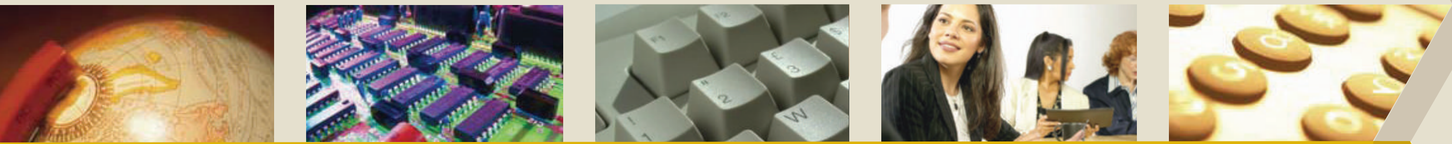


Technology Industry Report
Industries Insider

2014
SONOMA COUNTY

SONOMA COUNTY EDB
ECONOMIC DEVELOPMENT BOARD

SONOMA COUNTY WORKFORCE INVESTMENT BOARD

2014 Technology Industry Report

July 2014

The Sonoma County Economic Development Board (EDB), in partnership with the Sonoma County Workforce Investment Board, is pleased to present the 2014 Technology Industry Report for Sonoma County. Our research partner, Moody's Analytics, provided the research for this report.

Highlights of the 2014 Technology Industry Report include:

- High-value-added manufacturing and product R&D will be key for growth in the Sonoma County tech industry over the forecast horizon.The offshoring trend in lower-valueadded production will continue to sap employment in computer and electronics product manufacturing, further diminishing the industry's share of total employment in the area.

- Eventually, local tech manufacturing employment will level off while output rises further in response to rising demand. The result will be a shift toward higher-value-added production.

- Tech-related manufacturing in the area has largely held up. However, Sonoma County's technology industry has been slow to recover, compared with the rest of the local labor market. Tech employment is booming throughout the rest of California

Thank you for your interest in the Economic Development Board's research. For additional information, questions, comments, or suggestions please contact us at (707) 565-7170 or visit www.sonomaedb.org.

Sincerely,

Pamela Chanter

Pamela Chanter
Chair
Economic Development Board

Ben Stone

Ben Stone
Executive Director
Economic Development Board

Sonoma County: Technology Industry Report

Recent Trends

Sonoma County's technology industry has been slow to recover, compared with the rest of the local labor market. Tech payrolls grew steadily through 2012 but have since leveled off, and even declined in the first quarter of 2014. As a share of the county's total employment, the tech industry has contracted since its peak of 9.3% in early 2001, now accounting for only 4.5%. Meanwhile, tech employment is booming throughout the rest of California. In wage terms, the local tech industry has fared better, growing steadily since mid-2013. But the disappointing performance of the U.S. economy through the start of the year, coupled with lackluster earnings reports has weighed on hiring.

Tech-related manufacturing in the area has largely held up. The institution of a medical device tax last year has weighed only modestly on production at Medtronic's Santa Rosa-based stent plant, which maintains a large global market share in coronary stent sales and represents one of the largest tech employers in the area. Year-ago revenue growth in Medtronic's coronary division was up 4% over the three months ending in April. And new innovations continue to boost sales. Medtronic's recent acquisition of Ireland-based Covidien PLC has broadened its international client base while allowing the company to dodge tax hikes in the U.S. The company currently sits on a $20.5 billion tax-free cash reserve, which will fund further expansion abroad.

The Electronic Measurement division of Agilent Technologies, the county's largest tech employer, has provided less support of late. Revenue fell by 2.2% year on year for the segment in the second quarter of fiscal year 2014 after dipping 7% in the first quarter. However, new orders are rising steadily and suggest a stronger performance in coming quarters. In order to better manage the EM group's resources and effectively direct investment, Agilent will move the division into an entirely new company called Keysight Technologies later this year, maintaining its base of operation in Santa Rosa. A tighter focus on the EM line of business will enable more efficient expansion of capital, allowing the group to remain the industry leader in electronic testing equipment.

Some of the county's smaller tech firms have struggled lately. Broadband communications equipment and software provider Calix Inc. posted a 5.2% drop in revenue in the first three months of the year, relative to the same period in 2013. Yet, Calix has introduced a handful of new products since the start of the year, which will tap into rising demand for gigabit services in the near term. Petaluma-based Oculus Innovative Sciences, a wound treatment product manufacturer, also posted a 16% drop in product revenue in the fourth quarter of its 2014 fiscal year, which ended in March. What's more, Innovacyn has announced plans to phase out Oculus as a supplier by May 2015; though, the two are in talks to prevent a steep drop in revenue.

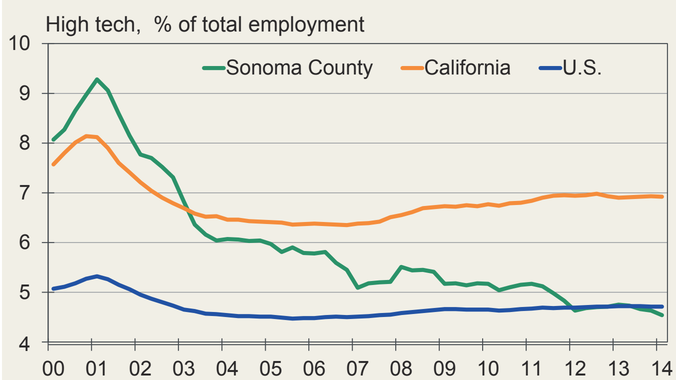
Macro Drivers

U.S. output growth is forecast to be around 2.5% for the rest of 2014, before ramping up to 4% by mid-2015. Job gains will accelerate, and the full-employment rate of 6% unemployment should be reached by the end of next year. The European recession is nearing its end, and trade flows are already strengthening. Though, the recent pullback in emerging markets is worrisome. Still, business confidence is building, and steadier growth in private investment is expected through the rest of 2014.

Having surpassed prerecession levels in May, U.S. payroll employment has fully recovered. Payrolls have risen at a rate of just over 200,000 a month since the start of 2014, which has eased the jobless rate to 6.3%. But there is still a lot of labor market slack, which is holding back gains in wages. The weight of a harsh winter on hiring seems to have lifted, but job growth among goods producers has waned. Employment gains in tech-related industries have weakened since late 2013, and the increasing popularity of offshoring among tech firms will remain a headwind to employment growth in tech-related niches.

GDP was less than stellar at the start of the year, contracting by a 1% annualized rate in the first quarter. Weaker equipment investment was partially to blame, as was a 9.8% drop in corporate profits. Growth in business investment on equipment and software has yet to return to prerecession rates. Some pickup is expected into 2015, now that the drag on private investment spending from sequestration has subsided.

Tech Employment Has Fallen Behind



Sources: BLS, Moody's Analytics

Sonoma County benefited for decades from a thriving technology sector, but this industry has languished since the bursting of the tech bubble in 2001. Tech payrolls in proportion to total payrolls have since fallen 5 percentage points to 4.6%, below the national average. Wages and output have experienced similar declines, though tech remains a relatively high-wage and high-productivity sector. This performance is in stark contrast to California as a whole, and especially to San Francisco and San Jose, where technology has led growth since the mid-2000s.

Macro Drivers (cont.)

But projected Increases in IT investment from 2014 to 2018 will fall behind the last boom between 2003 and 2007.

Venture capital is the primary catalyst for more rapid expansion in Sonoma County tech industries. According to PricewaterhouseCoopers, spending on venture capital shot up 8% in 2013, and investment since the start of the year has skyrocketed. Outlays to medical devices and equipment development were down last year, but have since rebounded. Meanwhile. software investment has grown steadily since the recovery began. The venture capital niche of investment tends to be more volatile, as risks are high, but the overall positive trend since mid-2013 is encouraging.

Exports will provide less support to local tech firms in the short run. Computer and electronics products, along with medical products make up a large portion of Sonoma County's exports. And signs of slowing in China and Japan suggest weaker IT exports. More broadly, the pullback in emerging markets is of increasing concern, as demand for telecommunications and medical equipment may dip as a result. And though conditions in Europe are slowly improving, it will take some time for demand to return to prerecession levels.

Industry Drivers

Expanding broadband and high-speed internet coverage in the U.S. and abroad will support Sonoma County's telecomm equipment firms in coming years. Rising demand for larger coverage areas and faster service for business, personal and educational uses will drive providers to expand their networks. And the recent approval of the Federal Communications Commission's $4.5 billion program to subsidize high-speed internet service installations will help to accelerate the trend, and support producers such as Calix.

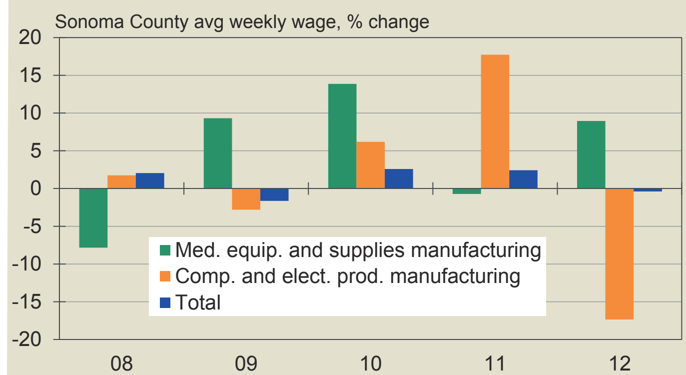
Robust growth in the smartphone market will drive electronic testing equipment producers in Sonoma County. Average phone prices will keep descending while producers expand their consumer base internationally. As smartphone demand increases and mobile processing power revs up, the need for new testing products and faster processes will follow suit, promoting expansion at Keysight. Global annual smartphone shipments passed 1 billion units for the first time in 2013, posting 39.2% growth over 2012. However, market saturation will likely cause sales to ease longer term. The International Data Corp. expects annual smartphone sales growth will slow to 6.2% by 2018.

Demand for medical device equipment will build, as demographic trends unfold and new advances come on line. An aging U.S. population will increase the frequency of heart disease diagnoses, raising demand for cardiovascular equipment such as stents manufactures at the Santa Rosa Medtronic plant. Likewise R&D in advanced heart disease treatments will open additional channels for the use of stents and other vascular products.

The Affordable Care Act will have mixed effects on Sonoma County's medical device producers. The influx of newly insured patients will increase the use of medical devices and wound treatment products. As the first state to adopt the federally sponsored public health exchange, California is at the head of the pack in terms of newly insured residents. Yet, the 2.3% excise tax now leveraged on medical device manufacturers is driving some producers such as Medtronic to transfer their holdings abroad. This will increasingly involve the offshoring of production facilities, which could threaten operations in Sonoma County.

Alternative energy presents another avenue for new R&D and infrastructure expansion in the area. California is one of the fastest-growing clean energy markets in the country, and Sonoma County residents are among its most active proponents. Sonoma is one of the leading counties in the U.S. in terms of installed or in-development solar capacity. And the increasing popularity of Sonoma Clean Power—a local clean energy-based electricity provider—
bodes well for further investment.

Local Tech Wages Have Fluctuated



Sources: BLS, Moody's Analytics

Although employment in Sonoma County's technology industry is not expected to return to the levels reached in the tech bubble, each job is progressively carrying more weight. The average worker employed in medical equipment manufacturing or computer and electronic product manufacturing earns more than double the wage of the average private sector worker in Sonoma County. Moreover, the gap has generally been widening over the years. This is a reflection of increasing job specialization as lower-value business functions are pushed to lower-cost locations..

Moody's Analytics Technology Industry Report

Pricing

Inflation among tech producers will be relatively tame in the short run. The increasing efficiency of semiconductor and electronics manufacturing processes will lower the cost of production, as will the trend of outsourcing of low-value-added production. As wage income growth ramps up and firms begin expanding capital with more fervor, stronger price gains are possible. But cost-saving trends should make for a subdued pricing environment.

Pricing for medical devices and equipment will rise more rapidly. Producers are passing some of the price increase from the new medical device tax onto consumers, while attempting to cut costs where possible. Rising demand from an expanding patient base and aging population will also drive prices higher.

Operating Expenses

Cost containment will remain a high priority among Sonoma County tech firms as labor and materials costs rise through the recovery. Having gone through multiple rounds of mass layoffs earlier in the recovery, tech producers have reached a floor in terms of workforce reductions. Now that tech payrolls are on the rise, it is more likely that alternative production methods and outsourcing will become the primary means to achieve lower input costs. Both manufacturing and R&D operations are increasingly offshored to foreign countries with more lax tax structures and lower labor costs.

Firming domestic labor costs will press on Sonoma County tech firms, though less so than earlier in the recession. Average weekly wages in computer and electronics product manufacturing rose 17.7% in Sonoma County in 2011 alone, according to the Quarterly Census of Employment and Wages. Since then, wages have slid back toward the national average, but steadier gains are expected. Wage earners in the local medical equipment manufacturing industry, however, make close to 70% more than the national average.

Operating Expenses (cont.)

While hiring temporary workers will help to alleviate rising wage costs, above average labor costs will persist in the county.

Profitability

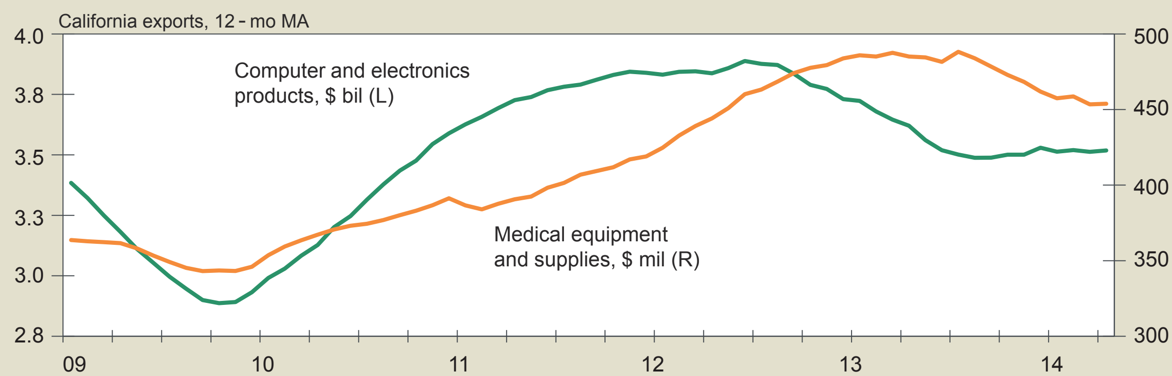
The profitability of Sonoma County tech firms will continue to rise in coming years. Strong demand for electronic testing equipment, medical devices and materials, and broadband network support services and other locally represented niches will persist, steadying revenue growth. With input costs rising more slowly, profit margins will remain high, even as past advances in productivity fade. Diversifying their product markets to emerging markets and expanding elsewhere internationally will also raise the share of profits from outside the U.S. for local tech firms.

Long-Term Outlook

High-value-added manufacturing and product R&D will be key for growth in the Sonoma County tech industry over the forecast horizon. The offshoring trend in lower-value added production will continue to sap employment in computer and electronics product manufacturing, further diminishing the industry's share of total employment in the area. Eventually, local tech manufacturing employment will level off while output rises further in response to rising demand. The result will be a shift toward higher-value-added production.

The expansion of R&D will be more fluid, as Sonoma County's proximity to other California tech hubs makes for a large, highly skilled labor pool and increased exposure to a fervent startup culture. Though this line of work tends to employ fewer people, it offers higher than average wages and often fosters spillover growth as investment flows into the area. However, the increasing cost-effectiveness of shifting R&D work to developing countries will weigh on potential employment locally as jobs move overseas.

Weakness Abroad Has Weighed on Exports



Sources: Census Bureau, Moody's Analytics

The risk of a renewed downturn, or even another financial crisis, in Europe remains the biggest threat to tech exports from Sonoma County. In addition to cutting down demand, another crisis would lead to a flight to safety among global investors. This would strengthen the U.S. dollar and make Sonoma exporters less competitive. There are also concerns that China, the destination of one-tenth of California's tech exports, will experience a sharper deceleration than anticipated.

Long-Term Outlook (cont.)

In terms of business costs, Sonoma County is relatively inexpensive. According to the Moody’s Analytics Cost of Doing Business Index, business costs have been on the rise since the recovery began. Still, local costs were lower than the California average by about 10% in 2012—the last year in which the index was calculated. The business cost gap with other tech hubs in the region, especially in terms of more affordable office space, will attract investors looking to set up shop.

Upside Risks

Cloud-based computing is one of the fastest-growing segments of the tech industry. And its increasing integration in both business and consumer applications would drive faster growth among broadband equipment developers in Sonoma County. The expansion of broadband connectivity worldwide and increasing fervor in consumer electronics markets would also boost demand for equipment testing firms, creating more opportunities for expansion.

The increasing popularity and application of green technology also presents potential for investment. Clean energy is catching on for residential consumers and in several industrial niches, raising demand for extra capacity and more efficient alternative methods of electricity generation. Other avenues of development could include more efficient heating, cooling and lighting solutions for buildings; more effective methods of water conservation; or new farming methods to make more efficient use of land and water resources.

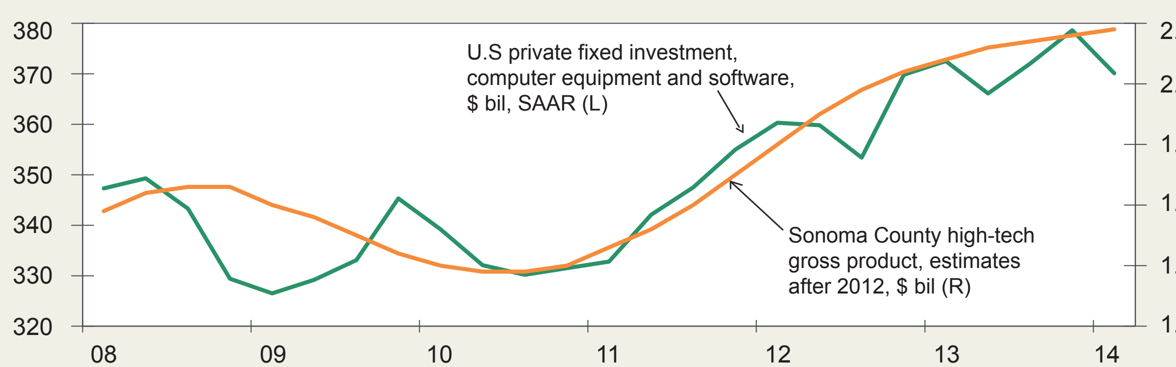
Downside Risks

Accelerated outsourcing in tech manufacturing poses the greatest downside risk to producers in Sonoma County. The medical device tax is already hampering investment locally and pushing manufacturers of health-related equipment to seek tax havens and move production segments abroad. The appeal of lower labor costs and development incentives in emerging markets could also advance this trend.

The future of the telecommunications industry is also uncertain, given the tone of recent discussions on net neutrality and online privacy in Washington. A pay-to-play system of bandwidth allocation could squeeze smaller telecomm firms out of the industry, as more established companies buy up more capacity. Additional government oversight in the realm of data sharing may also hinder development in the realms of networking and e-commerce.

Prepared by
Anthony Antonik
June 2014

Investment Bounce-Back Has Boosted Output



Source: BEA, Moody’s Analytics

Beyond the near term, stable growth in business investment will help drive the Sonoma County technology industry. The initial post-recession bounce-back in equipment and software spending has now faded as most businesses have met their pent-up demand for equipment. At the same time, most U.S. companies have amassed huge piles of cash thanks to their high profitability. Once the U.S. recovery gathers steam, businesses will put this cash to use, resuming spending on new technological equipment and hiring more workers to use it.

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With acknowledgement and appreciation to key local businesses that support economic development in Sonoma County

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