Sonoma County
Economic Development Board

presents the

2004
Sonoma County Technology Sector Report

Prepared in Partnership with the
Sonoma County Workforce Investment Board

May 2004

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The Sonoma County Economic Development Board, in conjunction with the Workforce Investment Board, is pleased to bring you the 2004 annual technology report. In this report you will find the latest available economic data and industry trends of the technology sector in Sonoma County.

Key highlights of the trends that can be found in this report include:

- Increased demand in wireless technology is causing a rebound in demand for infrastructure equipment.
- Local biotech firms show a positive outlook, and Sonoma County will see growth in both research and employment for stent research.
- While tech employment has been cut in half since early 2001, employment has stablized since last November. Despite the lack of employment growth, there has been an increase in productivity.
- Overall, profitability has rebounded thanks to rising sales and improved cost structures.
- Sonoma County's long-term strength in technology lies not as a producer of commodity products, but as a source of innovation.

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.

Please note the following list of underwriters whose generous support make this research information possible. Thank you again for your interest in the Sonoma County economy.

Yours sincerely,

Ben Stone

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Tech Industry - Sonoma County

Recent Trends. The broad high-technology industry has improved measurably over the last year, and continues to stage a moderate rebound. After collapsing in 2001 and stabilizing the following year, demand for high-tech equipment and services bounced back in 2003 and continues to demonstrate signs of improvement. Demand is expected to remain healthy in the near term thanks to a strengthening global economic recovery, rising business capital spending and resilient consumer spending.

Accelerating business demand for IT equipment is currently leading the rebound. U.S. business investment in IT equipment and software has climbed steadily over the last year, and was up 15% in the fourth quarter compared to one year earlier. Most of the rise in business demand can be attributed to computer hardware replacement demand, as businesses replace old equipment put into place before Y2K. However, businesses have also started investing in new technologies, including networking equipment.

Moreover, there are signs that telecom services companies are finally starting to increase capital spending on high-speed line, wireless, and Internet protocol technologies. Although revenue growth in the telecom services industry remains tepid, the financial condition of the industry is greatly improved. Increased competition from alternate technologies is also prompting phone companies to invest to remain competitive.

As such, Sonoma County's cluster of optical and communications technology firms should experience moderate sales growth in the near term. Indeed, Alcatel in Petaluma is recruiting staff locally with rising demand for equipment supporting DSL service. Nationally, factory shipments of communications equipment have climbed steadily since early last year and are now about 20% higher than the seven-year nadir reached in May of 2003. Despite the rebound in shipments over the last few quarters, they are still down by more than one-third from their peak in late 2000.

Monthly orders have been particularly volatile over the past six months, but on net have been flat. Nevertheless, the level of orders remains several percent above current shipments.

Foreign demand has accounted for a substantial portion of recent growth in U.S. factory shipments; last year, exports accounted for 29% of U.S. factory shipments of communications equipment. Exports of telecom equipment have climbed by more than one-quarter over the last six months.

Macro Drivers. High-tech companies are benefiting from an economic expansion that is gaining momentum. Demand and production growth are strong and the job market is firming. While the expansion is not yet self-sustaining, as job growth is still shy of what is needed to absorb new labor market entrants, there are solid reasons to believe that it soon will be. Surging corporate profits have given businesses the financial wherewithal and, increasingly, the incentive to hire and invest more aggressively. As such, telecom equipment and other IT companies are expected to experience stronger sales growth over the next year as the economic rebound gains traction.

Business investment remains the prominent driver of the current economic rebound. IT investment, mainly in computers and software, has led the turnaround, but more recently telecom equipment has joined in the rebound. Business fundamentals suggest further acceleration in investment this year. Profitability continues to improve, businesses have ample cash and outside sources of capital are readily available.

Tax incentives will also induce businesses to increase capital spending in the near term. Bonus allowances, set to expire at the end of this year, permit businesses to depreciate an additional 50% of the cost of equipment or software in the first year of service. Not only does this provide a direct incentive for businesses to invest now rather than later, it also frees up cash for further investment. Bonus depreciation is arguably a stronger incentive to investment in longer-lived IT gear, such as telecom equipment, rather than more short-lived capital goods, such as computers.

Chief information officers are also growing more confident and their spending plans are on the rise. According to the latest CIO Magazine Tech Poll, CIOs plan to increase IT spending by more than 7% over the next 12 months. Spending on telecom equipment is a lower priority than other IT areas, but spending plans for telecom and networking equipment are on the rise.

Finally, the depreciating U.S. dollar stands to support domestic telecom equipment manufacturers. On a broad trade-weighted basis, the dollar is off by about 13% over the past two years, making U.S. products less expensive to overseas buyers. Indeed, California tech exports have climbed significantly over the last few quarters.

Industry Drivers. Sonoma County remains highly exposed to the communications equipment industry, which was one of the hardest hit during tech downturn that started in early 2001. On a positive note, growth in wireless subscribers and the introduction of new services is prompting a nascent rebound in demand for infrastructure equipment. Indeed, Verizon recently announced that it would invest $1 billion over the next two years to deploy wireless, high-speed Internet service in selected metropolitan areas. The company is also increasing spending on voice over Internet protocol (VoIP) technology, as more competitors route calls over the Internet rather than traditional phone networks. The FCC recently ruled that it would not subject a limited type of VoIP service to the rules that govern conventional phone service.

In other regulatory developments, the U.S. Court of Appeals struck down the FCC rules that give state regulators the power to force incumbents to lease their networks to competitors; the court also upheld rules that exclude new advanced networks from sharing requirements. These latest rulings, if sustained, would support spending on telecom equipment, as they would force competitors to invest in their own equipment and remove the incumbents' disincentive to invest in new infrastructure. However, uncertainty surrounding regulation will prevail in the near term, as the FCC is expected to take the latest ruling to the Supreme Court.

Total federal IT spending, including nondefense agencies, climbed by 15% in FY 2003 to $57 billion. The administration's current FY 2004 budget requests another increase of about 3.5% in total federal tech spending. While the government will continue to spend around $60 billion a year on IT in coming years, growth in spending is reaching a plateau. The FY 2005 budget calls for a mere 1% 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. The impact is seen locally as TriVascular, for example, is hiring locally this year, and more could follow depending on the pace of approval for new stent grafts. Similarly, Medtronic also is extending research in stent technology.

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 improved significantly over the last year, but remains well below desirable rates. Utilization has climbed from 63% to 67% over the last year thanks to rising production and a slowdown in capacity growth.

The communications equipment industry continues to suffer from very low capacity utilization. The current capacity utilization rate remains not much higher than 50%, the lowest of any industry that the Federal Reserve Board tracks.

Operating Expenses. Technology companies have managed to cut costs substantially over the last couple of years. Operating expenses are now in line with reduced sales levels, but manufacturers remain focused on reducing costs.

Tech firms have pared operating expenses largely through layoffs. Total IT manufacturing employment in Sonoma County has been cut in half since early 2001. Encouragingly, employment has stabilized since November, but there is still no indication of substantial 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. A beneficiary, for example, is local optical equipment maker Triformix, which received a new funding round late last year to expand production capacity and business development. Although VC funding remains a fraction of what it was during the tech boom, California companies have experienced an 8% increase in VC financing over the last year. Biotech and medical instrument companies have experienced the strongest growth in VC.

Profitability. Thanks to rising sales and improved cost structures, profits have also rebounded for most technology firms. Near-term growth prospects are favorable thanks to a cyclical upturn in tech demand. In general, large equipment makers that count on telecom services companies for most of their sales continue to fare worse than networking gear companies that sell primarily to enterprises. Ongoing cost cutting and improving demand will result in rising profitability over the next several quarters.

Medical equipment firms are experiencing strong profitability thanks to robust sales. The medical devices industry will benefit from increased utilization of products thanks to demographic changes and a loosening of managed care restrictions. Profitability will also improve from greater capitalization of new technologies in the medical device industry.

Long-Term Outlook. Going forward, technological advances, easing of regulatory barriers and demands for data, Internet and wireless services all bolster the long-term outlook for communications equipment companies. Telecom investment will eventually return to more sustainable levels, with growth tied more closely to carriers' cash flows. In the meantime, some segments of telecom equipment have stronger prospects, namely broadband, IP technologies, metropolitan networks and wireless.

While it will take more time to overcome the current overcapacity in long-haul networks, significant bottlenecks persist in many metropolitan areas. Upgrading local infrastructure will not only fuel direct demand for local network equipment, but will also help absorb long-haul capacity; local upgrades allow more customers to use broadband capabilities and thus long-haul bandwidth. Moreover, as carriers become more cost-conscious, they will spend on equipment and software that boost revenues using existing networks.

Wireless carriers are adding more high-speed data functionality to their services, and will need to continue upgrading their networks to do so. Ongoing improvements and additions in the wireless services industry will stimulate demand for wireless networking 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. Upside risk remains minimal for the telecom equipment industry. The more rapid the rebound in sales and profitability for the telecom services industry, the more rapid the recovery in capital spending on equipment.

Bonus depreciation tax incentives that expire at the end of this year may be more powerful than expected, thereby prompting stronger growth in 2004; however, this would result in weaker growth in 2005.

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, generate further upside potential to provide personnel needed for local tech industries. Its BS program in engineering science will commence in 2005, adding further to local workforce quality and completing the stream of tech-based curricula that also is available at the junior college and high school level.

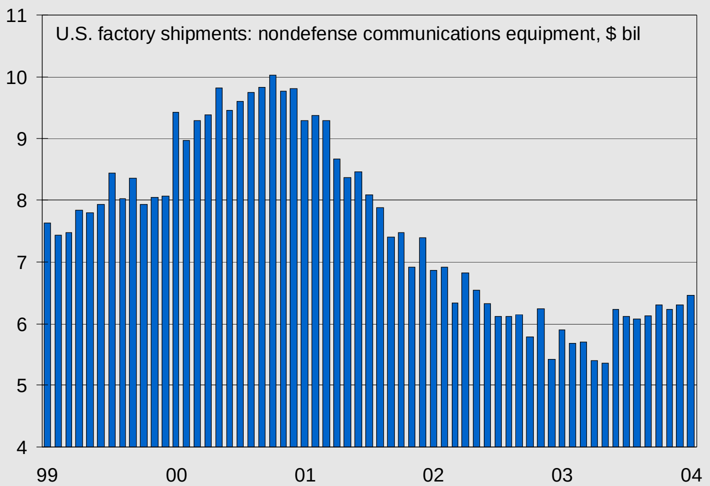
Downside Risks. There are several downside risks to the outlook. The budding rebound in demand for equipment from phone companies will quickly fizzle if demand for telecom services does not turn around more vigorously over the next year. Also, ongoing uncertainty surrounding the telecom service industry's regulatory structure could restrict telecom carriers' investment spending.

Consolidation among service providers presents a downside risk. If only a handful of telecom services firms is purchasing equipment, they would enjoy more bargaining power over prices.

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.

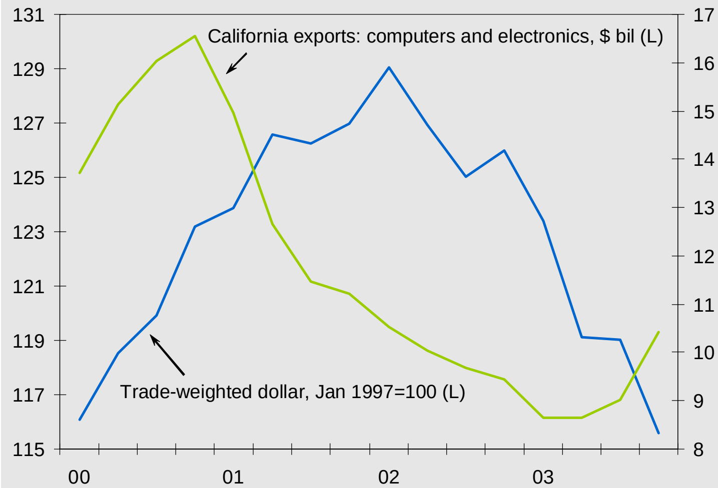
James Glen
March 2004

Modest Improvement in Demand



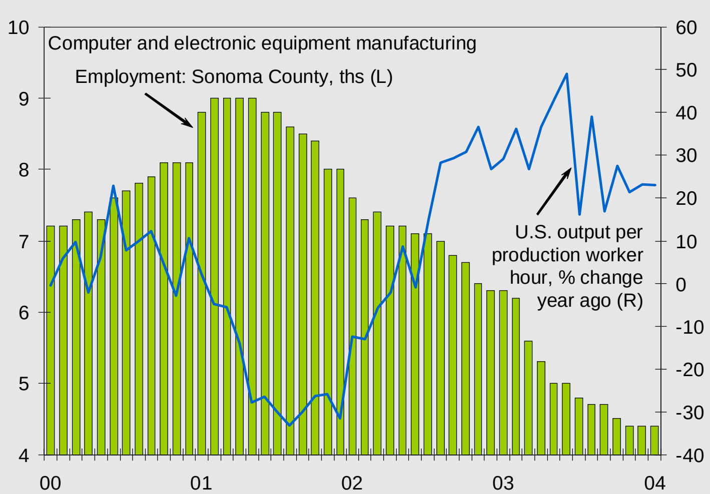
After its sharp contraction from late 2000 to early 2003, the telecom equipment industry is finally starting to show signs of life. U.S. factory shipments of communications equipment have climbed modestly since early last year, and are up by about 20% since hitting a seven-year low in May 2003. Nevertheless, shipments remain more than one-third below their peak in late 2000. Recent gains are stemming from a modest revival in capital investment from telecom services firms and renewed corporate spending on telecom equipment.

California Tech Exports on the Rise



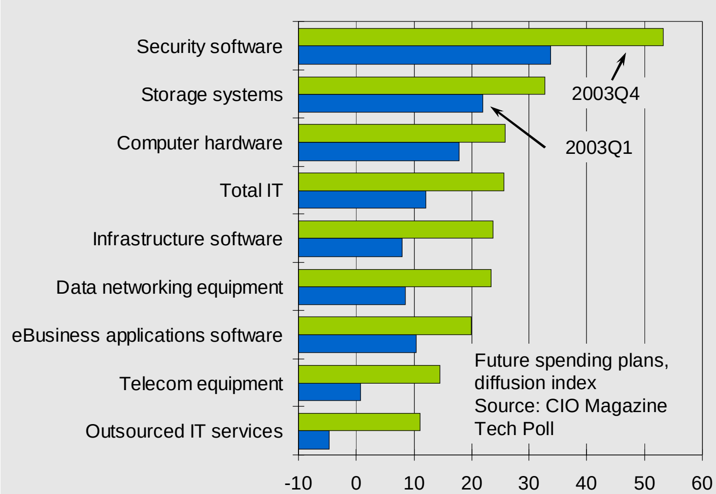
U.S. IT equipment producers are benefiting from rising foreign demand. U.S. exports of computer and electronics equipment, which include computers, telecom and networking equipment, semiconductors and other equipment, climbed by 13% in the fourth quarter on a year-over-year basis. California producers are also benefiting from this trend. California IT exports climbed by almost 11% in the final quarter of last year. Improving global economic conditions coupled with the depreciation of the U.S. dollar is supporting exports.

Productivity Is Restraining Tech Employment Growth



Although demand for IT equipment is on the rise, employment growth remains lackluster. Sonoma County IT manufacturing employment has dropped by more than one-half over the past three years. One reason that tech manufacturers have been able to abstain from hiring despite rising production is strong productivity growth. Growth in output per production-worker hour in the IT manufacturing industry nationwide is climbing at a 20% year-over-year pace. Further production gains may eventually translate into modest hiring.

IT Spending Plans Are Rising



One factor that is supporting current sales of telecom equipment is rising overall corporate spending on IT equipment and software. Businesses are growing more confident and, given their prime financial shape, they are increasing their planned spending on information technology, including telecom. According to the latest CIO Magazine Tech Poll, CIOs' spending plans have improved across the range of IT products and services over the last few quarters. Spending on telecom and networking equipment is not a top priority, but corporations still plan to boost spending on such goods.