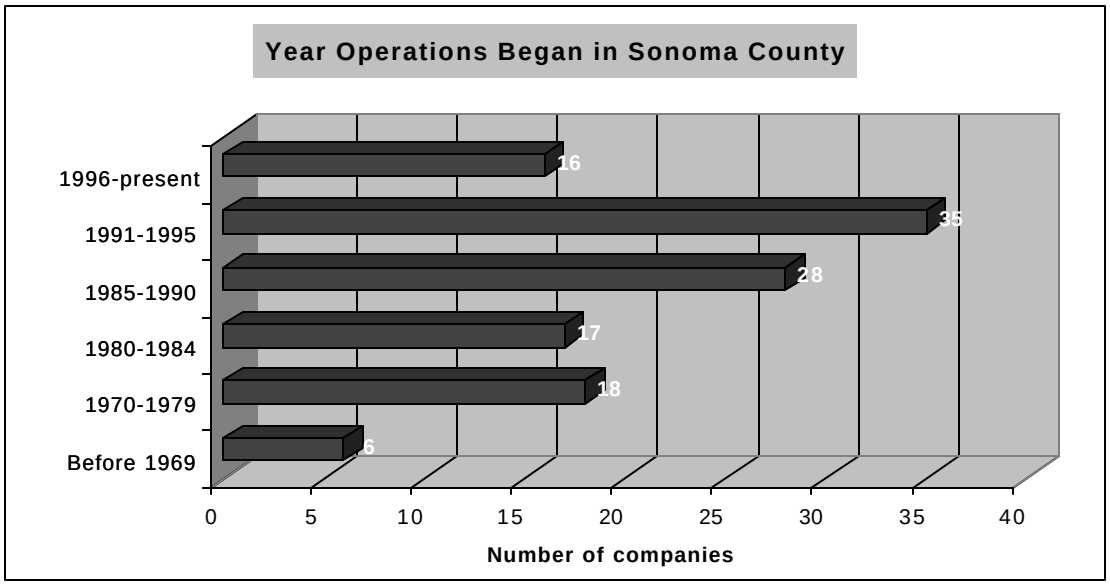

More firms were able to expand their operations in the period between 1993- 1998. A growing optimism for the future potential of high-technology in Sonoma County appears to be a critical factor in the firms' decisions to expand locally.

## 9. Number of employees in Sonoma County



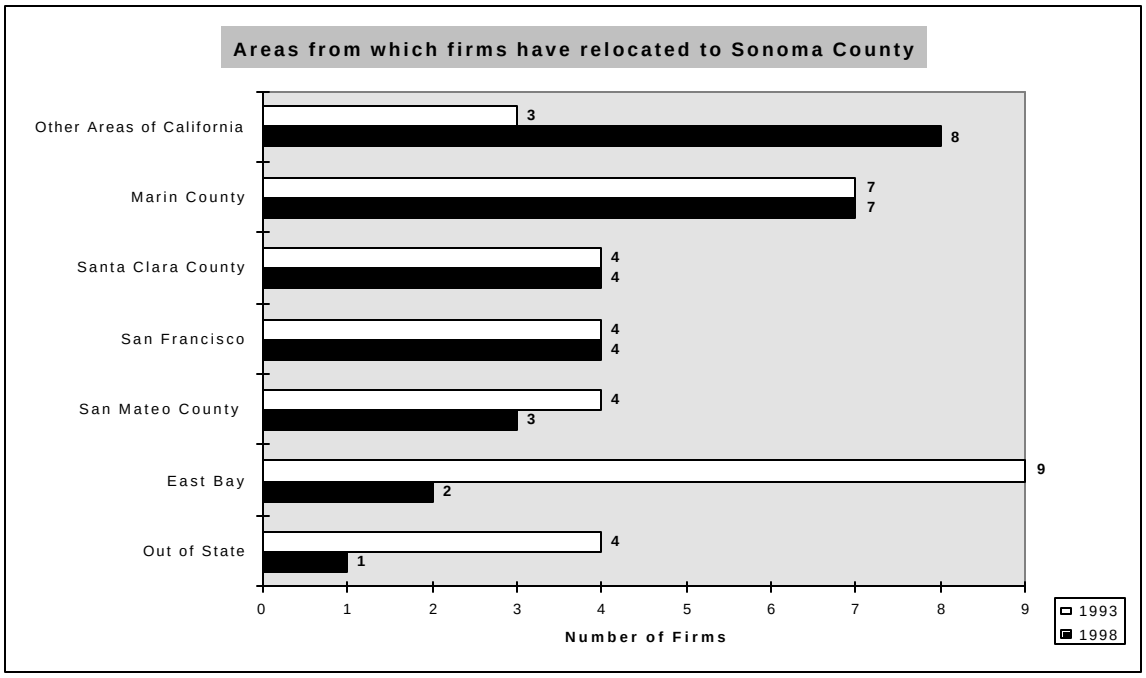

In 1993, the greatest number of firms (36%) had **5 or fewer employees.** However, in 1998 the greatest number of firms (29%) fall within the **6-15 employees** range. The industry is maturing.

## 10. Year operations began in Sonoma County



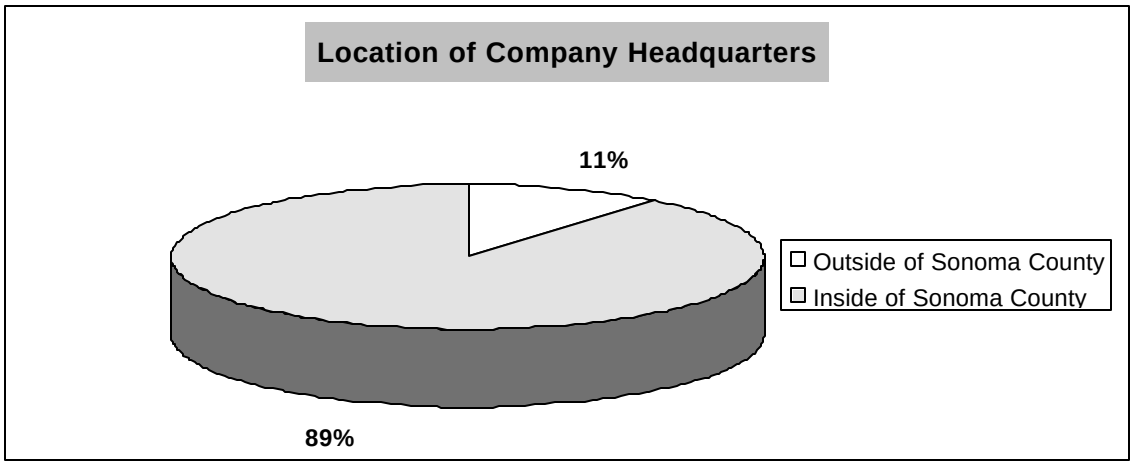

Forty-three percent of the responding firms began operations within the decade. It should also be noted that this figure is may be lower than the actual percentage of start-ups within the high-tech sector as a whole, because established firms with a larger staff may have been more likely to take the time and effort to respond to the survey

## 11. Areas from which firms have relocated to Sonoma County



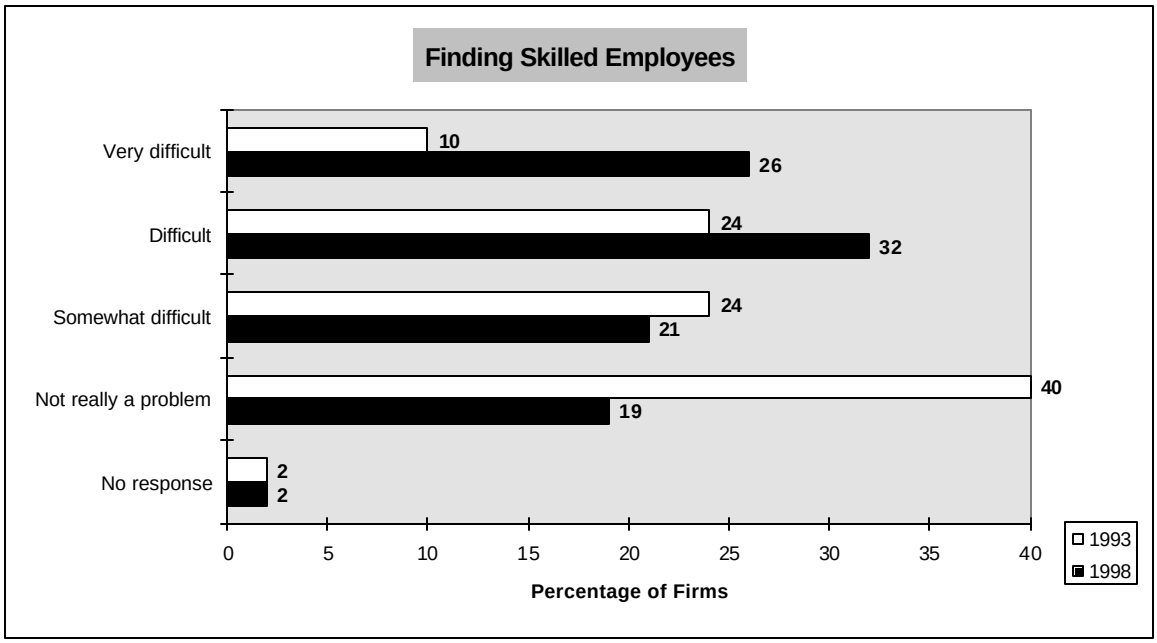

Interestingly, though the 1998 study has a larger sample size, there were a greater number of firms that relocated to Sonoma County in the 1993 study. This finding indicates that firms are now more likely to have started in the area than moved here. In 1993, 41% (n=35) of the firms had relocated while only 24% (n=29) of the firms in the 1998 study have relocated.

## 12. Location of company headquarters




The percentage of firms whose headquarters are situated in Sonoma County came to 89%. This is an increase of almost 10% from the previous study's finding.

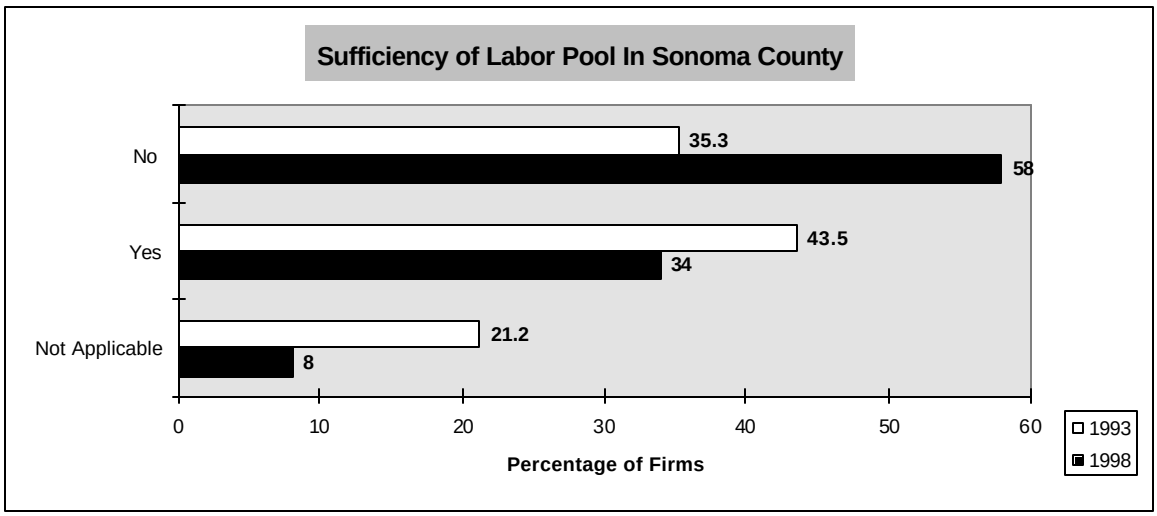
## 13. How difficult is it for your firm to find skilled employees?




Companies cite lack of a skilled labor force as the greatest disadvantage of locating a high-tech firm in Sonoma County. In fact, 62% of the firms maintain that recruiting qualified employees in Sonoma County is either difficult or very difficult. It must be noted that this is a significant increase from the 1993 report, when only 34% of respondents reported difficulty finding skilled employees. The 1993 report also found that 40% of the firms felt finding skilled employees was not really problem, whereas only 19% of the firms responded the same way in 1998.

Clearly, as the high-tech industry in Sonoma County has evolved, the lack of skilled employees has become a major problem. However, it should be noted that some of the increased difficulty should be attributed to the strength of the larger economy; today fewer people are under-employed, and as a consequence, the employment pool has shrunk.

## 14. Does Sonoma County provide a sufficient pool of skilled labor from which to meet most of your employment needs?




Given that only 35% said ***No*** in 1993, we again see that the dissatisfaction with the available labor pool in Sonoma County has increased over the past 5 years.

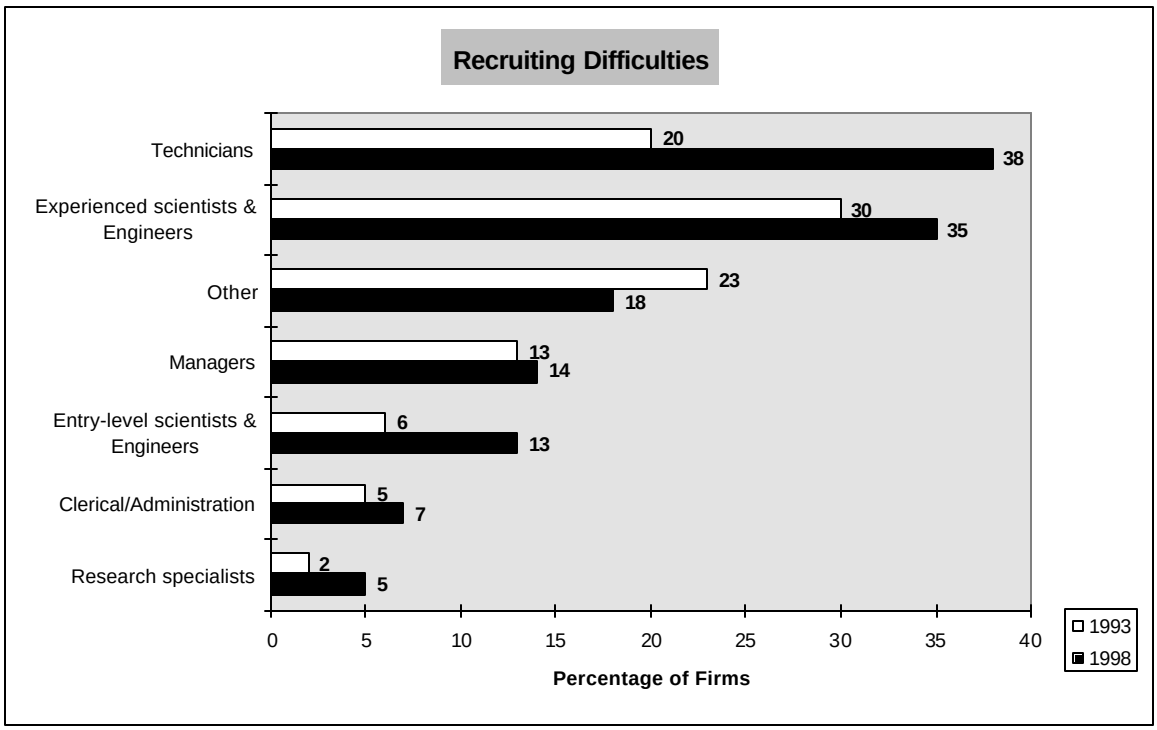
## 15. Please rank the county's educational institutions as they relate to your firm's needs.

| | Poor | Fair | Good | Excellent |
|---|---|---|---|---|
| Primary | 32% | 26% | 42% | 0% |
| Secondary | 32.5% | 30% | 37.5% | 0% |
| Trade/Tech Schools | 29% | 34% | 37% | 0% |
| Santa Rosa JC | 6% | 18% | 58% | 18% |
| Sonoma State University | 12% | 31% | 41% | 16% |

The high-tech community was the most dissatisfied with Sonoma County's primary, secondary and Trade/Tech schools, with each drawing a ***Poor*** or ***Fair*** response from more than 58% of the firms. The Santa Rosa Junior College was viewed much more positively, as it garnered a ***Good*** or ***Excellent*** from 76% of the firms.

It must be noted that many of the firms declined to fully respond to this question because they were not sufficiently familiar with the local educational systems to warrant ranking them. Consequently, while the overall trend (the SRCJ was viewed much more positively than the primary, secondary and tech/trade schools) is valid, the specifics should be viewed cautiously.

## 16. What specific jobs do you have the most difficulty recruiting?



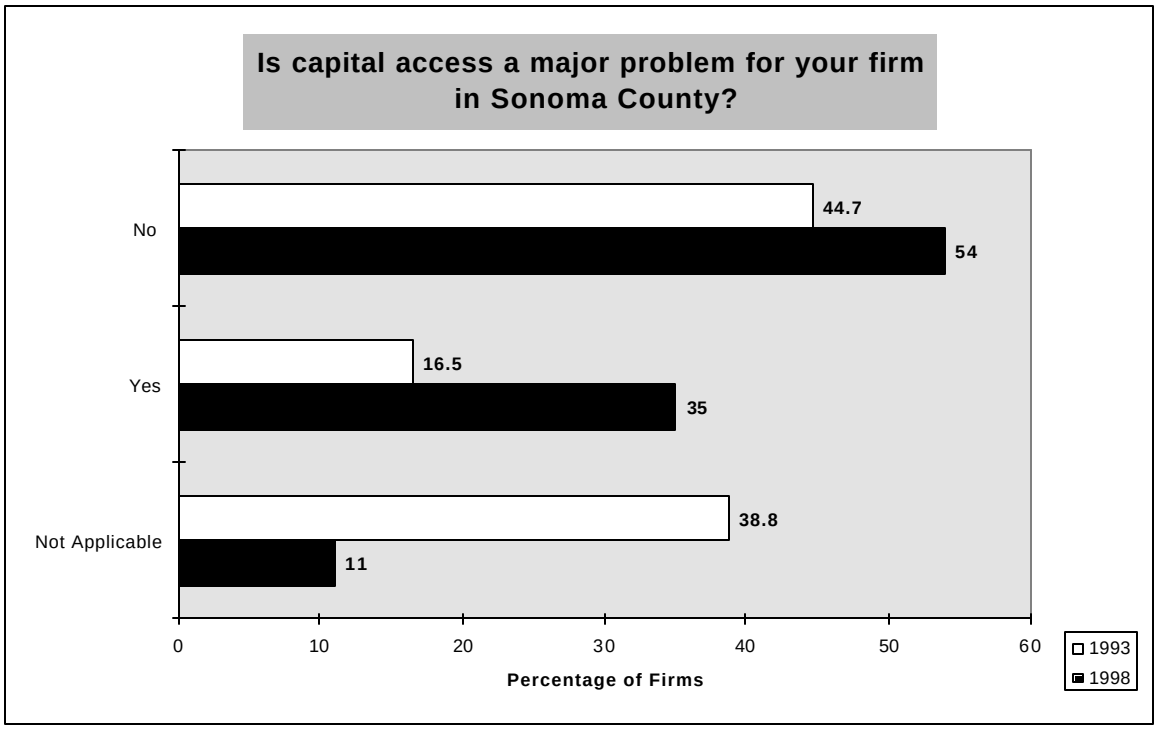

For local high-technology companies, skilled technicians as well as experienced scientists and engineers are the most difficult employees to recruit. Both difficulties have increased since 1993, with skilled technicians increasing by nearly 20%.

## 17. How much of your firm's annual budget is spent on research and development?

Mean
1998 = 21%
1993 = 19%

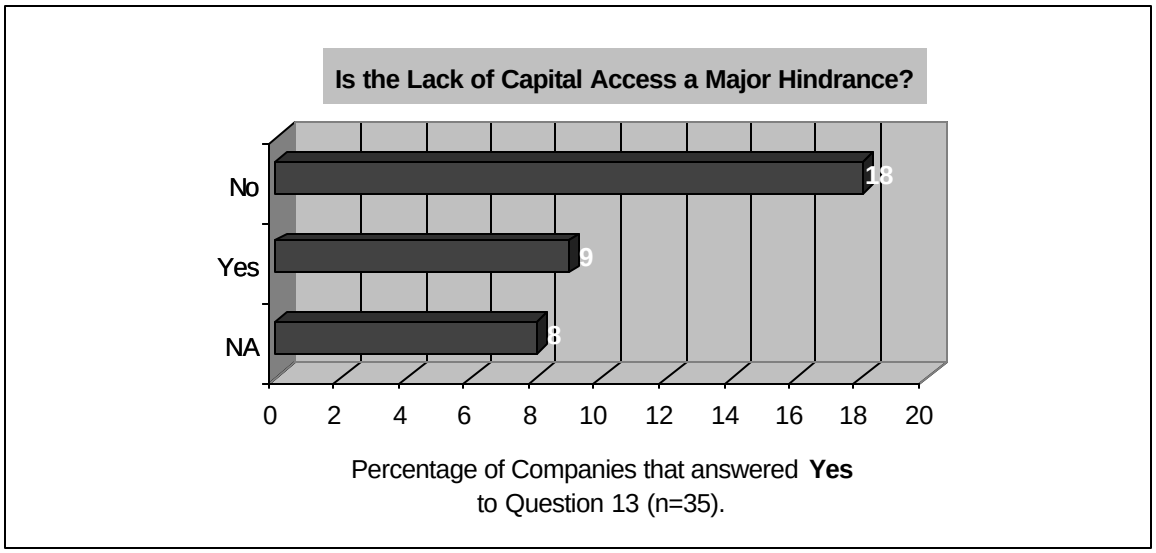
In this area, the firms devote an average of 21% of their resources toward research and development. This percentage is slightly above the 1993 report's average of 19%. Please note that 48 of the companies did not respond to this question.

## 18. Is capital access a major problem for your firm?



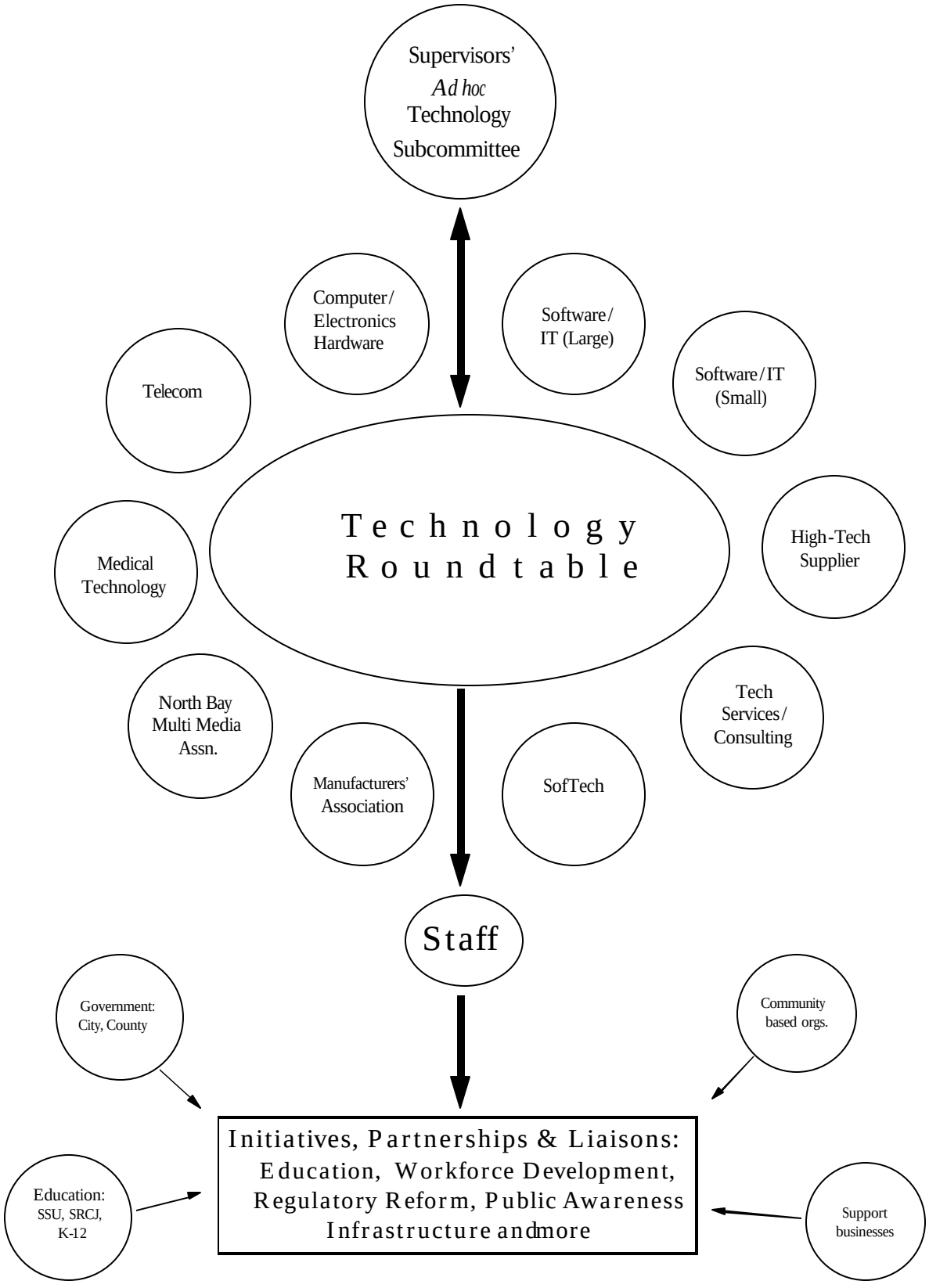

The number of firms responding at all to this question increased at a greater rate than the number of firms responding either yes or no.

## 19. If capital access is a problem, is it a major hindrance to you doing business in Sonoma County?




Again, capital access does not appear to excessively hinder firms.

# Proposed Technology Roundtable Organizational Structure



# X. ACKNOWLEDGMENTS

Many people contributed their valuable time and ideas to this project. With the help of these individuals, this study would have been impossible to complete.

Most credit for this study belongs to the local high-tech business community; more than twice as many firms responded in 1998, and the ideas received were extremely helpful.

A significant amount of secretarial work was contributed by the EDB staff. Much gratitude is due to Colette Thomas and Catherine Harper. Without their relentless work, survey response would not have been nearly as high, nor the report as well presented.

Many friends and colleagues read this report and provided valuable insight. They include Aaron Enz, who wrote the first hi-tech report in 1993. Mr. Brian Gamble of the British Association for the Advancement of Science kindly reviewed this draft and offered ideas.

Dan Nguyen-Tan, Zak Treuhaft and Jane Whittle helped edit the final draft. Without their eyes and creativity, it would not be nearly the product that it is.

Special thanks are due to Jasmine Nguyen for her extraordinary efforts in seeing the survey portion of this report through to completion. In between a full-time job and familial responsibilities, Jasmine prepared the questionnaire and compiled the responses, thereby garnering a potent body of information that is the backbone of this report.

Finally, this report is a testament to the interest and motivation of Jordan Silbert. As Economic Vitality Fellow in the Economic Development Board, he analyzed Jasmine's research, developed the recommendations, wrote the report and planned an implementation strategy.

Ben Stone
Coordinator
Sonoma County Economic Development Board