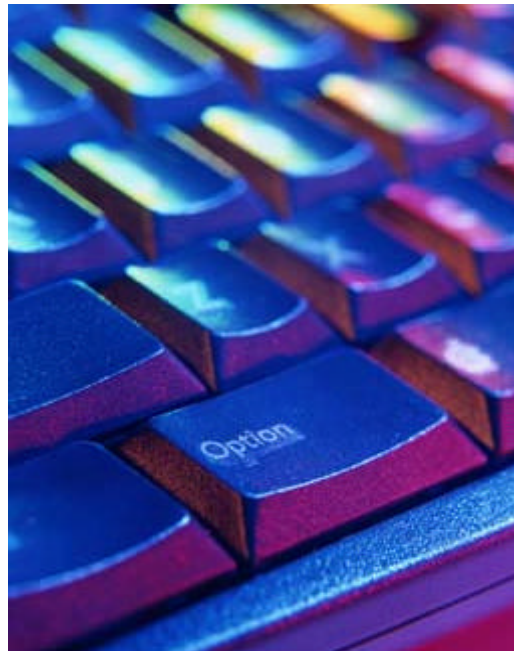


Sonoma County Technology Sector: *Poised for Recovery*



September 2003

**A report developed, researched and written by the Sonoma County Economic Development Board
Ben Stone, Director**

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September 2003

The Sonoma County Economic Development Board is pleased to bring you the 2003 annual technology report, entitled “Sonoma County Technology: *Poised for Recovery.*” In this report you will find the latest available economic data on the status of the technology sector in Sonoma County, arranged in four sections.

The first section of this report is an executive summary and an overview. The second section is qualitative, and is dedicated to comparing the responses of local tech executives to surveys conducted in 1993, 1998 and 2003. The results from the 2003 survey offer a brief overview of current industry trends from the perspectives of local tech firms, including Sonoma County’s economic competitiveness, workforce availability, and the status of educational programs in technological fields. The data from this survey suggests:

- There is an increased overall potential for attracting and retaining tech industries to Sonoma County
- A higher percentage of companies are planning to expand within the county than reported ten years ago
- Executives largely agree that the “quality of life” in Sonoma County is the greatest advantage offered by the region

The third section of the report is a quantitative analysis of the tech industry, comparing county trends to state and national trends in a graphical format. Also included are charts illustrating the condition of education, housing, and traffic in Sonoma County, all of which are key concerns of tech executives in considering the future health of the local industry.


The fourth section releases the new 2003 technology sector report from Economy.com about the health of the technology industry in Sonoma County, and its prospects for the future.

As always, please feel free to offer feedback on ways we can improve this report. You can contact EDB Offices at (707) 565-7170, or at edb@sonoma-county.org.

Thank you again for your interest in the economy in Sonoma County, and for your support of the research conducted by the Economic Development Board.

Yours sincerely,

Ben Stone



SECTION I
**EXECUTIVE SUMMARY &
OVERVIEW**

In 2003, the Economic Development Board surveyed high-technology businesses in Sonoma County to offer an overview of current technology industry trends including Sonoma County's economic competitiveness, workforce availability, and status of educational programs in technological fields. This 2003 report compares technology survey results from 1993 and 1998 to provide a qualitative overview of how the technology sector has developed over the past decade. This report also offers a quantitative analysis of the local technology industry economy, demonstrating that the sector is poised for recovery.

KEY SURVEY FINDINGS ***QUALITATIVE OVERVIEW***

- **Sonoma County is still a great place to live, to work, and to operate a technology business.** 92% of the respondents recognize Sonoma County as a great place to live and work, up from 91% and 87% reported in 1998 and 1993, respectively.
- **Sonoma County still has strong potential as a technology region.** 82% of the respondents feel that Sonoma County has good potential for attracting and retaining tech companies, up from 61% in the original 1993 report.
- **Technology firms want to remain and grow in Sonoma County.** 69% of the responding executives expect to expand their operations within Sonoma County in the next three years. This is a net percentage point increase of 9% since the 1998 survey, and a 14% percentage point increase from the 1993 report.
- **Technology is still considered a very young and diversifying industry in Sonoma County.** 56% of the responding firms began operations in the last twelve years. Additionally, new industry sectors, such as biotechnology, are emerging.
- **Local technology executives say they have a difficult time finding and training experienced scientists, engineers, and technicians.** The percentage of companies that say they have difficulty finding experienced scientists and engineers jumped from 20% in 1993 to 29% in 1998, to 37% in 2003. Technicians are still in high demand: 27% of companies indicated difficulty in hiring technicians, a 2% percentage point decrease from the 1998 survey.
- **Rising housing costs and decreasing housing options are a primary concern among tech companies.** Housing costs and housing variety were cited by 74% of all respondents as the main complaint about locating a company in Sonoma County. This percentage has more than doubled since the 1998 survey.
- **Traffic congestion continues to be a significant concern to tech firms.** 70% of the firms felt that the local commute/traffic was a disadvantage to doing business in Sonoma County. This has been an increasing concern for companies since 1993, rising from 26% in 1993 to 58% in 1998, and now to its current level at 70%.

Below is a quantitative economic overview of the 2003 Sonoma County technology industry. While profitability remains difficult for most tech companies, the long-term outlook looks promising. Some industries, such as software and biotechnology, have been able to withstand the recent economic downturn and are displaying economic resilience. The Sonoma County tech industry is innovative, giving it a critical long-term advantage.

QUANTITATIVE ANALYSIS

Presence of software and biotech firms increased

Despite telecom and manufacturing-related weaknesses, the county has had some recent success in attracting software and biotech-related firms. Demand for software has held firmer than hardware over the past two years. Biotech companies are also displaying greater resilience to the economic slowdown than other technology firms. Venture capitalists have begun turning their sights to biotechnology as a safe, long-term, high-return sector. Many biotech firms are making Sonoma County their home, including one of the largest medical device companies in the world, Medtronic AVE.

Productivity per tech employee rose 0.6%

Productivity levels are not as high as they were in 1999 and 2000, yet they have leveled off in the past two years. *

Tech employment fell 14.72%

Sonoma County tech employment is back down to levels comparable to 1999. Tech manufacturing companies experienced the greatest losses, having fallen by nearly 3,000 from its earlier 2001 peak. In comparison, California tech employment fell 8.91% and national tech employment fell 4.57%. *

Tech gross product fell 14.2%

Profitability for most tech companies remains difficult. Sonoma County tech gross product has dramatically decreased since 2000, falling 16% in 2001 and over 14% in 2002. Profitability is weakest on the tech hardware side of the industry. Medical equipment firms are largely profitable, and the outlook is boosted by the increasing demand for more medical supplies and services. *

*Source: Economy.com

KEY OPPORTUNITIES

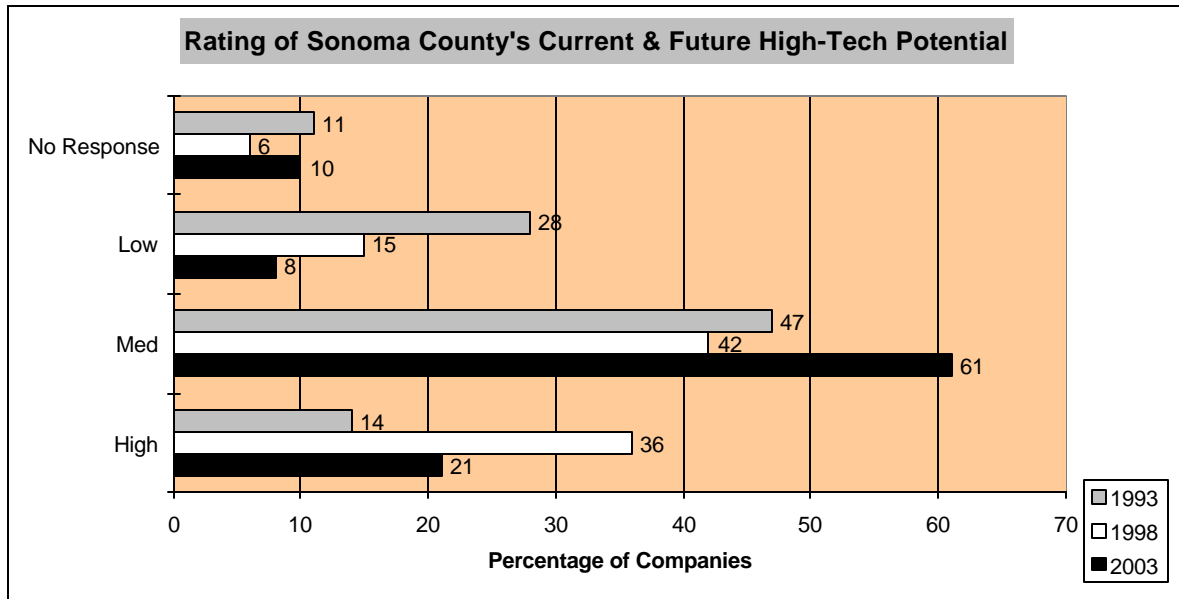
While growth in the tech sector has stalled in the last three years, most responding industry executives agree that the tech industry will return to profitable levels. The following steps may help position the region to attain this objective:

- **Expand the North Bay Technology Roundtable (NBTR)** participation to include companies in new tech sectors. One specific opportunity is to **form a Life Science/Biotechnology Special Interest Group** to address the needs of the growing biotech presence in Sonoma County.
- **Continue to support the Bachelors of Science in Engineering** proposal being presented at Sonoma State University (SSU).
- **Create more outreach education programs within the K-12 system** to increase students' interest in pursuing careers in tech related fields. The **Sonoma County LEGO Robotics Program** is one such program successfully meeting this need. Another example is the new **Biotechnology/Health Services magnet program at Piner High School**, which opened in order to provide students with the advanced knowledge and specialized training needed in today's emerging scientific and technology based fields.
- **Establish partnerships between the NBTR and other community groups** working to solve common community problems. The NBTR can **partner with groups such as the Workforce Investment Board (WIB), the Sonoma County Housing Coalition (SCHC), and Sonoma County Transportation Authority (SCTA) to address workforce, housing, and transportation issues.** Additionally, the NBTR and the EDB could form small focus groups of industry representatives to assess housing, transportation, and workforce needs. The qualitative information collected could be used to develop sound policy initiatives that benefit the technology sector.



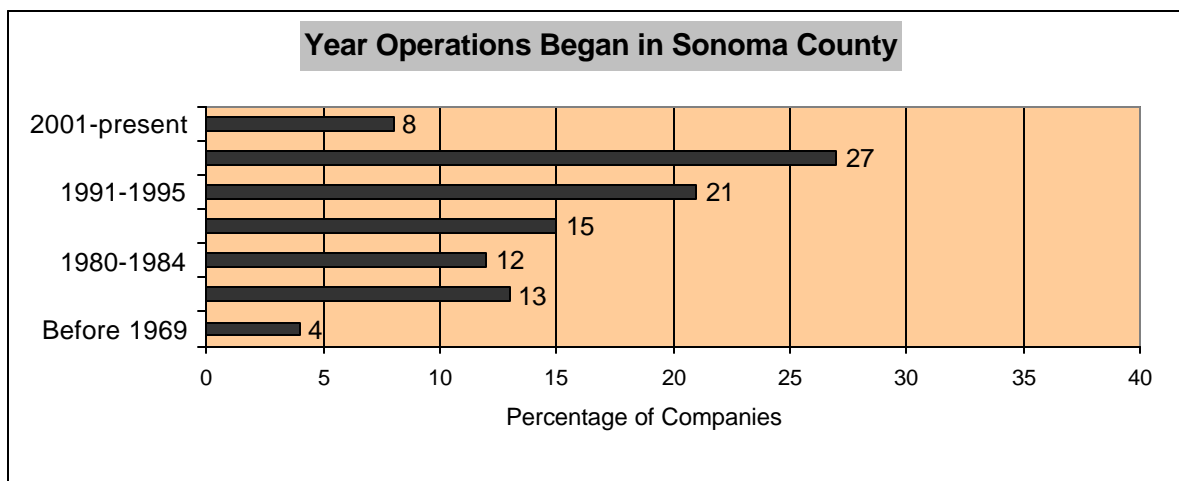
SECTION II
QUALITATIVE ANALYSIS

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



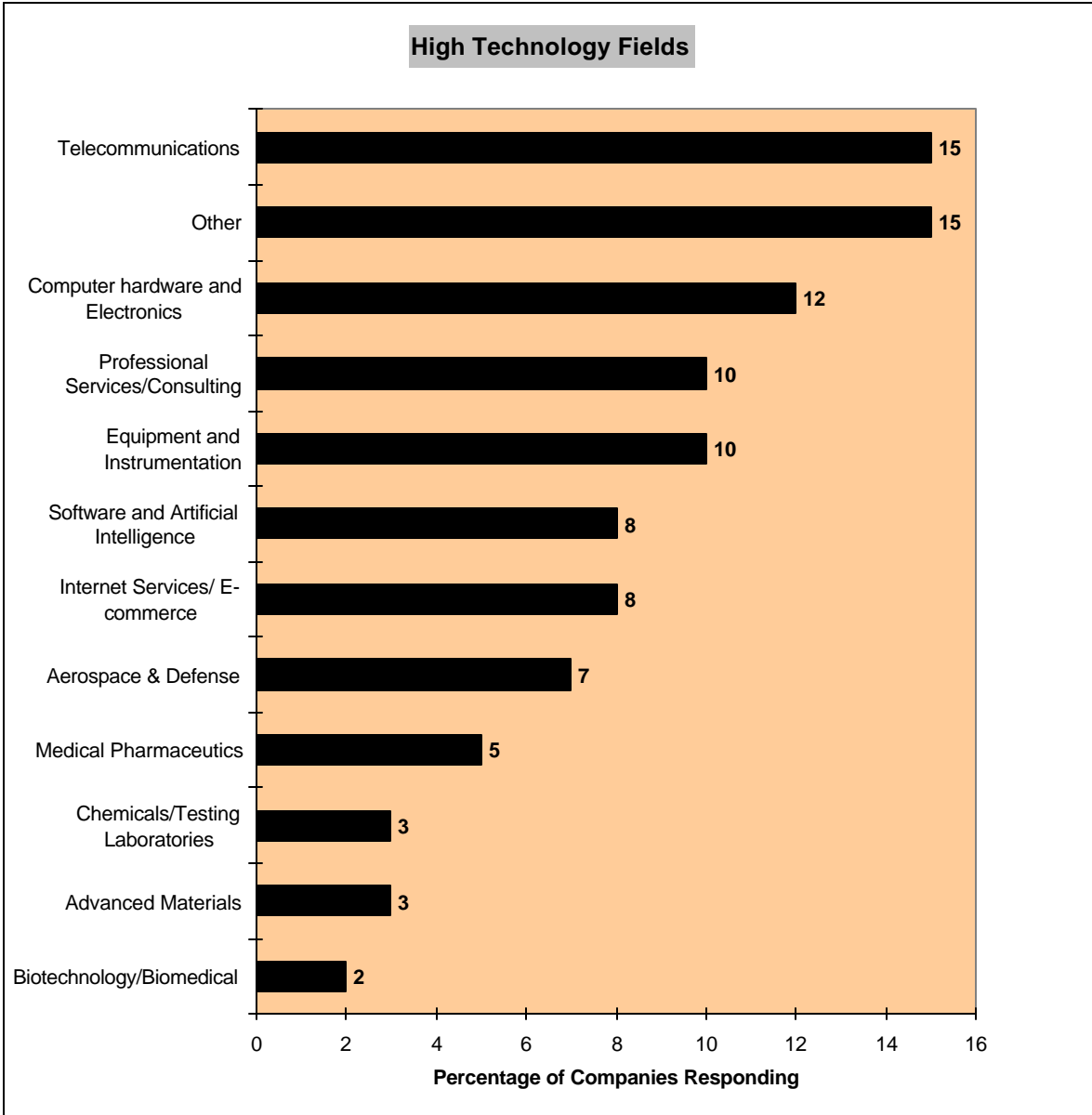
82% of the responding executives in the 2003 tech survey felt that Sonoma County had good potential (*high* and *medium*) for attracting and retaining tech industries. While this represents a 4% increased rate from the combined levels of 1998, there was a significant 15% decrease in respondents indicating Sonoma County had a *high potential* for attracting and retaining tech companies. However, only 8% of respondents felt that Sonoma County had a *low potential* for attracting and retaining business; this is a significant percentage point decrease from both the 1998 and 1993 surveys.

2. Year operations began in Sonoma County



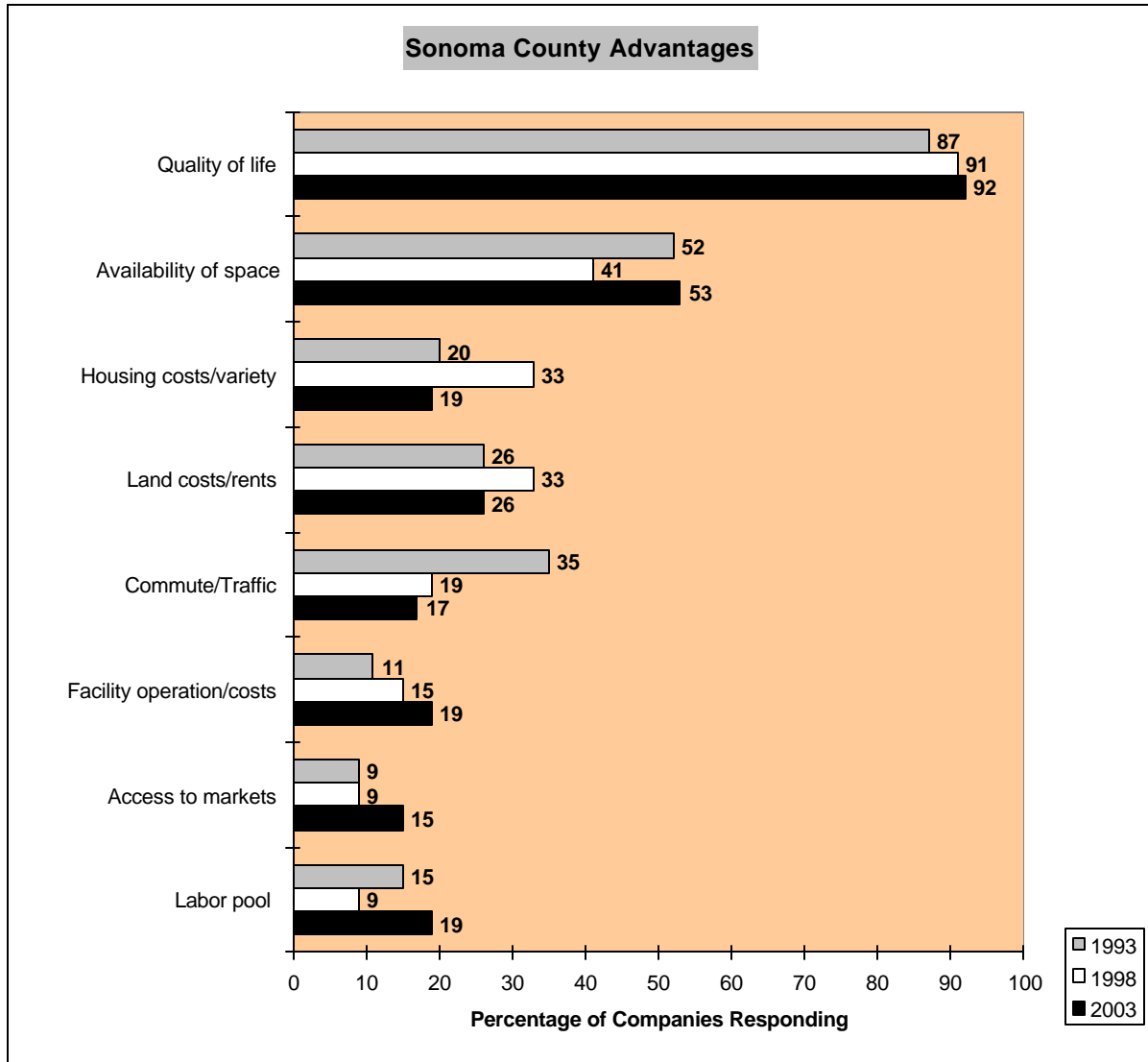
56% of the responding firms began operations within the last twelve years, the greatest percentage of those companies having been established during the tech boom of 1996 – 2001.

3. Which of the following technology areas best describes the *primary* operation of your company in Sonoma County?



The technology industry continues to diversify. The executives that responded to the 2003 survey represent companies in a broader range of tech sectors than in any of the previous surveys. Particularly notable is the growing breadth of technology companies in Sonoma County, including biotechnology and life sciences.

4. What are the major advantages of locating a tech company in Sonoma County?

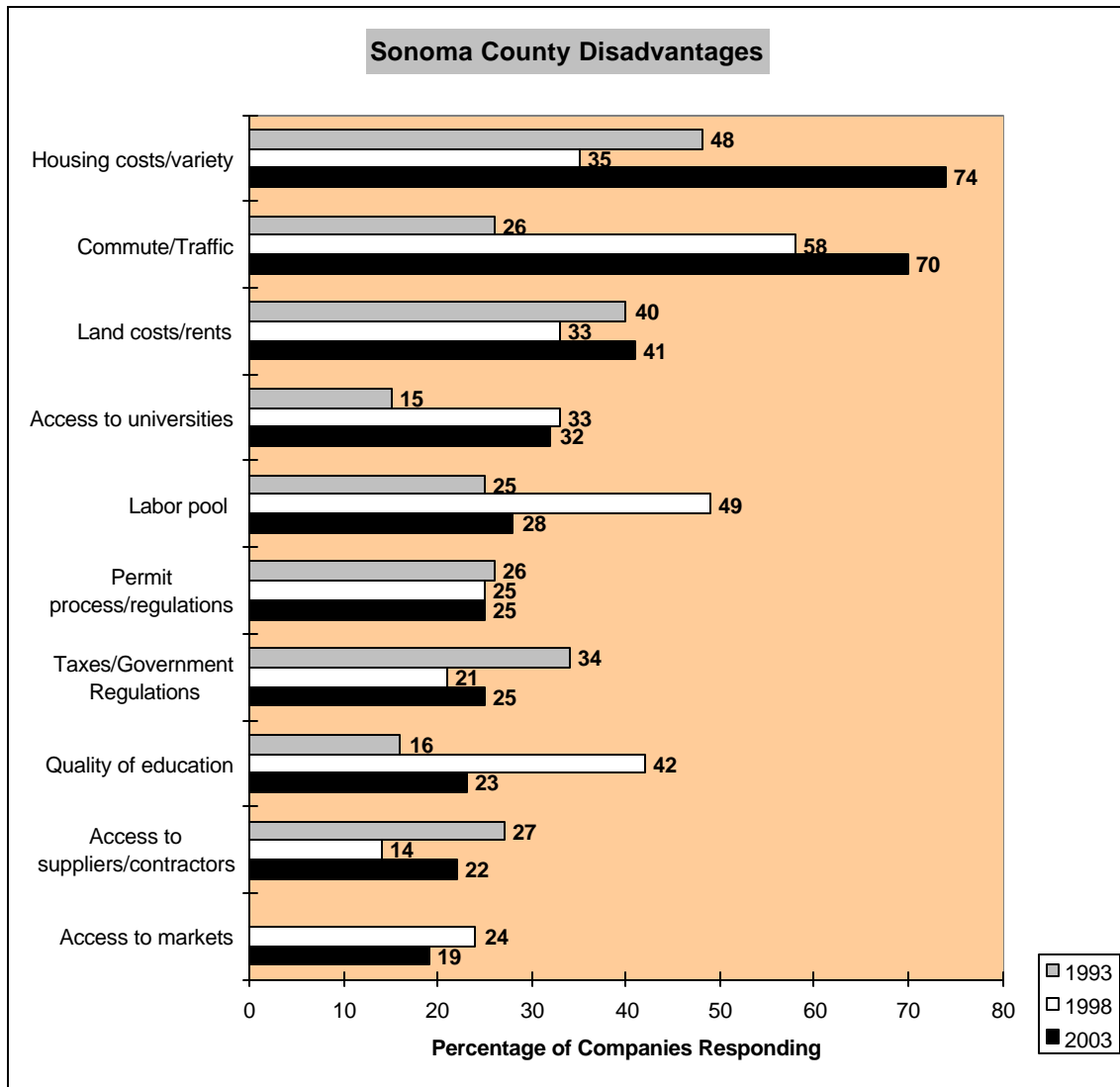


92% of the executives feel that the area's *Quality of Life* is an advantage of doing business in Sonoma County. *Quality of Life* has seen a steady increase since surveying began in 1993.

Another reason CEOs find Sonoma County attractive is the *Availability of Space*: 53% feel that 'room' to expand and/or relocate was an advantage to Sonoma County, up from a 41% response rate in 1998.

In 2003, fewer executives feel that *Housing Costs/Variety* and *Land Costs/ Rents* were advantages enjoyed by Sonoma County tech employees and businesses. *Housing Costs/Variety* experienced a negative percentage point net change of 14% since five years ago; *Land Costs/Rents* saw a net percentage point change of -7%.

5. What are the major disadvantages of locating a tech company in Sonoma County?

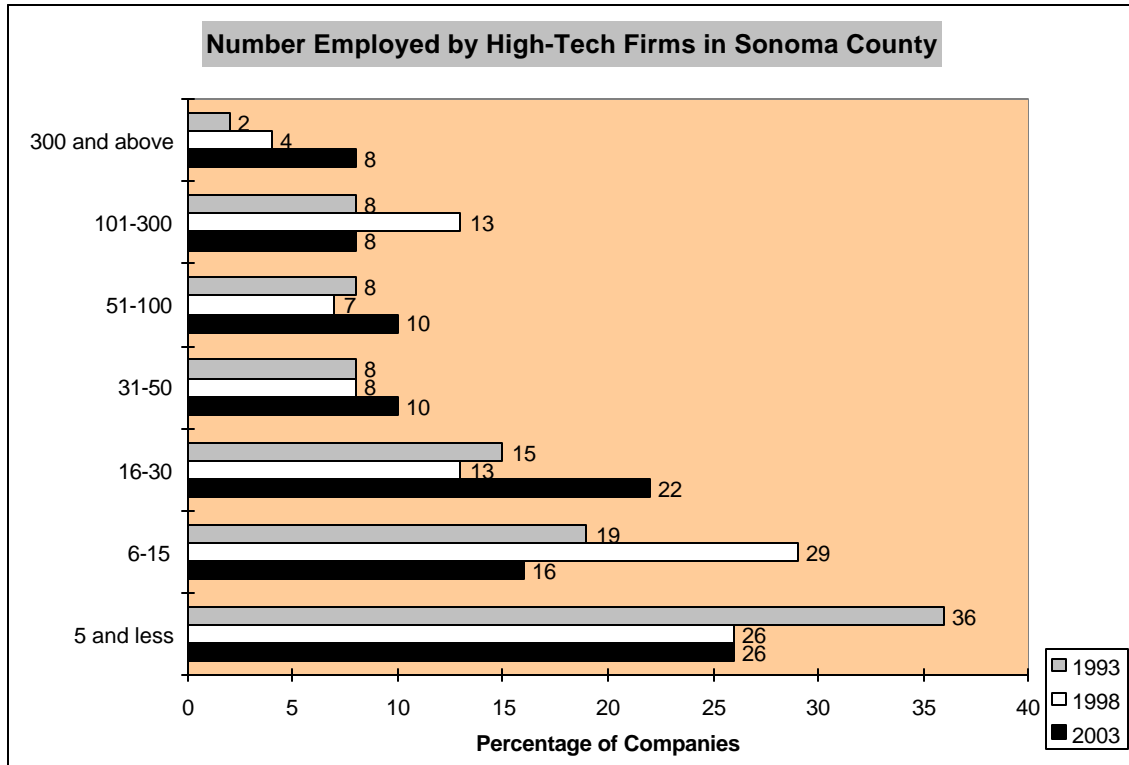


Executives were also asked to identify some of the negative aspects of locating their operations in Sonoma County. The most cited complaint was *Housing Costs/Variety* at 74%. This percentage has more than doubled since the 1998 survey.

70% of the CEOs felt that the local *Commute/Traffic* situation was a disadvantage to doing business in Sonoma County. This has been an increasing concern for companies since 1993, rising from 26% in 1993 to 58% in 1998, and now to its current level, 70%.

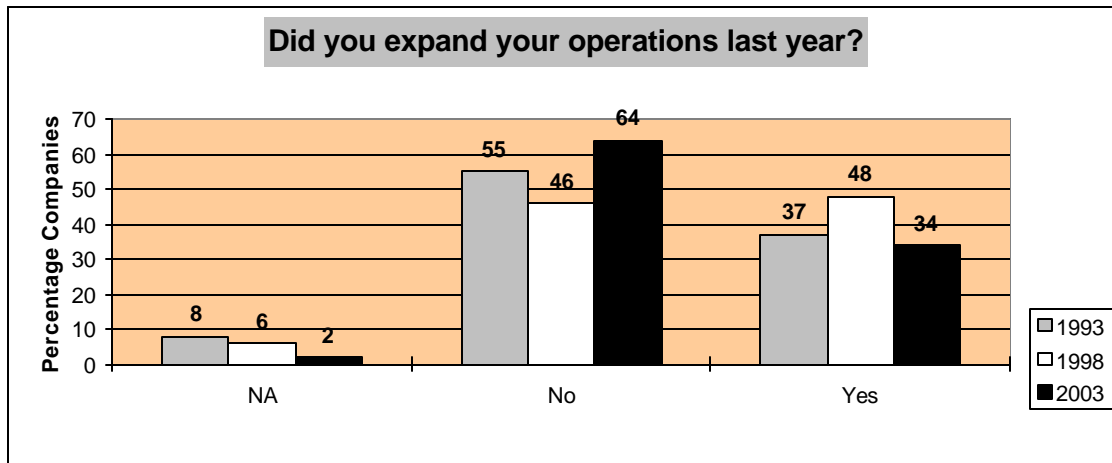
Respondents in the 2003 survey were not nearly as concerned about the *Labor Pool* and *Quality of Education* as they were in 1998. Both categories have experienced significant decreases since that time.

6. Number of employees in Sonoma County



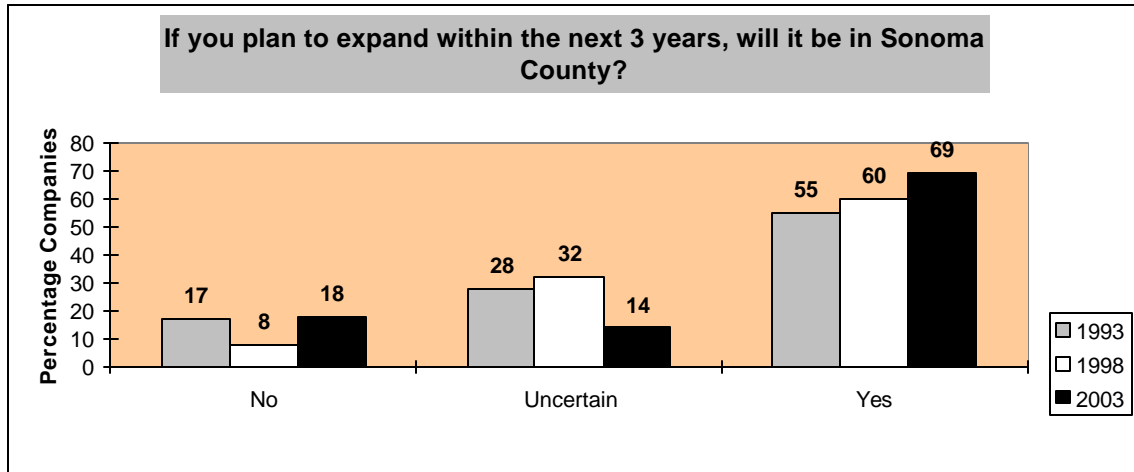
In 1993, the greatest number of firms, 36%, had **5 or fewer employees**. The greatest number of firms in 1998, 29%, had **6-15 employees**. The data from the 2003 survey shows that the **16-30 employees** range experienced the greatest growth since 1998, up from 13% to 22%. The technology industry is maturing in Sonoma County.

7. Did you expand your operations last year?



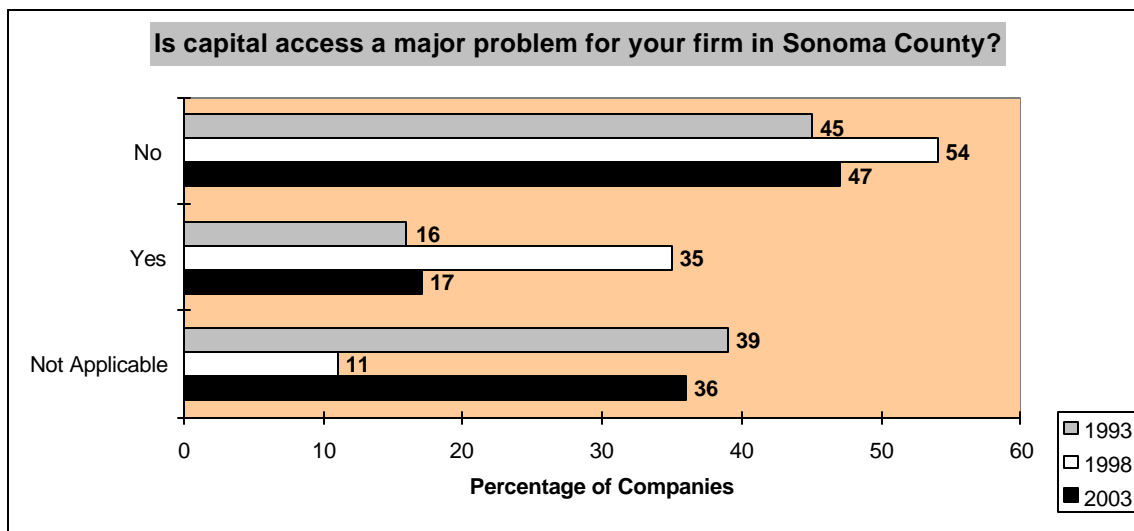
Fewer firms expanded their operations in 2003.

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



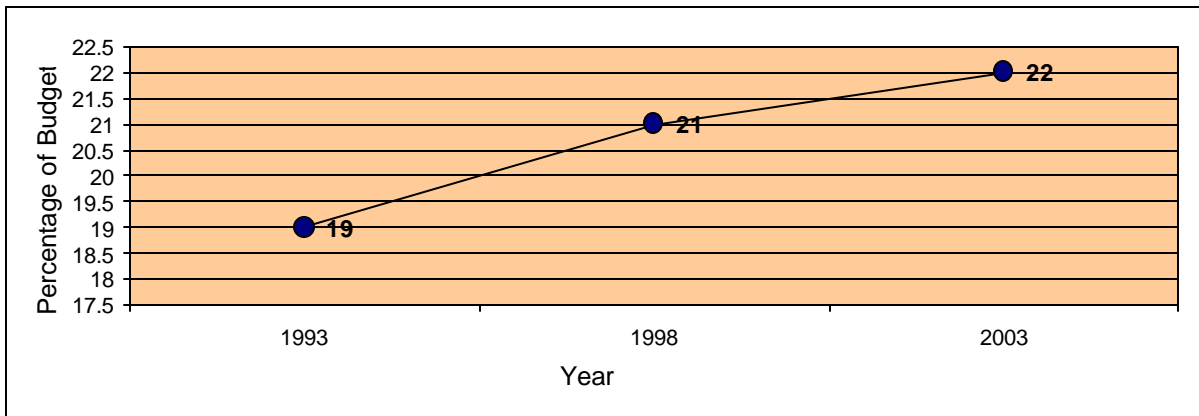
Despite the drawbacks noted on the previous pages, if companies were to expand in the next three years, 69% of the responding firms would do so within Sonoma County. This is a net percentage point increase of 9% since 1998, and a 14% percentage point increase from 1993. Many companies indicated they would do so out of convenience since their businesses are already established, while others feel that the quality of life enjoyed by Sonoma County residents outweighs the disadvantages of locating a company here. However, if companies did expand, 18% of respondents would not plan on growing their company within Sonoma County, a net percentage point increase of 10% since 1998.

9. Is capital access a major problem for your firm?



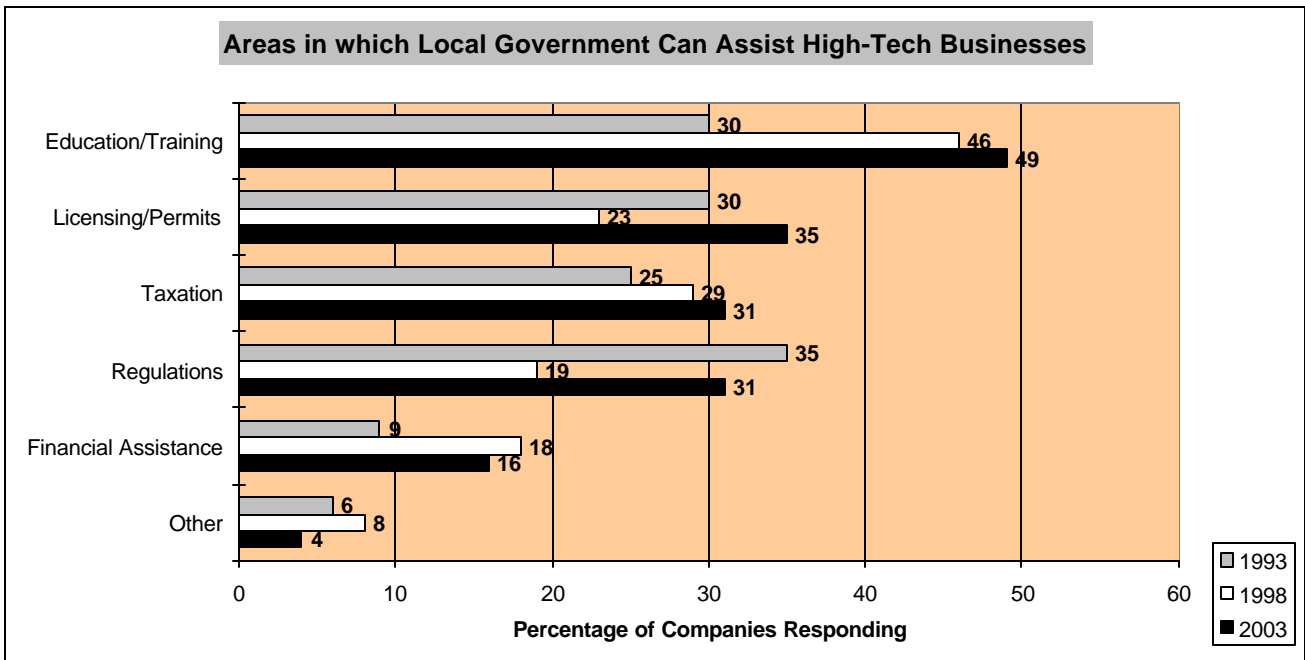
Fewer respondents said access to capital was a major problem to their companies than in the 1998 survey. However, this data may correspond to a significant increase in the percentage of respondents indicating the question was not applicable to them at this time.

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



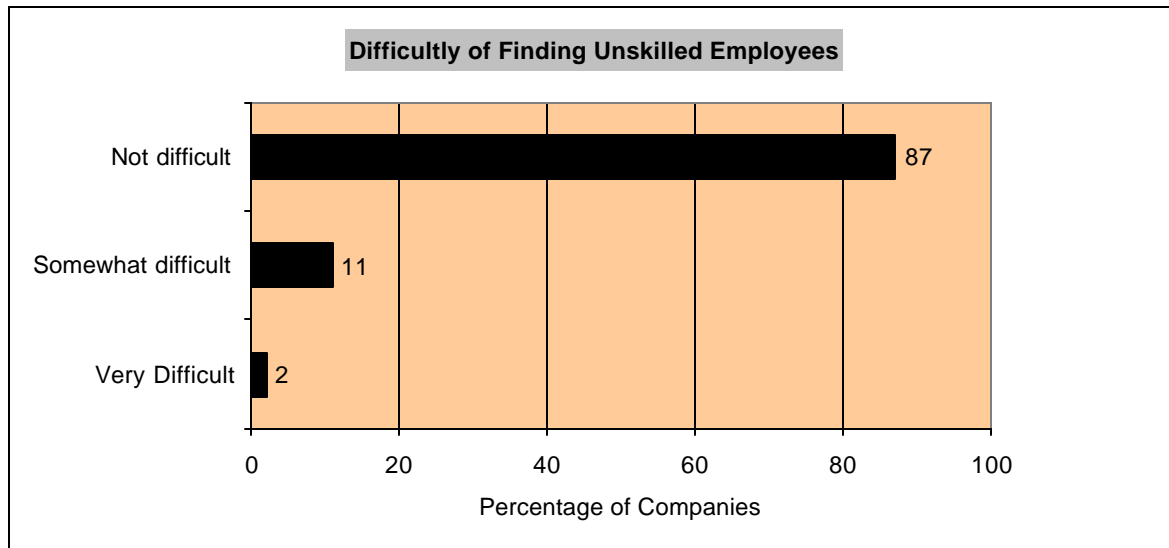
Firms devote an average of 22% of their resources toward research and development. This percentage is slightly above the 1998 and 1993 report's average of 19% and 21%, respectively.

11. In which areas do you feel local government could help to further assist tech companies?



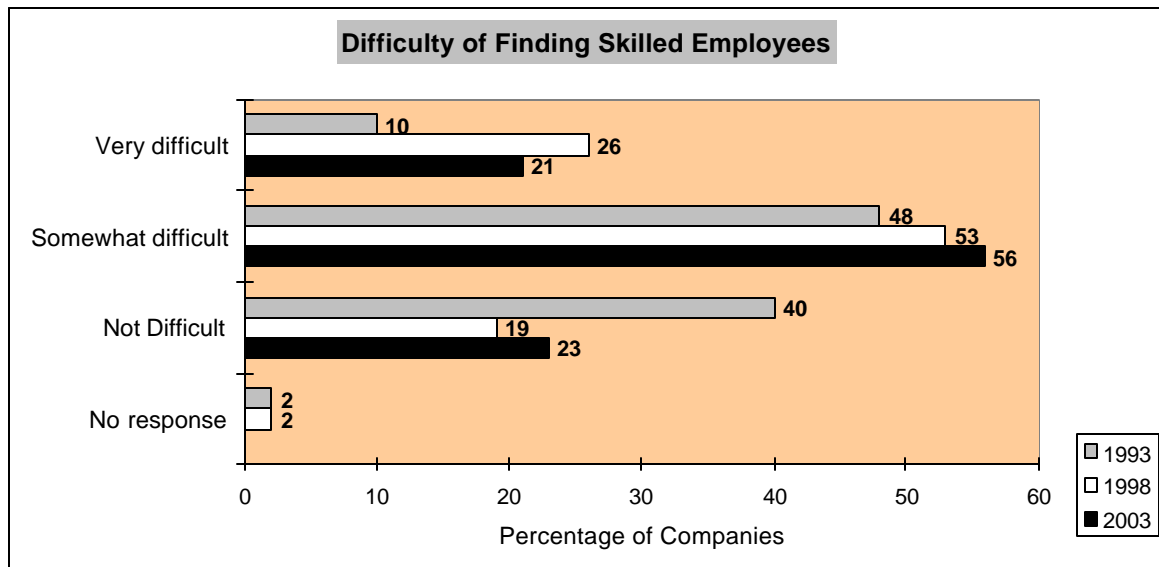
49% of the firms consider *Education & Training* to be the most critical area in which local governments can assist, experiencing a net percentage point increase of 3% since the 1998 survey. 35% of respondents report that *Licensing/Permits* should be streamlined, and 31% of the firms say that *Taxes* and *Regulations* are problematic.

12. How difficult is it for your firm to find *unskilled* employees?



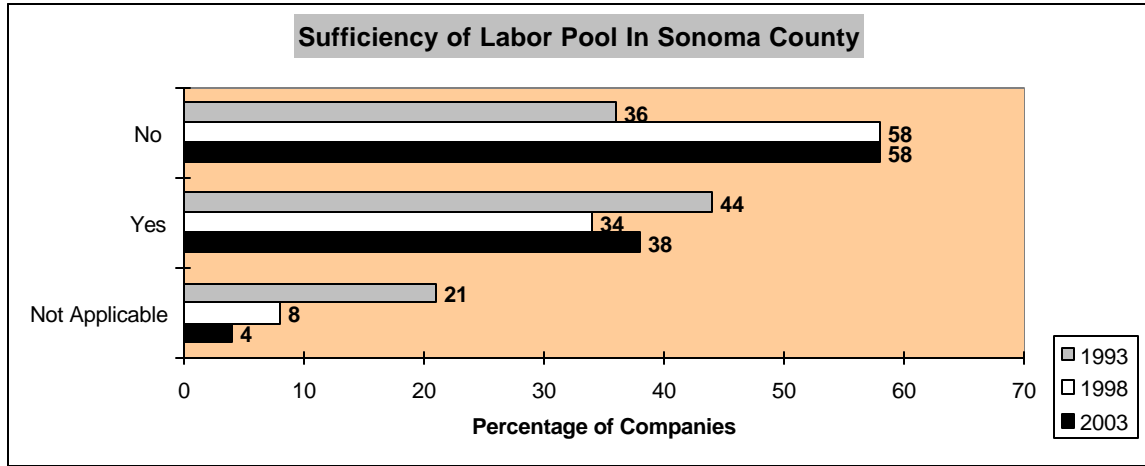
In addition to asking questions about recruiting skilled employees, the 2003 survey included a question about the difficulty of hiring unskilled employees. As illustrated by the graph, nearly all firms stated that finding unskilled employees was *not difficult*, 87%.

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



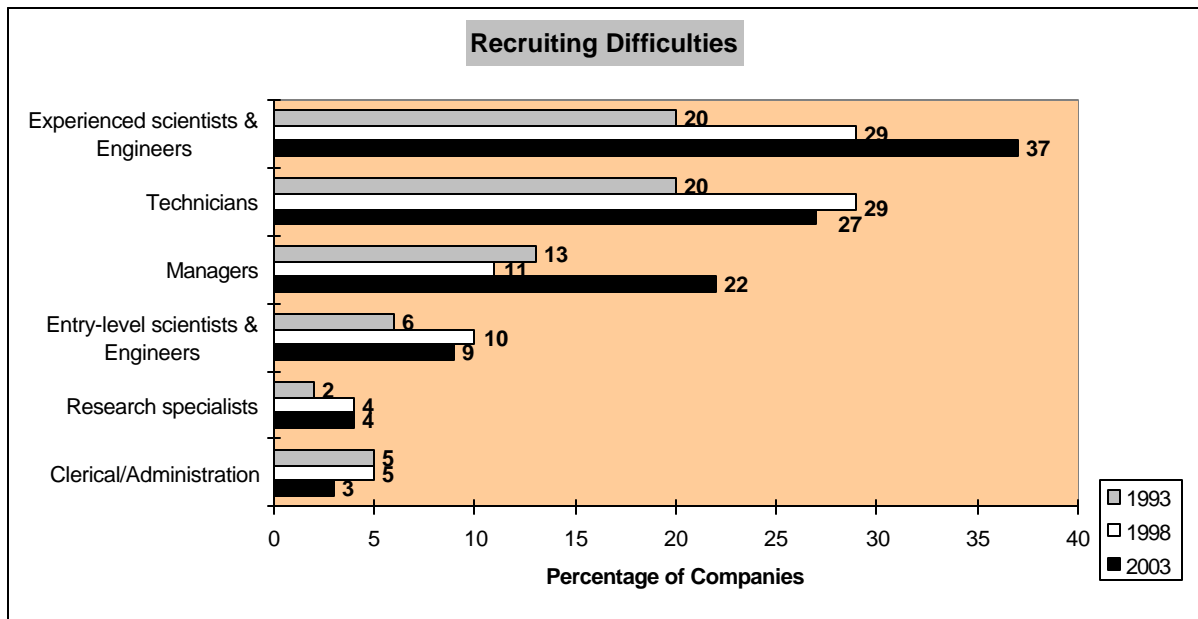
The greatest percentage of companies reported that it was *somewhat* difficult to find skilled employees, increasing from 48% in 1993, to 53% in 1998, and now to 56% in 2003. In comparison, in all three years a smaller percentage of respondents reported that it was *very difficult* to find skilled employees; a smaller percentage of companies selected this category in 2003 than they did in 1998. Despite this trend, in 2003 only 23% of respondents reported that it was *not difficult* to find skilled employees compared to 40% ten years ago.

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



The majority of respondents, 58%, claim that Sonoma County did not meet their hiring needs in 2003; this percentage has not changed from the 1998 survey. However, there is a small percentage point increase, 34% to 38%, among executives that indicate a greater satisfaction with the county’s labor pool.

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



For local technology companies, *Experienced Scientists & Engineers*, skilled *Technicians*, and *Managers* are the most difficult employees to recruit. *Experienced Scientists & Engineers* have become increasingly more difficult to hire since surveying began in 1993; they have seen percentage point jumps from 20% in 1993 to 29% in 1998 to 37% in 2003. *Technicians* are still in high demand as 27% of companies indicated difficulty in hiring people for these positions, a small 2% net decrease from the 1998 survey. Firms also report a greater difficulty in hiring *managers*.

16. Please rank the county’s educational institutions as they relate to your firm’s needs.

Responses from 1993

| | Poor | Fair | Good | Excellent |
|---------------------|-------------|-------------|-------------|------------------|
| Primary | 7% | 15% | 26% | 0% |
| Secondary | 8% | 20% | 22% | 0% |
| Trade/Tech | 11% | 12% | 25% | 0% |
| Junior Coll. | 2% | 15% | 39% | 15% |
| SSU | 11% | 26% | 26% | 26% |

Response from 1998

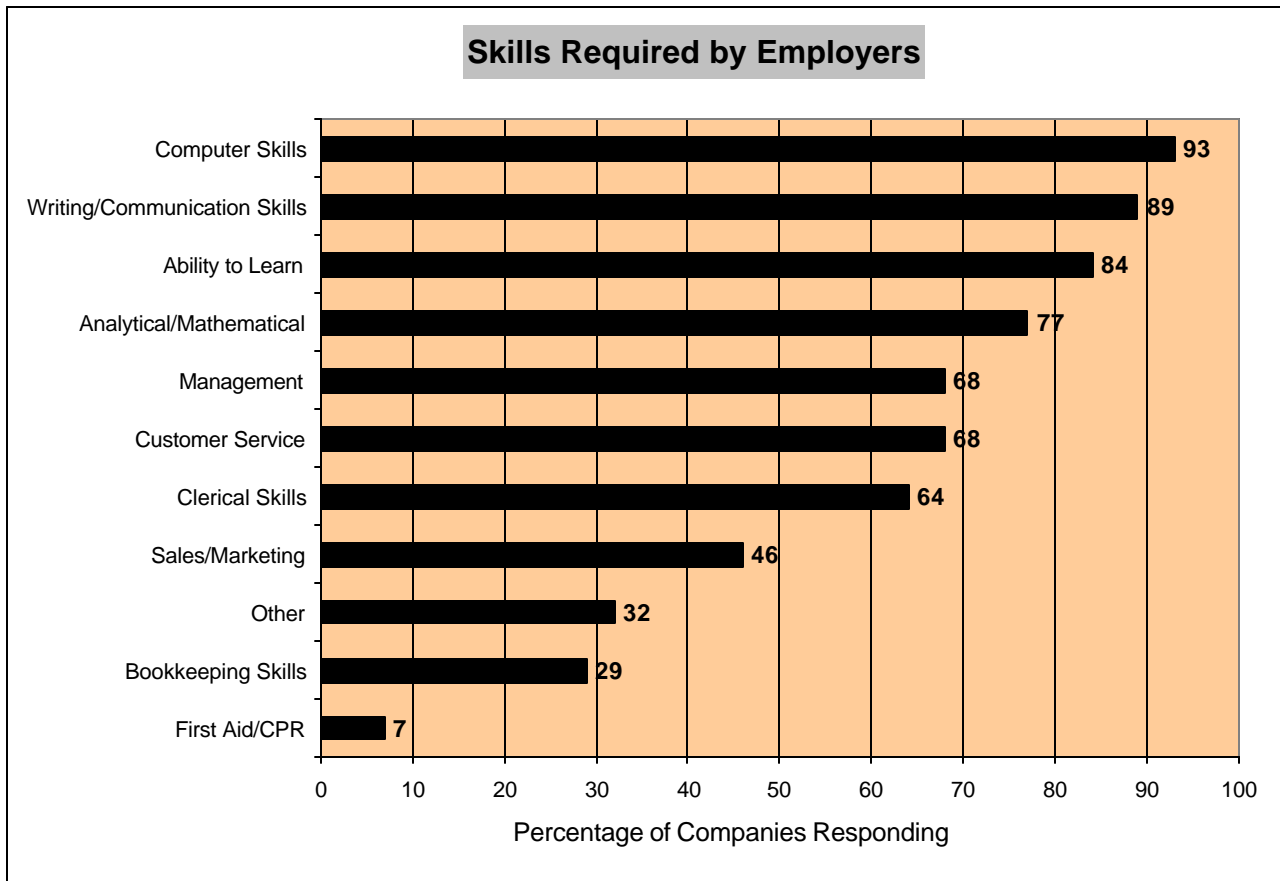
| | Poor | Fair | Good | Excellent |
|---------------------|-------------|-------------|-------------|------------------|
| Primary | 32% | 26% | 42% | 0% |
| Secondary | 32.50% | 30% | 37.50% | 0% |
| Trade/Tech | 29% | 34% | 37% | 0% |
| Junior Coll. | 6% | 18% | 58% | 18% |
| SSU | 12% | 31% | 41% | 16% |

Response from 2003

| | Poor | Fair | Good | Excellent | NA |
|---------------------|-------------|-------------|-------------|------------------|-----------|
| Primary | 6% | 18% | 24% | 4% | 47% |
| Secondary | 6% | 22% | 26% | 2% | 44% |
| Trade/Tech | 18% | 25% | 27% | 6% | 24% |
| Junior Coll. | 9% | 13% | 50% | 19% | 9% |
| SSU | 17% | 34% | 34% | 9% | 6% |

The 2003 survey included a *NA—not applicable* option for companies to choose from when ranking their satisfaction level with the Sonoma County education system. Since this option was widely selected at the *Primary*, and *Secondary* levels, it is difficult to compare the data at those levels. Technology company executives were dissatisfied with Sonoma County’s Trade/Tech schools, with each drawing a *Poor* or *Fair* response from more than 43% of company executives. The Santa Rosa Junior College was viewed much more positively, as it garnered a *Good* or *Excellent* from 69% of the firms. However, this is a decreased level of satisfaction from the 1998 survey. It seems that the companies were slightly less pleased with the education offered at *SSU* in 2003 than in 1998, as their *Good* or *Excellent* rating dropped from 57% to 43%.

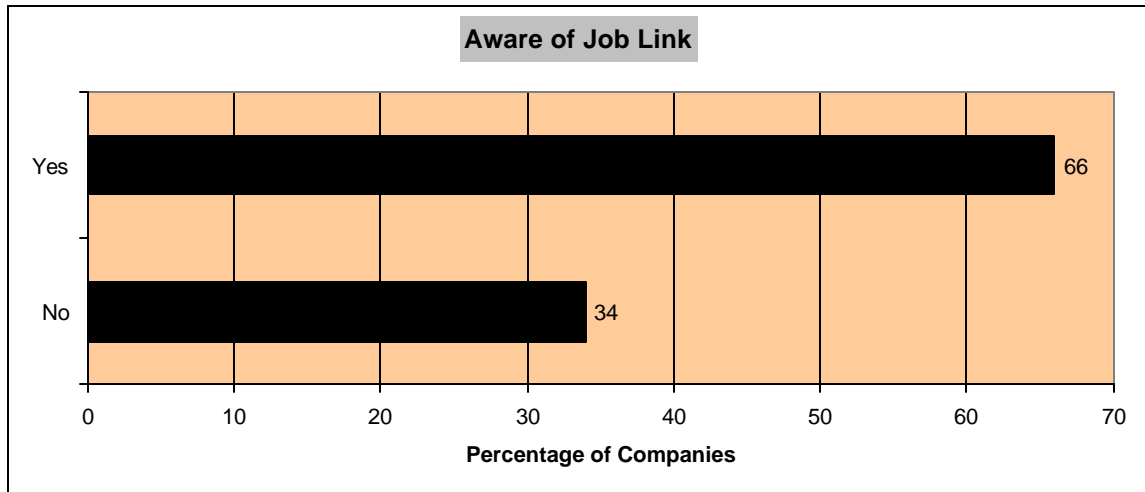
17. What type of skills do you require from your employees?



The 2003 survey included a question about the skills tech employers look for from their prospective employees. Employers were given a list of skills and told to choose up to five of the options.

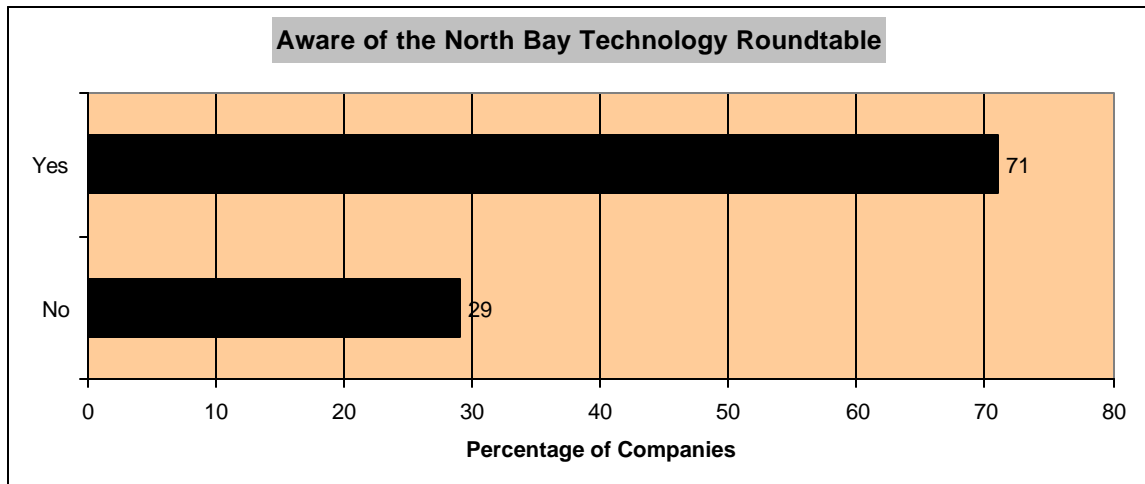
Computer and *Analytical/Mathematical* skills were selected by 93% and 77% of respondents, respectively. However, some of the “soft” skills, *Writing/Communication* and *Ability to Learn*, were listed just as frequently as some of the technical skills, being chosen by 89% and 84% of the respondents.

18. Are you aware of Sonoma County Job Link?



Job Link is a "one-stop" resource for firms' employment-related needs. Its goal is to provide job seekers and employers easy access to information and services that are available in Sonoma County. Of those executives who responded to the survey, 66% of them are aware of Job Link.

19. Are you aware of the North Bay Technology Roundtable?



After the completion of the report that included the data from the 1998 survey, the EDB suggested that a local organization of tech executives, educators, and tech trade groups be started to address the needs of the tech community in the area, namely the North Bay Technology Roundtable. Three years after its conception, 71% of the companies that responded to the survey know of the organization.



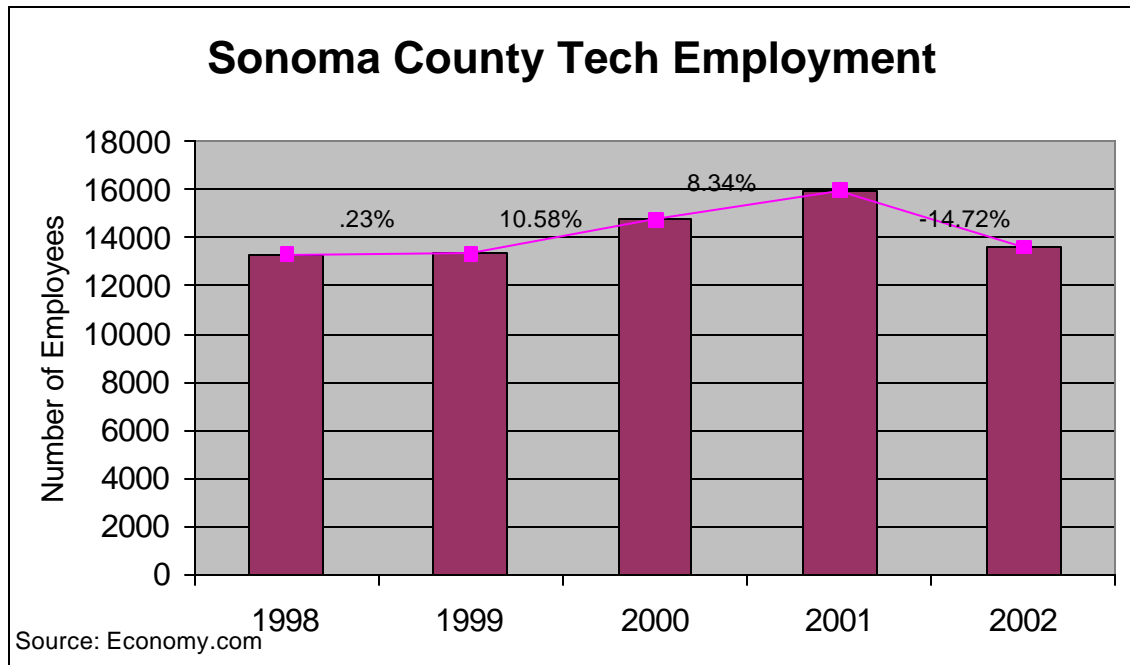
SECTION III
QUANTITATIVE ANALYSIS

BACKGROUND

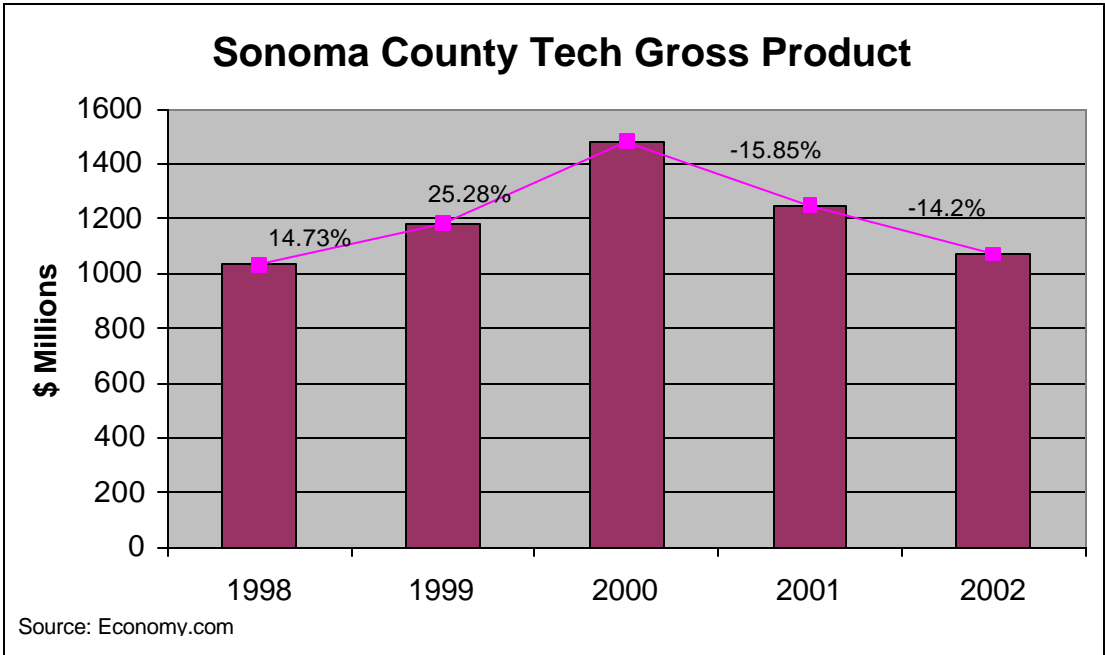
The quantitative section of this report updates the information that was previously presented by the EDB in its 2000, 2001, and 2002 Technology Reports. As such, the first series of graphs depict comparisons between the number of tech employees in Sonoma County, and the percent growth or decline between years.

Graphs showing state and national tech employment, investment, Initial Public Offering (IPO), and patent trends and their annual percentage change are also included. This will make it easier for readers to compare the trends in Sonoma County to those occurring at the state and national level. In most cases the graphs include yearly figures over a five-year time span, between 1998 and 2002. However in some circumstances, the 2002 data has not yet been compiled or released; this report provides the statistics that are available.

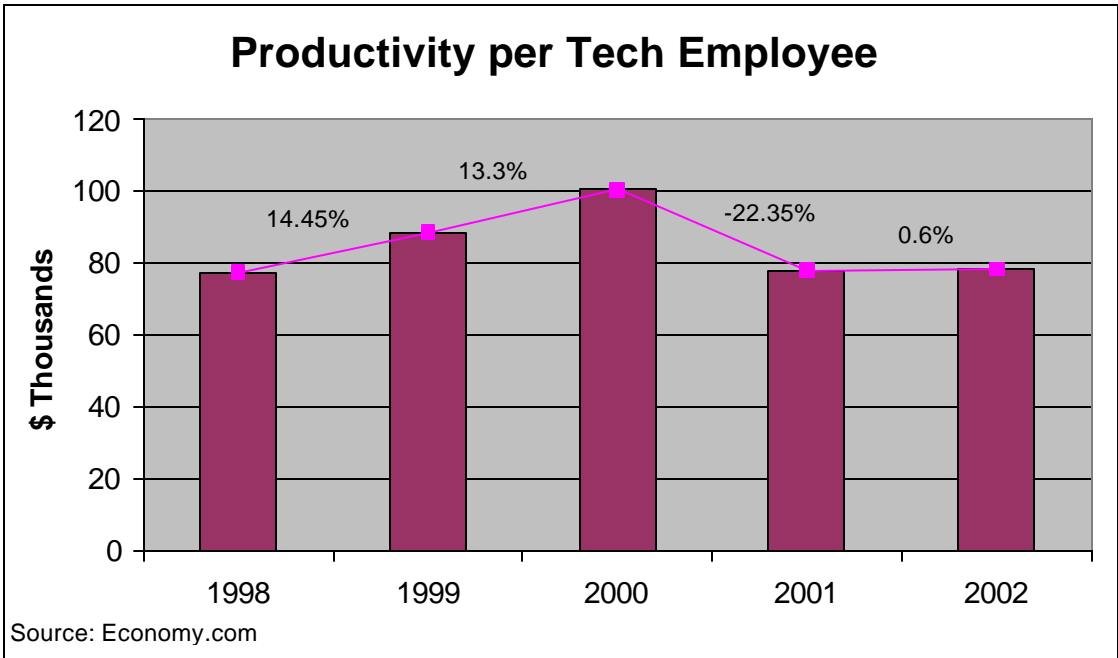
Respondents to the 2003 Technology Survey indicated several concerns about the future of tech companies in Sonoma County. Education, housing costs, and traffic issues were challenges to tech sustainability that needed to be addressed. Several comparative graphs are included relating the trends in these areas to the tech industry.



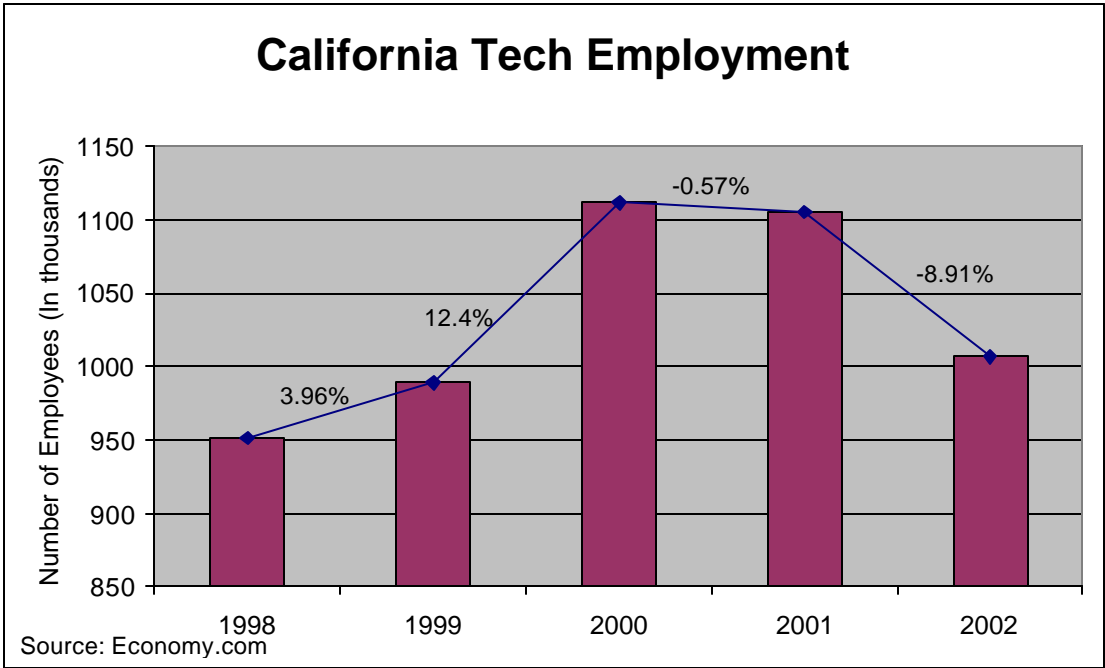
Sonoma County tech employment is back down to levels comparable to 1999. Tech manufacturing companies experienced the greatest losses. While sales and profits began decreasing in late 2000, most companies avoided the layoff of employees until late 2001.



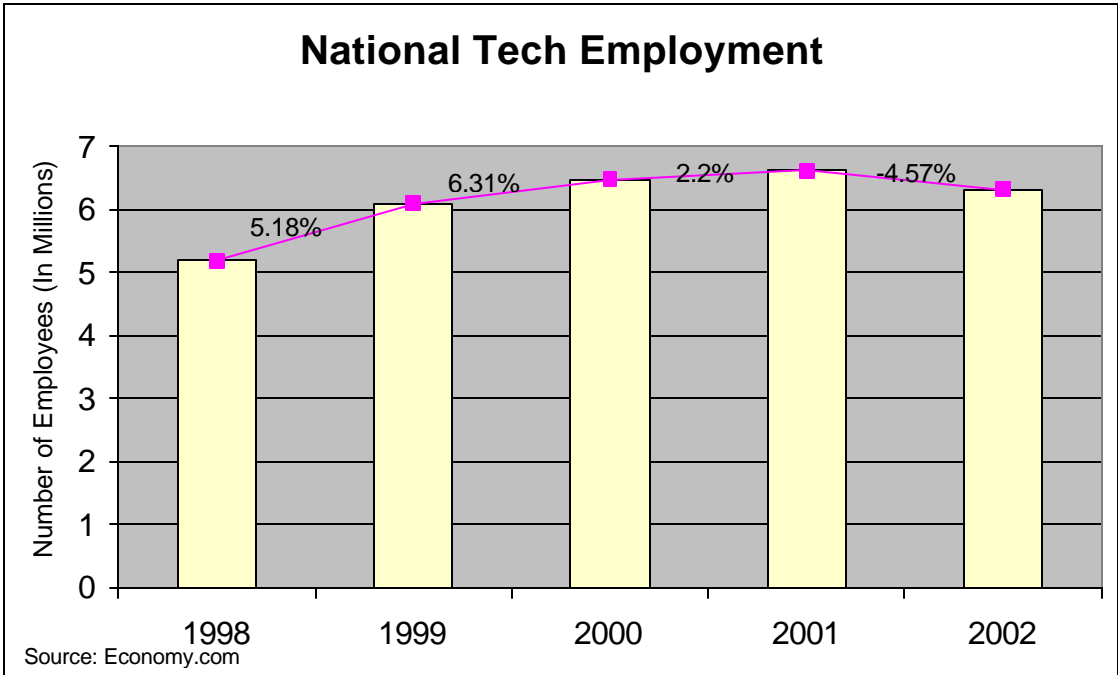
The tech industry in Sonoma County has seen a dramatic decrease in gross product since 2000, experiencing 16% and 14% losses in 2001 and 2002 respectively.



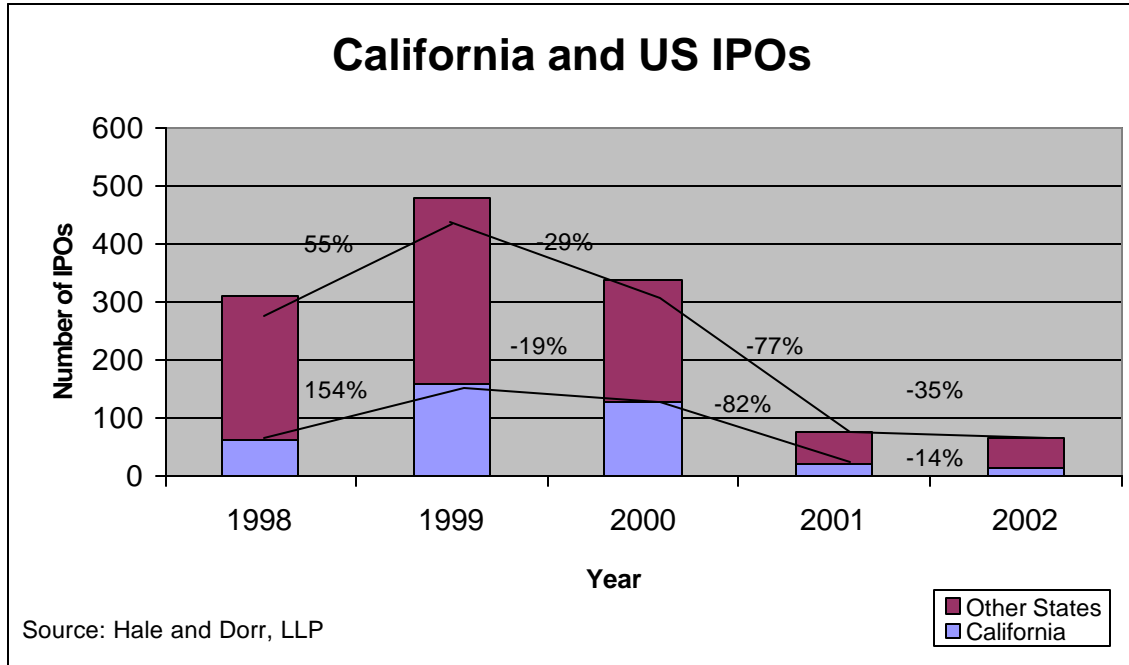
Productivity levels are not what they were in 1999 and 2000, but they have leveled in the past two years primarily because of layoffs.



Although California companies were the beneficiaries of a large part of the tech boom, they have also felt the tech bubble burst more profoundly than most states.

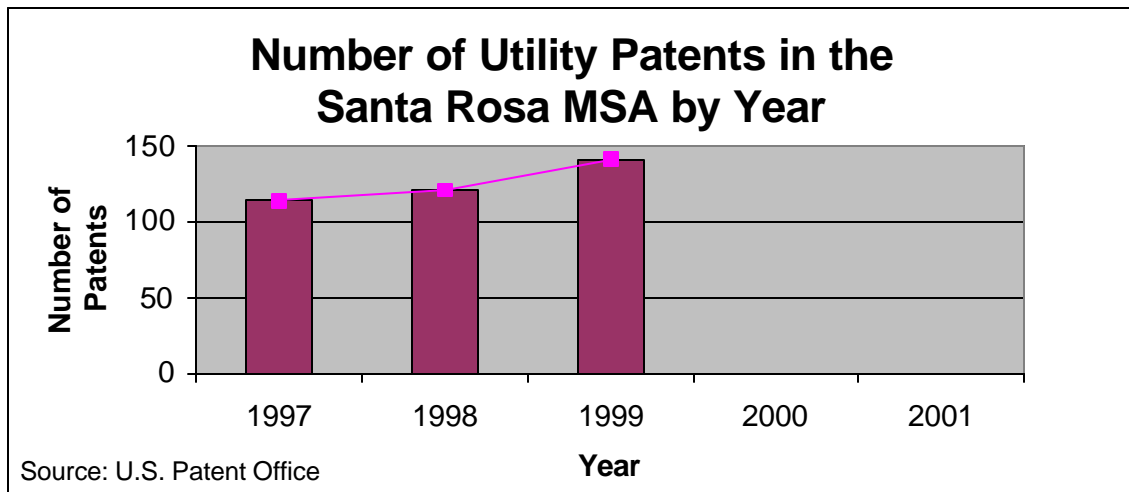


National tech employment growth proved to be steadier than the growth in California between 1998 and 2001. The employment levels in 2002 were comparable to those in 2000, but the U.S. still experienced losses at the beginning of 2003.



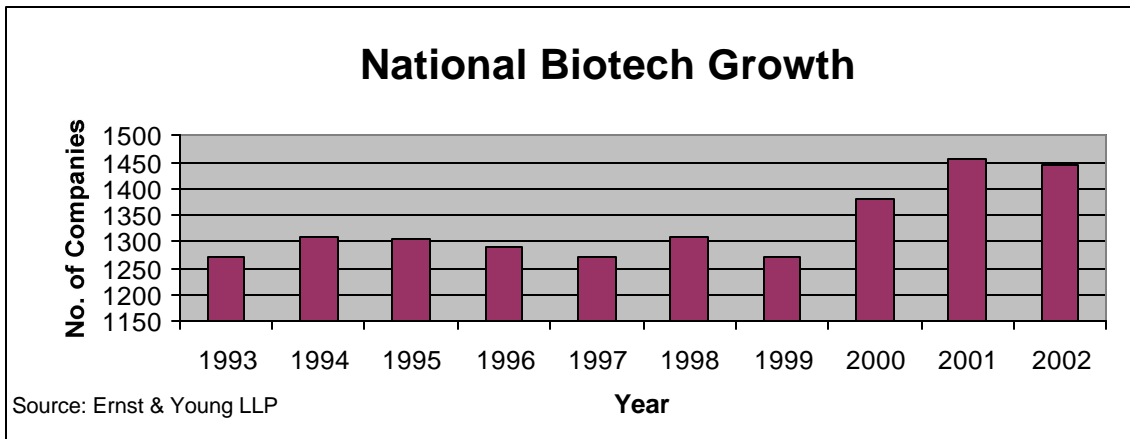
The number of Initial Public Offerings (IPOs) in the United States and in California has rapidly declined in the last four years. This is significant because public offerings are used as indicators of economic growth and expansion.

A very large percentage of IPOs came from technology-oriented companies during the last five years. 1999 was dubbed the year of Internet Public Offerings, because more than 80% of IPO companies were internet-startups. In 2000, 67% of all IPOs were technology based, in 2001, 45% and in 2002, 37%. IPOs of Sonoma County companies in the last few years have been non-existent.

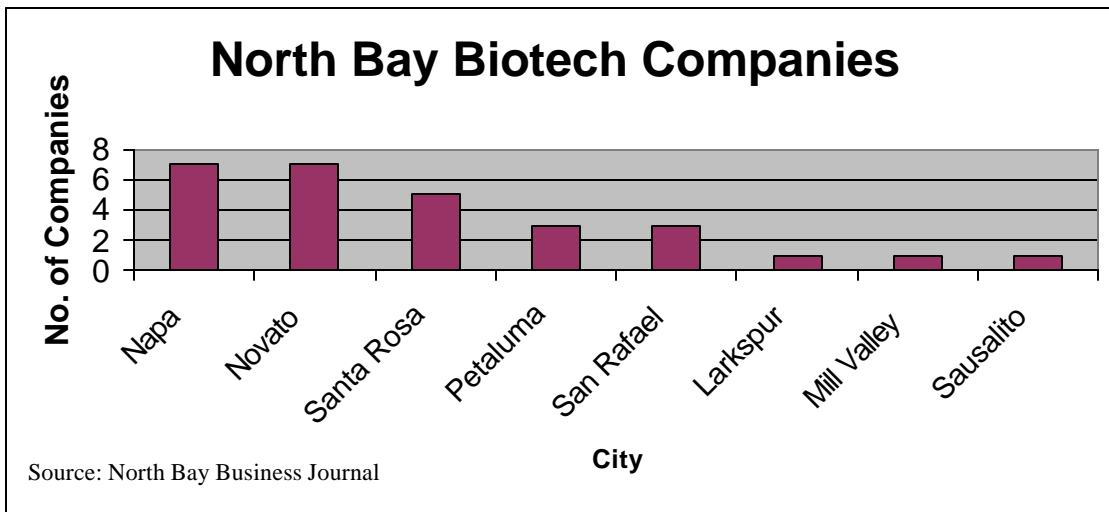


The U.S. Patent Office has not released an updated report indicating the number of utility patents issued to companies or individuals in the Santa Rosa MSA. Their current information is available functioning through the year 1999.

The biotechnology industry has accelerated at a remarkable pace in the past decade. Despite the current market depression, U.S. biotech firms are showing economic resiliency. Companies that have survived the economic downturn may be those that are better able to adapt and seize new opportunities. Innovative firms often become leaders in the industry, creating new therapies that help improve health. For example, according to Ernst & Young, in the next few years the biotechnology industry will make significant biological discoveries, and will continue to grow. *



The number of biotech companies in the United States decreased slightly between 2001 and 2002. Unlike other technology industries, however, the biotech industry has been able to withstand the market slump.

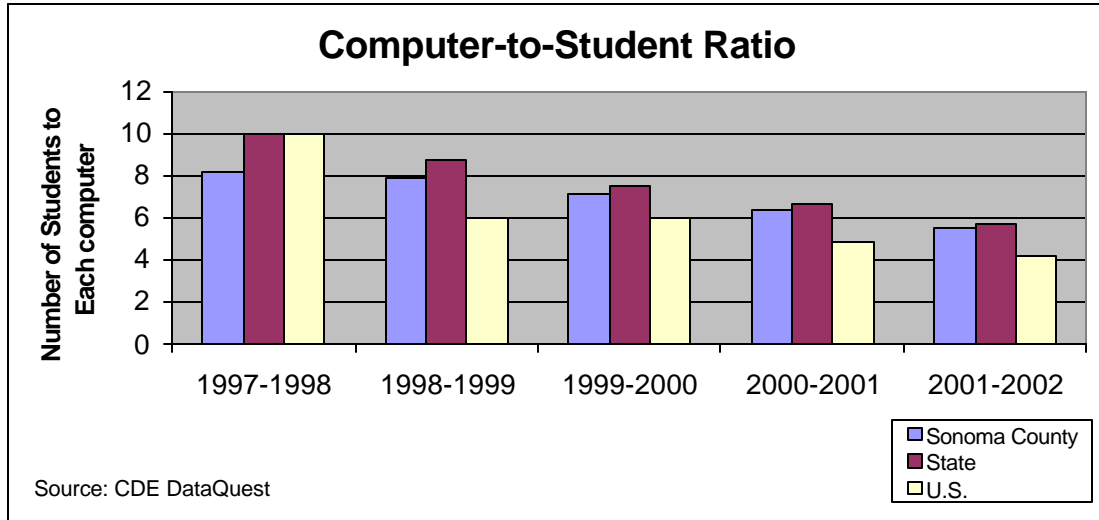


The North Bay is home to upwards of 30 biotechnology companies. Comparative data shown in this chart indicates that a significant number of North Bay biotech companies choose to operate in Sonoma County.

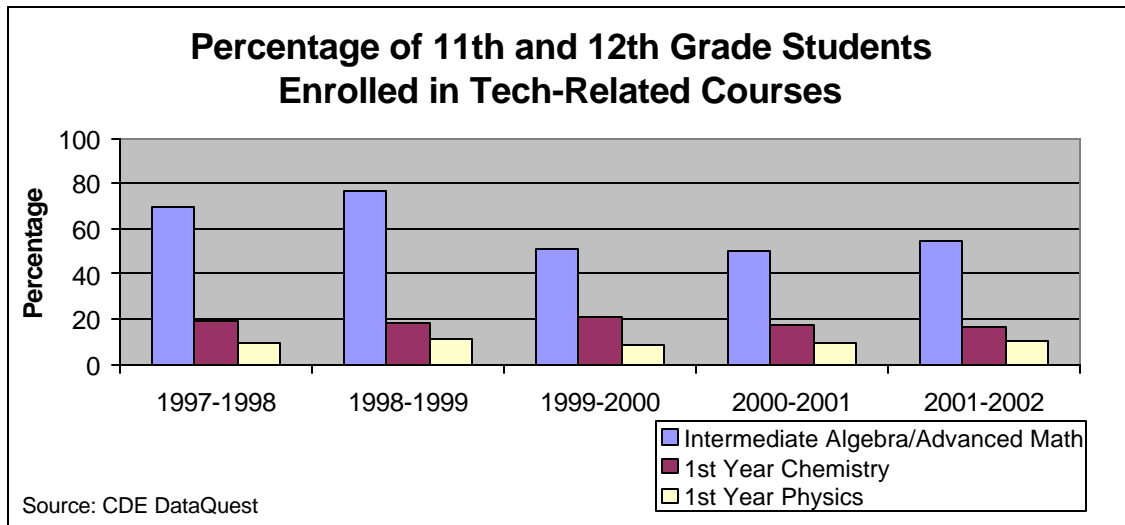
* Source: *Resilience, Americas Biotechnology Report 2003*

Education

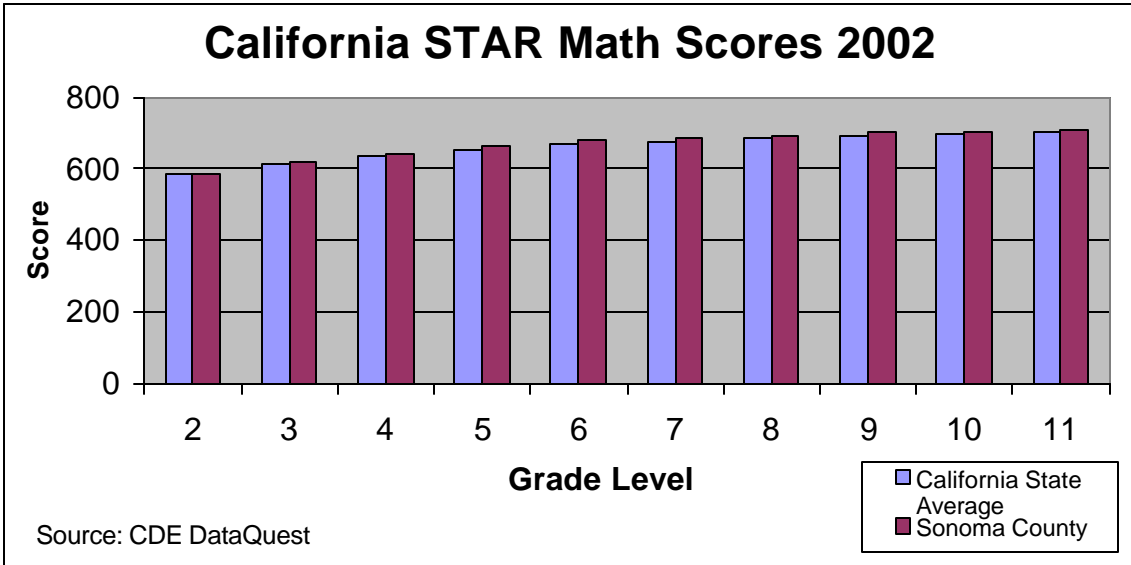
Education continues to be one of companies' primary concerns in reaffirming Sonoma County as a viable area for the technology industry. Nearly 50% of all survey respondents felt that local government could best help their organization by improving the quality of the education. The following series of graphs is meant to provide insight into the current condition of the education offered by Sonoma County schools as it relates to the tech industry.



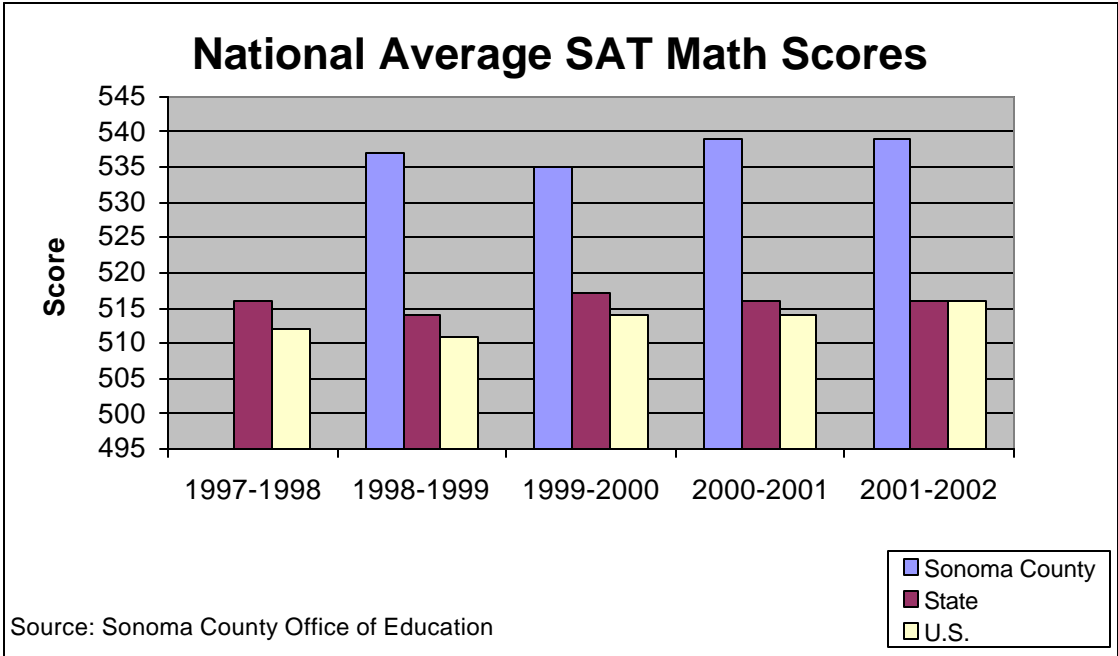
Sonoma County students are losing their competitive computer advantage when comparing the local ratio of students per computer to the statewide and country ratio. While Sonoma County students still fare better than the average California student, the gap is narrowing.



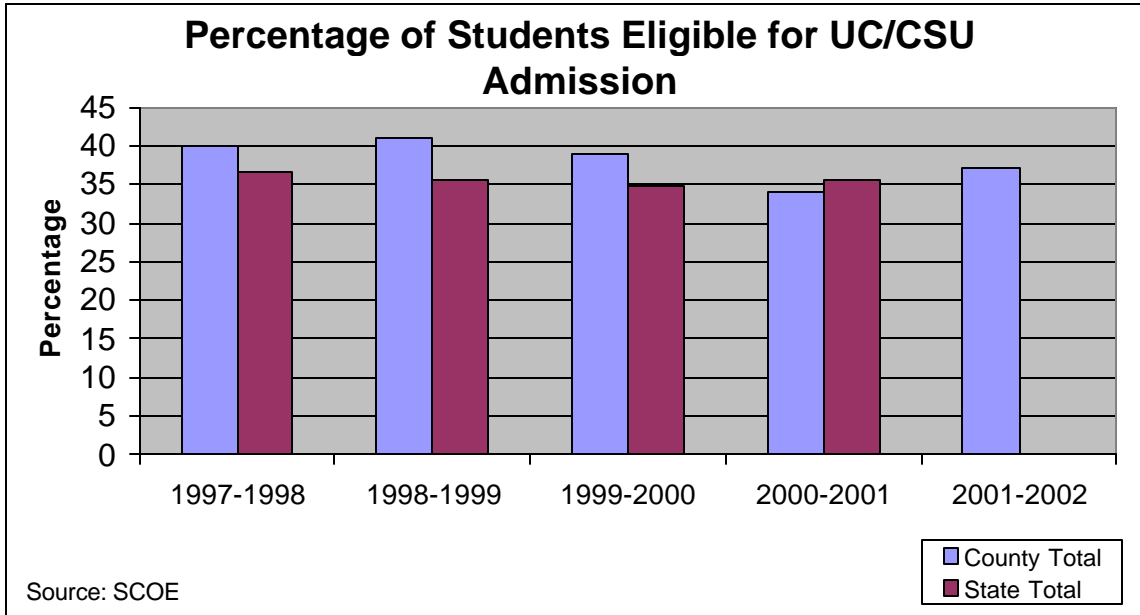
A smaller percentage of students are enrolled in intermediate algebra/advanced math now than four years ago. Furthermore, only a low percentage of 11th and 12th graders take basic chemistry and physics courses.



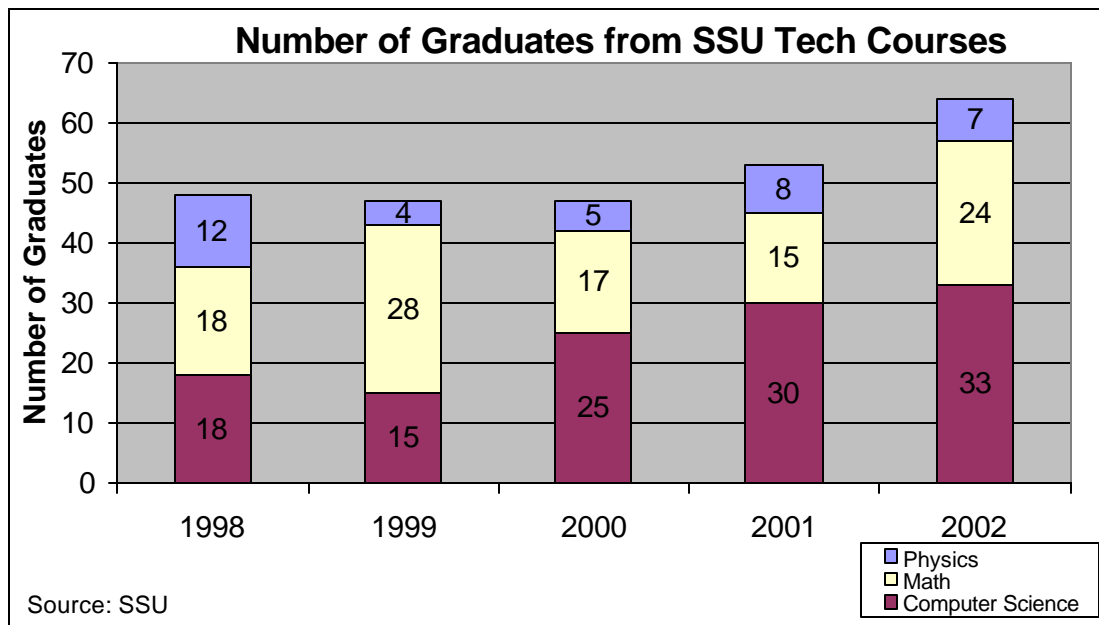
The Standardized Testing and Reporting (STAR) program is meant to measure the progress of California students in varying areas of study. As illustrated, Sonoma County students are on par with students across the State, and in some cases are scoring slightly above the average.



Sonoma County students score considerably higher on the math section of the SAT than the average student in the State or in the nation. Despite the percentage decrease in enrollment in math classes, test scores have consistently risen in the past three years.



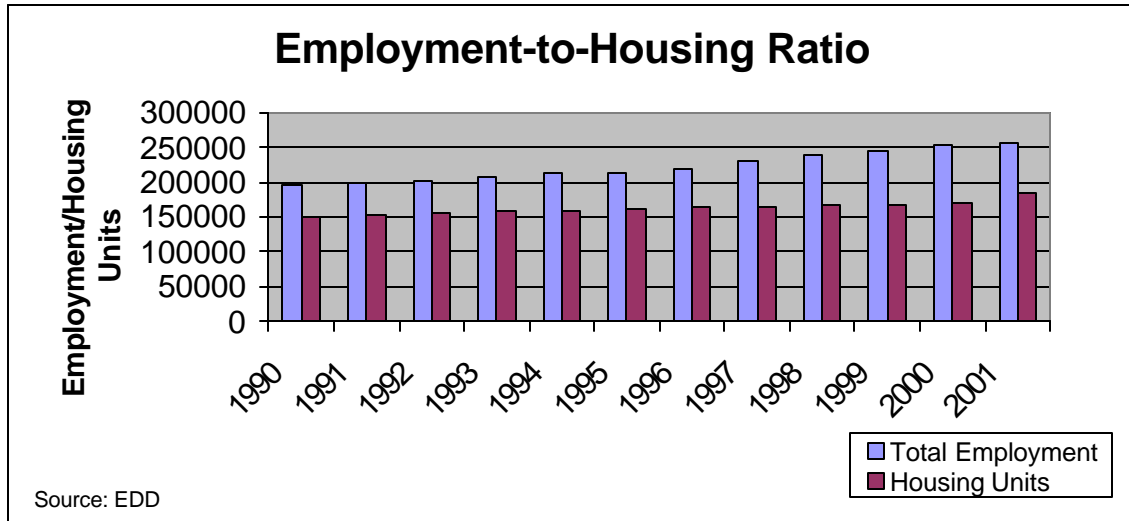
Until recently, a higher percentage of Sonoma County high school students were eligible for attendance at one of the University of California or California State University schools than the State total. Although the 2001 – 2002 state figures have not been released, the county average is comparable to the state eligibility figures from 2000 – 2001.



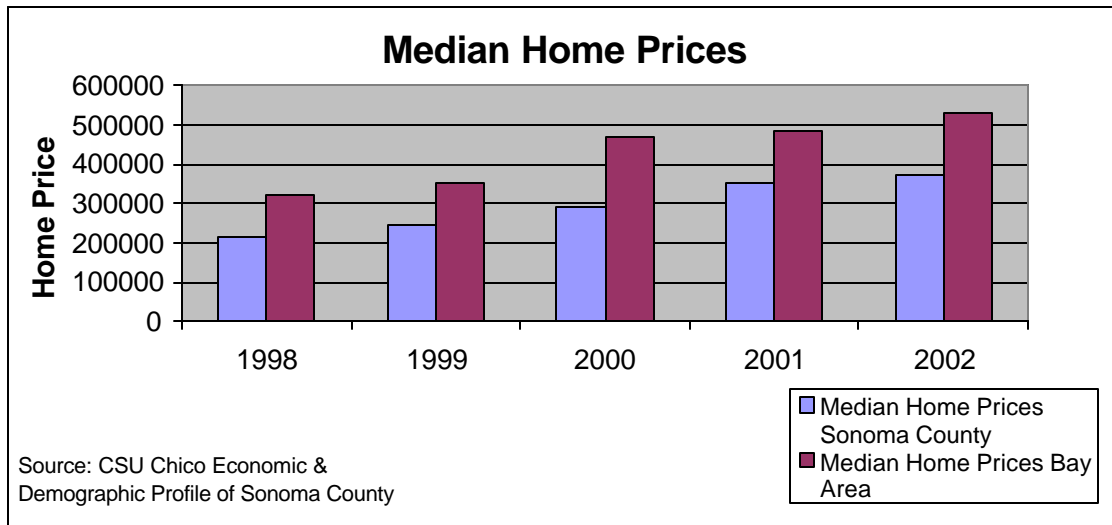
The number of graduates in tech-related field of study has steadily increased over the last few years. The percentage of graduates with bachelors degrees in computer science has increased more than 100% in the last four years. The addition of a Masters in Engineering and Computer Sciences is a wonderful addition to the SSU campus. Enrollment in the program has exceeded initial estimates.

Housing

More technology executives expressed concern about the rising cost of housing in the 2003 survey than in any previous year, and with good reason. Housing prices have continued to skyrocket in the last three years despite the large number of layoffs in the last two years, and the lack of housing units available.



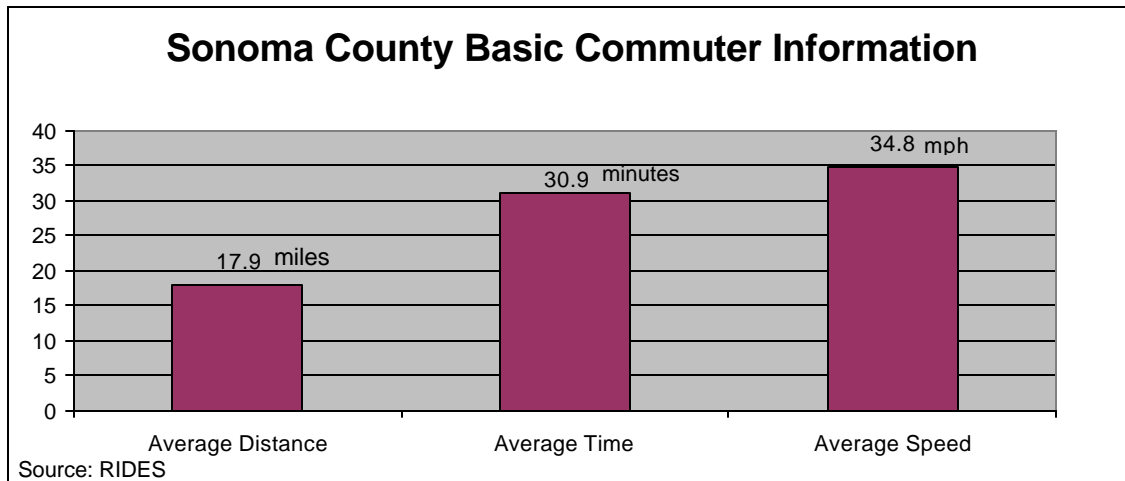
The disparity between number of employees working in Sonoma County and the number of housing units continues to expand; the demand for houses continues to outpace the supply.



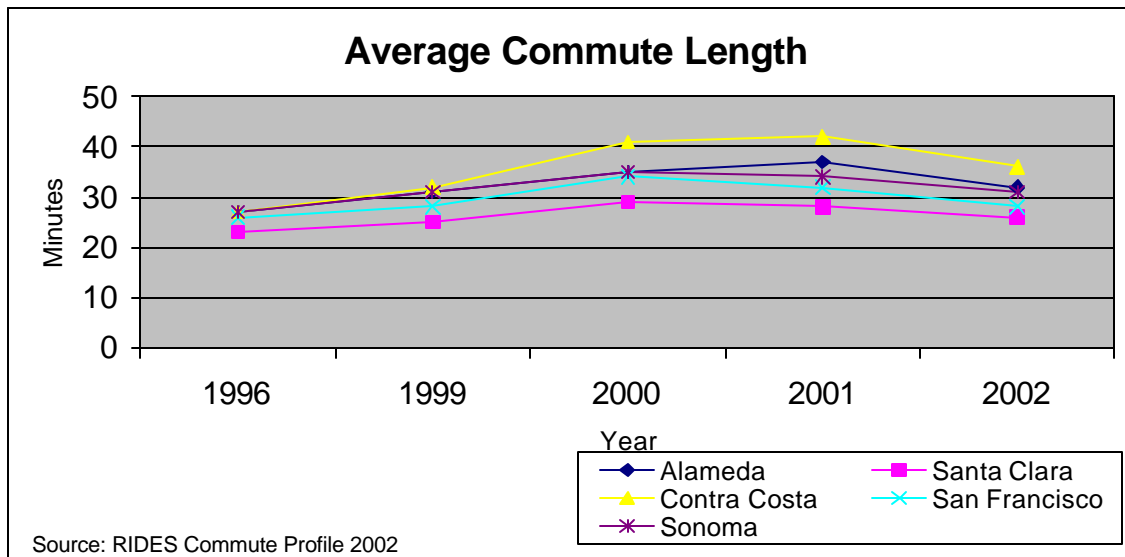
Housing costs in Sonoma County have risen more than 80% in the past five years, making the area even less affordable than the past. However, prices have not yet reached the levels equal to other Bay Area housing markets.

Traffic

Although the long-anticipated five-mile lane expansion of Highway 101 is now open, the change seems to have made little difference to tech company executive leaders. 70% of executives who responded to the survey indicated that traffic was a disadvantage of doing business in Sonoma County. The following graphs provide more information on the traffic problem.



Most Sonoma County residents spend more than one hour of their day in the car, and travel close to 38 miles in a day.



The average commute for a Sonoma County resident is comparable to the time spent by other Bay Area county residents, and in some cases even shorter. Fortunately, the average time commuters spend in the car has decreased consistently over the past three years.



SECTION IV

2003 SONOMA COUNTY TECHNOLOGY SECTOR REPORT FROM ECONOMY.COM

Tech Industry - Sonoma County

Recent Trends. The broad high-technology industry continues to struggle. Demand for high-tech equipment and services stabilized in the first half of last year, following a sharp collapse in 2001, but demand has edged down over the last six months and remains well below the peak reached in 2000. Business spending on information technology (IT) equipment and software is edging down, consumer electronics sales are now falling on a year-ago basis, and exports remain weak. Federal government spending is the only source of significant tech spending growth, but it is being outweighed by weakness in other end markets.

Tech manufacturers continue to struggle with excess capacity, which weighs on prices and harms profitability. Most tech manufacturers continue to post losses and tech companies continue to reduce costs by cutting payrolls. Furthermore, the industry is consolidating as low stock values generate some takeover opportunities. Local tech manufacturing employment has been flat for the last three months ending in January, although the bottom has not been reached yet. Employment among Sonoma County's computer and electronic products manufacturers has fallen by approximately 3,000 from its early 2001 peak, amounting to a loss of more than 15%. The figure will fall further before there is any improvement, reflecting recent layoffs of 900 at Agilent Technologies and 240 at Nokia and 100 at Advanced Fibre Communications.

Countering telecom-related weaknesses, the county has had some recent successes in attracting biotech and software-related firms. Demand for software has held much firmer than hardware over the past two years. Employment in the county's information industries, for example, has held steady since late 2000.

Biotech continues to enjoy some infusions of capital. During the 2001 recession, biotech start-ups nationwide enjoyed renewed attention from venture capitalists who shied away from Internet and telecom projects. However, since then, the struggling national economy has increased risk aversion to the point that venture capital investments in biotech fell by half nationwide and in California in the second half of 2002.

Macro Drivers. The U.S. economy has come to a virtual standstill, which will

cause problems in the near term for Sonoma County's high-tech industry. Although nationwide economic output has expanded slowly since last year, the gains have not been strong enough to create new jobs, and businesses remain hesitant to spend. Tight business investment spending restricts demand for IT hardware and software.

On the bright side, corporate profits have stabilized and managed to rise sequentially in the 2002Q4 and 2003Q1 for the first time since late 2001. Improving corporate profitability will eventually pave the way for increased spending on tech hardware. The latest CIO Magazine Tech Poll, which surveys several hundred chief information officers on their tech spending plans, reports expected spending growth of 6% this year.

A weakening U.S. dollar may support tech exports by year's end. Nevertheless, California exports of computer and electronics equipment declined for eight consecutive quarters through the end of 2002. The pace of decline is slowing, but no turnaround is evident yet.

Industry Drivers. The weakest segment of Sonoma County's tech industry remains the telecom equipment industry. Telecom equipment makers continue to struggle, but there are indications that the industry's steep two-year contraction is abating. Industry shipments continue to fall, but the rate of decline has moderated in recent quarters, and orders have improved over the past few months. Despite the recent stabilization, however, monthly shipments are still only half of the industry's peak in mid-2000. Furthermore, there is still substantial excess manufacturing capacity in the industry and profitability remains negative. Given the ongoing struggles of the telecom services industry, it is plausible that demand for telecom infrastructure equipment will not experience a significant upturn until next year or beyond, and will not likely return to the levels seen during the boom for years to come.

Lackluster demand for telecom services and weak pricing is forcing telecom service providers to keep infrastructure spending to a minimum. Recent uncertainty surrounding FCC policy has also curbed infrastructure investment. The recent triennial review of FCC regulations resulted

in some moderate alterations that will ultimately shape the telecom industry. The near-term impact of the recent FCC regulatory changes on the equipment industry will be minimal because the new rules are expected to be challenged in court, and it is not clear if they will hold up.

If the rulings are upheld, however, the new regulations would provide some upside potential for the county's makers of switching gear, since the former Bell companies would be able to build out the so-called last mile of broadband capacity without the need to share the capacity with competitors.

Sonoma County's instrument manufacturers are benefiting from increased defense and federal government tech spending. Defense spending on equipment and software climbed by 11% in the last quarter of 2002 compared to the same period one year ago. Substantial defense spending growth is continuing this year. Already, local firms, such as MicroSource, a maker of microwave radar components, and Sonoma Design Group, a maker of optical surveillance systems, are seeing an increase in orders.

Total federal IT spending, including non-defense agencies, climbed by 12% in FY 2002. The administration's current FY 2003 budget (not yet passed) proposes a further 17% increase in total federal tech spending to \$58 billion, which would provide a further stimulus to tech industries. While the government will continue to spend around \$60 billion a year on IT in coming years, growth in spending will soon plateau. The FY 2004 budget calls for a mere 2% increase in IT spending.

The long-term outlook for biotechnology is very favorable. While medical applications will continue to dominate the research focus of firms, environmental, chemical, and agricultural applications will grow in importance. Demographic trends and technological innovation will support strong volume growth. The aging population and rising life expectancy in the population will drive demand for drugs and medical instruments that fight degenerative diseases in innovative ways.

Pricing. Overall, pricing power among producers of tech hardware remains weak. Manufacturers continue to innovate and improve functionality and capacity of their

products, while unit prices remain flat to down slightly. Meanwhile, older products continue to be heavily discounted.

Excess manufacturing capacity continues to weigh on pricing. Capacity utilization in the communications, computers and semiconductor industry has hovered between 61% and 63% for the last year, below average and well below desirable levels.

Excess capacity is most evident in the telecom equipment industry, where capacity utilization is a mere 50%. Telecom equipment price deflation has accelerated since the middle of last year.

Operating Expenses. Tech firms have pared operating expenses largely through layoffs that have taken place over the past two years. The industry's employment peak was in the early months of 2001. Encouragingly, employment in Sonoma County's tech manufacturing industry has stabilized over the last few months, but there has yet to be any real signs of net hiring. When Sonoma County's tech firms do begin hiring again, the severe wage pressures of the late 1990s will be a thing of the past.

Among the county's smaller tech firms, high R&D spending will remain a large burden and, thus, many will continue to rely on venture capital investments to keep them afloat. In the near term, this will support biotech firms more than any others. While venture capital placements have fallen drastically, there is still a flow of dollars toward biotech ventures in California, whereas there are virtually no VC placements in electronics and instrumentation in the state, according to PriceWaterhouseCoopers.

Sonoma County's advantage in business costs, which are about 10% lower than Silicon Valley, generates potential for attraction of new tech firms. A recent example is Sirific Wireless Corp., a startup developer of radio frequency chips, which made such a move earlier this year.

Profitability. Profitability remains difficult for most tech companies. Losses are not as great as they were in 2001, but few are managing to turn a profit. Profitability is expected to improve by the end of this year thanks to stabilizing demand and successful cost reductions. Tech companies have aggressively cut payrolls over the last couple of years and have continued to squeeze component suppliers, which will

soon lead to improved profit margins.

Profitability is weakest on the tech hardware side of the industry, as excess capacity remains a severe problem. Software and service companies have managed to improve profitability in recent quarters, mainly because these companies did not suffer as severe of a downturn in demand, and pricing power is greater.

Profitability of medical equipment firms is stable, and the outlook is boosted by the generally increasing demand for medical services and supplies. This could be dampened only by the ability of government and private medical insurers to negotiate minimal price increases for such equipment in coming years.

Long-Term Outlook. Although near-term prospects are not bright, industry expansion will resume over the longer term. Business spending on tech equipment and software is expected to post moderate growth this year, and growth will pick up further next year as a bout of replacement spending kicks in. Technological advances, easing of regulatory barriers and demands for data, Internet and wireless services all bolster the long-term outlook of the telecom services industry, which will spur demand for telecom equipment. Telecom investment will eventually return to more sustainable levels, with growth tied more closely to carriers' cash flows.

Some segments of telecom equipment have brighter prospects, namely metropolitan and wireless network equipment. While it will take years to overcome the current overinvestment in long-haul infrastructure, significant bottlenecks persist in many metro areas. Upgrading local infrastructure will not only fuel direct demand for local network equipment, but will also help absorb long-haul capacity. Wireless carriers are also adding more high-speed data functionality to their services, which will drive demand for equipment.

A critical long-term advantage for Sonoma County's tech industry is that it is an innovative industry, not a producer of commodity products. The U.S. still maintains a trade surplus in specialized tech components, such as semiconductors and instruments. Firms that concentrate on high value added designs, where proximity to engineering and research staffs

is critical, will keep production local.

Upside Risks. If local telecom services providers can connect more homes and small businesses with broadband services and consumers embrace new technologies, demand for equipment will increase. Greater customer access to high-speed last mile connections, which could result from the recent FCC rulings, would accelerate the absorption of long-haul capacity and eventually prompt further investment in long-haul networks. Moreover, consumer adoption of high-speed wireless data services would prompt further investment in wireless phone and network equipment.

One area of Sonoma County's high-tech economy that has not experienced a sharp contraction and that offers long-term potential is biotechnology. Renewed interest in this industry's products, along with a more favorable regulatory climate, favors the industry's long-term potential.

Tech-based curricula, through Sonoma State University's master's program in computer and engineering science, provides further upside potential to provide personnel needed for local tech industries. A proposed BS program in engineering would add further to local workforce quality, completing the stream of tech-based curricula that also is available at the junior college and high school level.

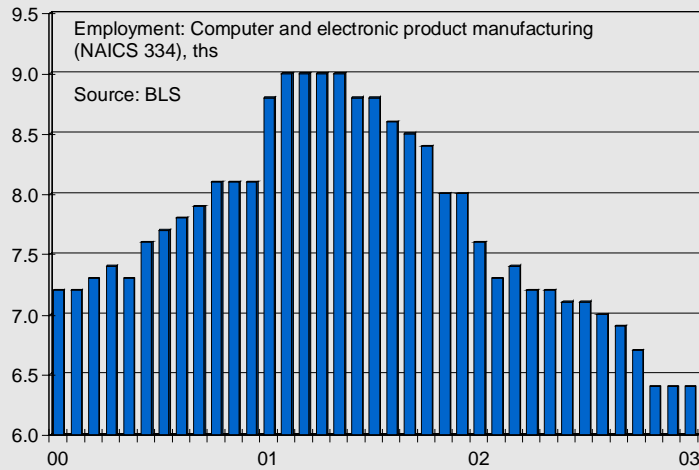
Downside Risks. The primary downside risk for the telecom equipment component of Sonoma County's tech industry is a further contraction in demand from telecom services companies, stemming from ongoing financial difficulties and a weaker than expected economic recovery. If carriers continue to face price deflation and tight capital markets, spending on equipment would continue to fall. Sustained long-term uncertainty surrounding the telecom service industry's regulatory structure also stands to restrict telecom carriers' investment spending.

Biotech firms generally prefer to be part of clusters—preferably around universities where high-quality medical research is conducted—to facilitate the transfer of new knowledge and quality workers. The risk to the county is that it cannot compete with existing clusters in California and elsewhere where university research is abundant and wet-lab space is available.

James Glen

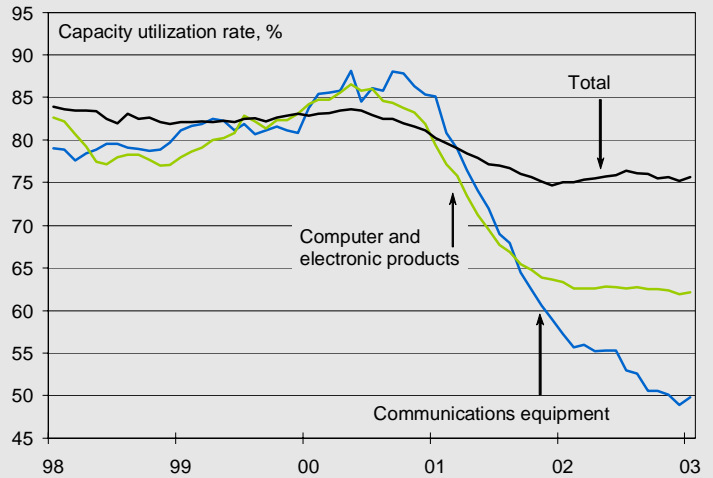
Tech Industry - Sonoma County

Signs of Stabilization in Sonoma County's Tech Job Market



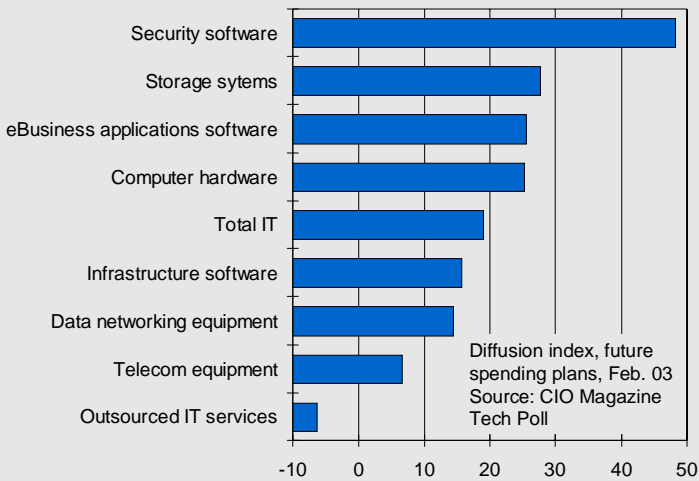
While there have been few signs of significant net hiring in Sonoma County's high-tech manufacturing industry, the steep decline in employment that has taken place over the last two years has seemingly abated in recent months. Employment in the computer and electronic products manufacturing industry, which includes computer, communications, audio and video, semiconductors, navigational and optical equipment manufacturing, has remained flat for the last three months, according to the BLS. Nevertheless, employment remains down almost 30% from the peak reached in early 2001.

Communications Capacity Glut



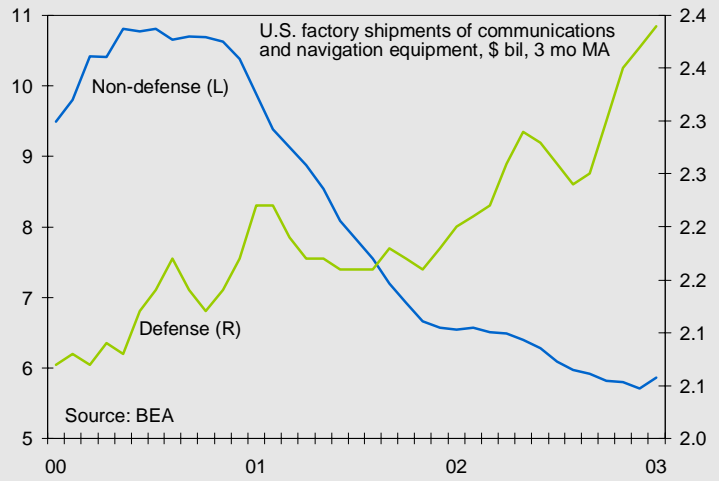
Of all the tech manufacturing industries, communications equipment remains in the weakest shape. There are indications that the industry's steep two-year contraction is abating, but capacity is still way out of line with demand. The capacity utilization rate in the communications equipment industry is a mere 50%, the lowest of all industries the Federal Reserve tracks. Substantial excess capacity will continue to weigh on telecom equipment pricing. Telecom equipment price deflation has picked up in recent months; according to PPI data, prices are currently falling at a 5% year-over-year pace.

Enterprise Telecom Equipment in Weak Demand



The near-term outlook for corporate telecom and networking gear spending is weaker than for other types of tech investment, according to the latest CIO Magazine Tech Poll, which surveys several hundred chief information officers. The diffusion indices for telecom and networking equipment remain positive, but are significantly below the index for total IT spending. Corporations continue to keep a lid on capital spending because of weak profitability and poor business confidence. Nevertheless, more CIOs expect to increase near-term total IT spending than those who expect to decrease it.

Defense Tech Spending Climbing but Dwarfed by Non-defense



The recent runup of defense tech spending has buoyed the tech industry. U.S. factory orders for defense communications equipment jumped 22% in January from a year ago, and orders for defense search and navigational equipment surged 53%. While defense spending is climbing, non-defense spending on such equipment continues to fall, and shipments remain close to 50% below their mid-2000 peak. Monthly defense shipments of communications and navigation equipment have climbed steadily, but are up only \$400 million or so over the same period.

This report is an update and expansion of the information gathered for studies conducted in 1993 and 1998. It should be noted that the 1998 survey data was used in the 1999 technology report. In the original 1993 report, 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 the 1993, 1999, and 2003 reports were identified using various tech listing guides, Standard Industrial Classification (SIC) codes, and information provided by other local sources. A brief cover letter and a two-page survey questionnaire were mailed out to 244 firms. A total of 61 companies responded to the surveys, a 25% response rate. While these response levels cannot justify drawing definitive conclusions about the entire industry, the survey results do offer an informative “snapshot” of many important trends and issues facing local employers.

It should be noted that the definition of “high-technology” in this study yields a consistently conservative assessment of 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 tech workers, because all temporary workers are grouped together under SIC code 7363, “help supply services”.

Please note that the data in the qualitative section of this report is based on information self-reported by survey respondents, which was not verified by the EDB. The data in this study is typically represented as percentages. The tables and graphs herein have two types of percentages. They are labeled as either “Percentage of Companies” or “Percentage of Companies Responding.” The difference between the two is that the “Percentage of Companies Responding” graphs represent questions for which there are multiple answers. Due to the fact that survey respondents may provide no responses to some questions, the category percentages indicated in the graphs for those questions may not sum up to 100%. Where replies are mutually exclusive, percentages may be slightly off due to rounding. Where replies are not mutually exclusive, percentages may total more than 100%.

This study relied on local 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 responses from the companies to the questions from year to year are quite consistent and lend credibility to the conclusions in the report. It was our intention to obtain averages that provide a general “snapshot” of various issues for the tech industry in Sonoma County. Accordingly, the averages have not been weighted by any factor or interest.

The following presents highlights of the 1993 and 1999 technology reports. This section provides a brief summary of each report, as well as initiatives undertaken following the completion of each report.

THE 1993 TECHNOLOGY REPORT

BACKGROUND

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
- Favorable real estate costs

The 1993 report 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 companies in Sonoma and Marin County.
4. Expand links between education and high-tech. A "High-Tech Summer" internship would offer a useful opportunity to increase students' awareness and interest in pursuing a career in a technology related field.
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 FROM 1993-1999

- **Creation of SofTech**

After the 1993 report, the Sonoma County Economic Development Board initiated the launch of SofTech, a software industry trade association with almost 300 members with 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 telecommuting easier for workers.

- **Formation of the North Bay Angels**

Another group founded between the 1993 and 1998 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.

- **Broadened understanding of Sonoma County's high tech sector**

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, the impact of the EDB's 1993 report should not be underestimated.

THE 1999 TECHNOLOGY REPORT

BACKGROUND

In 1998 the Sonoma County Economic Development Board (EDB) conducted a follow-up survey of local high-tech firms. The EDB used the findings of the 1998 survey to develop the 1999 report, *High-Tech: Sonoma Count at a Crossroads*. The 1999 report suggested that:

- Sonoma County was still a great place to live, work, and operate a high-tech business
- Sonoma County had a strong potential as a high-tech region
- High-tech firms wanted to remain and grow in Sonoma County
- High-tech firms showed a greater range of business activity than the previous five years

When the 1999 report was released Sonoma County's economic vitality increased largely because of the booming technology industry. The EDB found that the high-tech sector offered a strong potential for positive growth in Sonoma County and made five core recommendations:

1. Create a vibrant technology umbrella organization that 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.
2. Improve and develop a high-tech workforce by vigorously expanding links between education and the Sonoma County high-tech community in an effort to combat the shortcomings of the local labor pool.
3. Consolidate high technology into one economic cluster for better analysis.
4. Develop and publicize Sonoma County as a technology friendly place by educating local residents about science and high technology.
5. Make a special effort to reach out to local high-tech firms. In particular, all sectors of the local government should make a special effort to include the high-tech leaders in the planning, coordination and implementation of program that could promote the region's vitality.

EFFORTS SINCE THE 1999 REPORT

Following the 1999 technology report, the Sonoma County Board of Supervisors authorized the Economic Development Board to form the North Bay Technology Roundtable (NBTR), a group consisting of technology executives, educators and various trade groups involved with technology. The organization was charged with the responsibility to develop policies and programs that benefit the technology business community. Since the NBTR's inception, it has been integral in shaping a number of policy initiatives that benefit the North Bay technology sector. More information about the NBTR can be found on page 41.

NBTR ACCOMPLISHMENTS & CURRENT PROJECTS

- **LEGO Robotics**—The NBTR brought programmable robots to the county middle schools to increase student interest in technology-related fields of study.
- **Youth Business Week**—The NBTR participants rallied community support for the weeklong business program, which teaches high school students how to form and run companies using a computer simulated market.
- **SRJC Tech Academy, the Technology High School and the Master of Science in Computer & Engineering Science Program at Sonoma State University**—The NBTR member companies contributed millions of dollars and thousands of volunteer hours to help launch these programs.
- **Workforce Gap Analysis**—This report examines the relationship between high-tech workforce requirements and local educational options for technology training.
- **Career Fair**—The NBTR participates in Career Fair, an annual event providing Sonoma County high school students with information on potential careers.
- **Sustainability at Work**—A special workshop that outlined highly effective strategies businesses are employing to move toward sustainability hosted by the NBTR and the Petaluma Chamber of Commerce.
- **Connectivity Council Report to the Board of Supervisors**—The Connectivity Council analyzed the areas existing high-speed communications infrastructure, as well as identified steps toward improving it. The results of the study and the policy suggestions are found in this report.

PREVIOUS TECHNOLOGY REPORTS

- **Promotion of Telework (Telecommuting)**—The NBTR has hosted two instructional workshops: "Work is No Longer A Place" (May 2000) and "21st Century Homework: The How-to of Telework" (October 2000). Each workshop was intended to provide a general overview of telecommuting as a concept, and to offer information on more specific issues like "best-practices," benefits, potential pitfalls, and other HR topics.
- **Promotion of Fair-share Transportation Funding**—Working in conjunction with the Sonoma County Technology & Manufacturing Group (SCTMG), the NBTR sponsored the education of state and federal legislators to the transportation needs of Sonoma County and the benefits of transportation projects and funding.
- **Sonoma County Housing Coalition**—The NBTR actively supports the Sonoma County Housing Coalition through community meetings and workshops that have brought together political representatives, businesspeople, educators, non-profit representatives, and the public at large. The Housing Coalition is making significant progress toward reaching consensus on a number of important initiatives.
- **News Alert**—A NBTR News Alert will consist of news worthy information about NBTR companies to be distributed to media organizations in the first week of every month.
- **Community Leaders Tech Tour**—The "Tech Tour" is a daylong event that brings together community leaders to learn about the issues faced by technology companies. The event includes tours of participating companies, catered meals, and social activities.

BACKGROUND

The NBTR was founded to foster a supportive business environment for North Bay technology companies and to provide a forum for the development of public/private partnerships to address issues such as education, housing, and transportation. Following its creation in 1999, the NBTR assumed responsibility for the following charges:

- 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 government
- Speak as one informed voice on behalf of the local high-tech community
- Raise awareness of high-technology among local residents

NBTR VISION STATEMENT

The NBTR developed a vision for 2010 to guide the organization. Focusing on several key issues – environment, housing, transportation, education, and community involvement – the vision statement highlights the various ways the high-tech sector contributes to the North Bay's quality of life.

EDUCATION

The NBTR is committed to forging strong partnerships at all levels of education to ensure that North Bay residents are prepared for a full range of local career opportunities in technology.

TRANSPORTATION

The NBTR will promote the development and utilization of multiple modes of transportation, as well as alternative solutions such as telework and live-work communities, that relieve pressure on traditional transportation systems.

HOUSING

The NBTR will promote and participate in housing solutions that balance location, availability and affordability with job creation and community desirability.

THE ENVIRONMENT

The NBTR will continue its commitment to environmentally safe practices and solutions to help preserve and enhance the North Bay's natural beauty and environment.

COMMUNITY INVOLVEMENT

The NBTR's participating companies and their employees will continue to expand their role as active community partners in enhancing the quality of life in the North Bay.



North Bay Technology Roundtable

Executive Committee:

Curt Wheeling, *Phase Seven, Chairman*
Diane Hamilton, *Vice-Chair*
Derry Gladstone, *Agilent*
Dore Horak, *Cisco Systems*
Michael Hatfield, *Calix*
John Schiller, *Sonoma County Office of Education*
Beth Stephens
Jeff von Raesfeld
Barbara Shula

Members:

Don Pappas, *AFC*
Lobyn Bramhall, *Alcatel*
Roy Hurd, *Empire College*
Peter Oliver, *DataFlow*
Keith Hall, *KLH Consulting*
Dan Alexander, *Knowledge Point*
Elizabeth Hammack, *Medtronic AVE*
Tom Whitaker, *Motion Analysis*
Roy J. Martinez, *North Bay Angels*
Stephen Braitman, *NBMA*
Bill Conde, *Pacific Clearstream Media Group*
John Foley, *Resmatic*
Marc McDonald, *Rheodyne*
Chuck Robbins, *Santa Rosa Junior College*
Jane Jasper, *Sonic.net*
Bruno Schurter, *Schurter, Inc.*
Ed Lott, *Serra Systems*
Warren Dranit, *SofTech*
Saeid Rahimi, *Sonoma State University*
Lindsay Austin, *Spectraswitch*
Joseph W. Humphrey, *TriVascular*
Scott Gibson, *Symmetricon*
John Webley, *Turin Networks*
Scott Mindemann, *Vista Broadband*
Amran Shamsavari, *Xandex*
Karen Mathre
Michael Troy

Staff:

Sonoma County
Economic Development Board
101 College Ave., Suite D
Santa Rosa, CA 95401

September 2003

Four years ago, the Sonoma County Board of Supervisors authorized the Economic Development Board to form the North Bay Technology Roundtable (NBTR). I am proud to report that since the NBTR's inception, the group has played a dynamic role in shaping a number of initiatives that benefit the technology industry, government, education, and community organizations.

It is gratifying to see what we have accomplished in just four years. Some of the highlights include bringing Youth Business Week to the Bay Area, Building Bridges with local schools, conducting Telecommuting and Telework conferences, sponsoring a Community Leaders Tech Tour of local technology companies, and supporting Santa Rosa Junior College to create a "Tech Academy." Each of the programs that we have undertaken has had a direct and positive impact on the businesses, youth, and general public in Sonoma County.

This year's initiatives are truly exciting. We will continue to support and expand Youth Business Week. The NBTR is once again sponsoring and expanding the Lego Robotics program to introduce middle school students to a new and fun way of learning more math, science, and engineering skills. Because of California's educational budget crisis, we are asking our member companies to sponsor and save twenty-three Learning Centers in our high schools that offer after school mentoring and tutoring for at-risk youth. We are also working to build math, science, and engineering skills for local university students by working with Sonoma State University and strongly supporting its Bachelors in Science and Engineering Program.

As you can see, the NBTR has played a powerful role in enhancing the technology sector in Sonoma County, and indeed the quality of life in our community. I look forward to the positive work that the NBTR will do in the years to come.

Sincerely,

Curt Wheeling
Chair, NBTR

2003 SONOMA COUNTY ECONOMIC DEVELOPMENT BOARD

HIGH-TECHNOLOGY SURVEY

All responses will be kept strictly confidential

| | |
|---|--------------|
| Company Name: _____ | |
| Address: _____ | |
| Phone: (____) _____ | |
| Name of person completing survey: _____ | Title: _____ |

1. Location of company headquarters: _____

2. Year operation began in Sonoma County: _____

3. Relocated from: (if applicable) _____

4. Approximate number of employees in Sonoma County: _____

5. Do you consider your firm a high-technology company?

Yes

No

Not Sure

6. Which of the following high-technology areas best describes the *primary* operation of your company in Sonoma County? (Please check one)

Computer Hardware/Electronics

Lasers

Biotechnology/Biomedical

Software/Artificial Intelligence

Robotics

Advanced Materials

Equipment and Instrumentation

Aerospace & Defense

Chemicals/Testing Laboratories

Environmental Control Products

Telecommunications

Professional Services/Consulting

Medical/Pharmaceutics

Internet Service/ E-commerce

Other (specify): _____

7. Which of the following business activities best describes your *primary* emphasis in Sonoma County? (Please check one)

Research & Development

Manufacturing

Marketing/Sales Office

Professional Services

Corporate/Head Office

Other (specify): _____

8. What portion of the company's annual operational budget is spent on research & development? ____ %

9. What types of skills do you require from your employees? (Please check all that apply)

Clerical skills (typing, filing, etc.)

Sanitation

Analytical/Mathematical Skills

Writing/Communication Skills

Customer Service Skills

First Aid/CPR

Bookkeeping Skills

Computer Skills

Sales/Marketing

Ability to Learn

Management Skills

Other: _____

10. How difficult is it for your firm to find *skilled* employees?

- Very Difficult Somewhat difficult Not difficult

Why? _____

11. Which positions are the most difficult to recruit? (Please check all that apply)

- Experienced Scientists & Engineers Technicians Senior management
 Junior Management Research Specialists Clerical/Admin
 Entry-level Scientists & Engineers Production Workers Other (specify): _____

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

- Yes No Not applicable

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

| | Poor | Fair | Good | Excellent | N/A |
|---------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Primary | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Secondary | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Trade/Tech Schools | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| S.R. Junior College | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Sonoma State Univ. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

14. How difficult is it for your firm to find unskilled employees?

- Very Difficult Somewhat difficult Not difficult

Why? _____

15. Are you aware of Sonoma County Job Link?

- Yes No

16. Is access to equity capital in Sonoma County a major problem in your firm?

- Yes No Not applicable

(If so, where is it better?) _____

17. In which areas do you feel local government could help assist high-tech companies? (Please check all that apply)

- Taxation Licensing/permits Regulations
 Financial assistance Education/job training Infrastructure
 Other (please specify) _____

Why? _____

18. How would you rate Sonoma County's current and future potential for attracting and retaining high-tech companies?

- High Potential Medium Potential Low Potential

Why? _____

19. What are the major *advantages* of locating a high-tech company in Sonoma County?
(Choose a maximum of five selections)

- | | | |
|--|---|---|
| <input type="checkbox"/> Land costs/rents | <input type="checkbox"/> Housing costs/Variety | <input type="checkbox"/> Availability of space |
| <input type="checkbox"/> Quality of education | <input type="checkbox"/> Quality of Life | <input type="checkbox"/> Permit process/regulations |
| <input type="checkbox"/> Labor pool | <input type="checkbox"/> Commute/traffic | <input type="checkbox"/> Access to markets |
| <input type="checkbox"/> Access to suppliers/contractors | <input type="checkbox"/> Lab/facility access | <input type="checkbox"/> Facility/operation costs |
| <input type="checkbox"/> Access to universities | <input type="checkbox"/> Taxes/government regulations | |
| <input type="checkbox"/> Other (specify): _____ | | |

20. What are the major *disadvantages* of locating a high-tech company in Sonoma County?
(Choose a maximum of five selections)

- | | | |
|--|---|---|
| <input type="checkbox"/> Land costs/rents | <input type="checkbox"/> Housing costs/variety | <input type="checkbox"/> Availability of space |
| <input type="checkbox"/> Quality of education | <input type="checkbox"/> Quality of Life | <input type="checkbox"/> Permit process/regulations |
| <input type="checkbox"/> Labor pool | <input type="checkbox"/> Commute/traffic | <input type="checkbox"/> Access to markets |
| <input type="checkbox"/> Access to suppliers/contractors | <input type="checkbox"/> Lab/facility access | <input type="checkbox"/> Facility/operation |
| <input type="checkbox"/> Access to universities | <input type="checkbox"/> Taxes/government regulations | |
| <input type="checkbox"/> Other (specify): _____ | | |

21. Did you expand your operations last year?

- Yes No Not applicable

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

- Yes No Not applicable

Why? _____

23. Are you aware of the North Bay Technology Roundtable?

- Yes No

Please fax or mail back by **January 31, 2003**
Fax: (707) 565-7231
401 College Ave. Ste. D
Santa Rosa, CA 95401

Thank you very much for your time!

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Ben Stone
Director
Economic Development Board