The Sonoma County Economic Development Board (EDB), in partnership with the Sonoma County Workforce Investment Board, is pleased to present the 2016 Technology Industry Report for Sonoma County. Our research partner, Moody’s Analytics, provided the research for this report.

Highlights of the 2016 Technology Industry Report include:

• Sonoma County’s technology industries are struggling to gather momentum. Though the pace of hiring at local IT and biotech firms has quickened in recent months, high-tech employment has not risen appreciably since 2012.

• The brisk expansion of wireless internet coverage and the push for faster internet connection speeds present an opportunity for Sonoma’s telecommunications firms to grow. Faster broadband speeds sought by households, businesses and schools will ramp up demand for fiber-optic network equipment produced by Calix.

• Sonoma County will remain a hub for R&D thanks to a vibrant startup culture and its edge in electronic testing, network equipment and medical devices, but tech employment will rise only moderately over the next few years.

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,

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Economic Development Board

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Executive Director
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Sonoma County: Technology Industry Report

Recent Performance

Sonoma County’s technology industries are struggling to gather momentum. Though the pace of hiring at local IT and biotech firms has quickened in recent months, high-tech employment has not risen appreciably since 2012. Growth in tech services has offset the decade-long slide in high-tech manufacturing, but this means that total tech employment has remained approximately flat over the past three years. Business formations in IT and biomedical research are starting to pick up, but spillover growth from the broader Bay Area tech boom has provided less of a lift to local tech firms than in neighboring Oakland and Marin County. As a result, tech’s share of total county employment has continued to decline after falling below the national average in 2013.

Job losses in high-tech manufacturing have eased, but the exodus of tech-producing jobs has not abated. Weaker growth in global smartphone shipments has weighed on revenues at Santa Rosa-based Keysight Technologies, the county’s largest tech employer. Though the firm booked a hefty increase in new orders in the first half of the year, rising local production has brought few new jobs because automation has limited the need for feet on the factory floor. Meanwhile, hiring at Medtronic’s Santa Rosa-based stent plant remains subdued. Despite surging sales of its locally produced balloon catheter, the firm continues to shift production to lower-cost centers in the U.S. and overseas following its re-incorporation in Ireland last year.

Tech-related professional services have fared better. Employment in life sciences re-search has grown steadily over the past three years as local biotech firms expand research and development operations in the county. Medtronic’s Santa Rosa-based cardiovascular unit has brought several new products to market over the past year, and robust demand for new innovations has driven a modest increase in hiring of research staff. Software publishing and computer systems design employment is growing once again. However, Keysight’s decision to locate its new software development facility in Atlanta will mean that the county will miss out on several hundred high-paying R&D jobs, making the road to recovery all the more steep.

The performance of Sonoma County’s smaller tech firms is a bright spot, but recent expansion has yet to move the needle on employment. Revenues at broadband equipment maker Calix grew an impressive 8% last year as network providers competed to offer higher connection speeds, juicing demand for broad-band equipment. The introduction of a new product line to enable fiber-like speeds in older buildings has proved especially popular and has helped bolster the firm’s overall market share in broadband devices. Meanwhile, the financial performance of wound treatment firm Oculus Innovative Sciences has improved following the spin-off of its animal care and infectious tissue business units last year, and a tighter focus on its core wound treatment products will enable a more efficient expansion of capital.

Macro Drivers

The U.S. economy is performing strongly despite headwinds from declining energy investment and sluggish global expansion. While energy and trade will drag on growth in the near term, consumers are stepping up to the plate and will do more to lift the economy through the remainder of the year. The Moody’s Analytics forecast calls for the economy to advance by around 2% in 2016 on the back of greater consumer spending and a stronger recovery in residential construction.

Investment in software and IT equipment has been less than stellar over the course of the business cycle, as job market slack has enabled firms to delay outlays for labor-saving technologies. However, this will begin to change as the economy reaches full employment and wage growth accelerates. Despite the low jobs tally in May, the economy has added around 150,000 jobs on average during the first five months of the year, bringing the labor market to the verge of full employment. With wage growth already showing signs of liftoff, the higher cost of labor will push firms to spend more on software and IT equipment.

Venture capital will continue to be a catalyst for growth for Sonoma County’s software, IT equipment and biotech firms. Though the Federal Reserve has begun to normalize monetary policy, the cost of capital will rise only moderately as the weak global recovery and below-target inflation slow the pace of future interest rate hikes. Though total venture capital placements in Sonoma County declined in 2015, outlays for telecommunications and medical device manufacturers have risen steadily over the course of the recovery. On a per capita basis, venture capital funding ranks among the highest of California counties, and access to seed funding will help local biotech startups gain traction.

Sonoma Lags Bay Area in Tech Recovery

High-tech employment, precession peak=100

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High-tech employment in Sonoma County is advancing weekly, in contrast to the boom in tech jobs and investment in the Bay Area and the steady recovery in tech employment nationally. Though high-tech manufacturing is finally beginning to stabilize after a decade of decline, tech services are recovering only gradually. Large tech firms such as Keysight Technologies and Medtronic maintain a sizable research presence in the county but will contribute only modestly to growth as low-cost centers in the U.S. and overseas capture an increasing share of high-tech research and development.
Macro Drivers (cont.)

Sonoma’s IT equipment and medical device makers will rely less on exports in the near term as the strong dollar and weakness in emerging markets weigh on sales. State exports of computer, information processing, and medical equipment have contracted sharply over the past 18 months, and monetary easing in Japan and Europe will extend the dollar’s run, to the detriment of local tech producers. Though the recovery in Europe has finally begun to find its legs, the strong dollar and slower growth in China, emerging Asia and Latin America will drag on tech exports through the end of this year.

Industry Drivers

The brisk expansion of wireless internet coverage and the push for faster internet connection speeds present an opportunity for Sonoma’s telecommunications firms to grow. Faster broadband speeds sought by households, businesses and schools will ramp up demand for fiber-optic network equipment produced by Calix. Greater investment in broadband infrastructure by state and local governments will be an additional source of growth. The Federal Communications Commission’s reclassification of internet bandwidth will stimulate investment in networking equipment, as internet providers will have to offer a minimum connection speed of 25 megabits per second to legally market their services as broadband.

Though growth in global smartphone shipments is softening, the race to develop fifth-generation wireless networks, which is under way, will spur demand for signal analyzers and other electronic testing equipment produced by Keysight. Global smartphone shipments surpassed 1.4 billion units in 2015, according to the International Data Corp., marking a 10% increase over the prior year. Though growth will downshift over the next few years as smartphone penetration increases, the advent of other next-generation communications devices such as smartwatches and automobile touch screens will spur expansion at the electronic testing giant.

The impact of the Affordable Care Act on Sonoma’s tech producers will be mixed. Healthcare reform has significantly broadened the pool of California residents with insurance coverage, and greater access to health services will help drive demand for medical supplies and equipment. As the U.S. population greys, increased diagnoses of arterial diseases will prime demand for stents produced by TriVascular and Medtronic. However, the 2.3% excise tax levied on medical devices, a provision of the ACA, will pose a downside risk and could push producers to shift an even greater share of production to lower-cost facilities in the U.S. and overseas. Though the levy was suspended this year, it will likely return and thus will keep costs elevated in the medium term.

Alternative energy offers another avenue for growth. Sonoma is one of the leading counties in the U.S. in terms of installed or in-development solar capacity. The expansion of Sonoma Clean Power, a local provider of energy from clean sources, bodes well for growth as neighboring counties seek to emulate the firm’s success in lowering emissions and in reducing electricity rates.

Pricing

Falling prices for semiconductors will limit pricing power for Sonoma County’s tech producers in the near and medium term. Recent consolidation in the global semiconductor industry will lower input costs, while the strong dollar will further suppress the cost of imported electronic components. Rising competition in the telecom and electronic testing equipment industries will also put the brakes on prices for IT equipment as firms compete more aggressively for customers.

Prices for medical devices and biopharmaceuticals will move in the opposite direction. The advent of gene-based drug therapies along with greater demand for more personalized medical treatments will allow medical device and drug makers to raise prices. An aging U.S. population will further firm demand for medical devices, allowing producers to pass along much of the cost of the medical device tax to consumers.
Operating Expenses

Labor expenses make up by far the largest share of operating costs for Sonoma County tech producers, and wage pressures will continue to build as the national expansion strengthens. Though the 2001 tech bust swept away much of the county’s high-tech manufacturing base, surviving plants specialize in high-value production. As a result, worker compensation is significantly higher than the national average. Production workers in the local medical device and electronic testing industries earn, on average, nearly 70% and 20% more, respectively, than their national counterparts, according to the Quarterly Census of Employment and Wages, and wage growth will continue to accelerate as the labor market tightens. Increasing outlays for R&D will increase wage and salary expenses, although the growing feasibility of conducting R&D in emerging markets will temper local workers’ bargaining power.

While a concern, the medical device tax has yet to strain profits thanks to firming pricing power at TriVascular and Medtronic. Overseas markets will provide less support in the near term, but the large global footprint of Sonoma’s leading tech producers will be an advantage as an aging population props up demand for medical devices globally and as broader internet coverage bolsters sales of electronic testing and network equipment.

Long-Term Outlook

Sonoma County will remain a hub for R&D thanks to a vibrant startup culture and its edge in electronic testing, network equipment and medical devices, but tech employment will rise only moderately over the next few years. Tech’s long-run prospects will hinge on firms’ ability to overcome an unfavorable cost structure and an emerging shortage of skilled labor. While business costs are low relative to the county’s Bay Area peers, the Santa Rosa metropolitan area—composed of Sonoma County—ranks among the most costly of U.S. metropolitan areas, according to the Moody’s Analytics cost of doing business index. Local tech wages have risen in tandem with those in other Bay Area counties, and high unit labor costs will pose a hurdle to the relocation or expansion of new and existing firms.

The strong dollar and the uneven global recovery will be powerful headwinds for Sonoma’s tech producers. Though European economies are starting to regain their footing, growth is slowing in Latin America and emerging Asia. The downshift in China’s economy is a particular concern, as the country is the destination of one-tenth of California’s tech exports. Monetary easing in Japan and Europe will further extend the dollar’s run and will increase the cost of locally produced medical and IT equipment in foreign markets, including China.

While Sonoma’s labor force is relatively skilled, newly minted engineering graduates are in short supply. Efforts by local tech firms to cultivate engineering talent at Sonoma State University could help alleviate the shortage of younger engineers and software developers in the medium term. However, the shortage of homegrown talent will make it more difficult to compete with emerging tech hubs such as Atlanta, San Diego and Provo UT for jobs and investment over the next few quarters.

Profitability

After several lean years, the financial performance of county tech firms will strengthen as demand for electronic testing and other IT equipment ripens. Though rising labor costs will exert downward pressure on margins, falling semiconductor and electronic component costs will be a net positive for firms’ bottom lines. With computer chips and other electronic component costs rising more slowly, firms will be able to channel a larger share of cash to R&D, broadening the pipeline of innovations in the medium term.

The globalization of R&D will bring both challenges and opportunities. As emerging markets continue to scale the value-added chain, the globalization of local research operations will put additional local tech jobs in peril. However, Sonoma tech firms also stand to benefit as Asia and Latin America undertake an increasing share of global R&D. As outlays for R&D increase, demand for electronic testing equipment will follow suit, bolstering sales at Keysight and other county IT equipment makers. Longer term, rising incomes and greater demand for broadband access in emerging markets present an opportunity for local broadband equipment makers such as Calix to expand globally.
Upside Risks

A faster than expected global recovery would bolster local tech producers and deliver a boost to electronic testing equipment and broadband equipment makers in particular. The great migration to cloud-based business solutions is fully under way, and greater demand for gigabit networking speeds would be a boon for Sonoma County’s broad-band equipment makers. A faster than expected transition to fifth-generation wireless net-works would bolster sales of signal analyzers and other electronic measurement equipment produced by Keysight. Finally, if greater enthusiasm for wearable tech spurs faster growth in consumer electronics, demand for testing equipment would strengthen further.

Renewable energy and green tech will be an additional source of upside risk. Electricity provider Sonoma Clean Power is now the county’s largest supplier of electricity, and efforts in surrounding counties to emulate its success could drive further growth. Though California’s drought has showed signs of easing, efforts by county vintners to electronically monitor rainfall could spur synergies with local IT equipment makers.

Downside Risks

The outsourcing of tech manufacturing poses the greatest risk for Sonoma County’s technology industry. As emerging market producers scale the value-added chain, the outsourcing of more capital-intensive manufacturing will become increasingly cost-effective, putting additional pressure on Sonoma’s high-tech manufacturing base. High corporate taxes pose a further risk to high-tech manufacturing, making it more likely that companies will deploy cash reserves to ramp up production overseas.

A strong dollar and slow global growth will be near-term head-winds for export earnings. Exports of electronics and medical device equipment began to slow as global demand slackened in mid-2014 and continue to limp along. By making U.S.-pro-duced goods more expensive, a stronger than expected dollar would further weigh on growth, depressing Sonoma County’s contribution to state exports.

Jesse Rogers
Moody’s Analytics
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