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## Finding new ways to grow in Silicon Valley

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While established Silicon Valley companies weather the recession as best they can, newly emerging tech pioneers are showing the way back to economic growth.

Many of yesterday's moneymakers remain mired in hiring freezes and job losses. Two of the high-tech areas that lost jobs in 2008 — semiconductor and computer equipment manufacturing — have seen the pace of job losses intensify in recent months.

However, companies in fields such as biotechnology, nanotechnology and genomics are helping the tech industry in Silicon Valley find ways to flourish anew.

"The stock performance of major life science firms in the region is amazingly strong considering the overall market is down by 20 to 40 percent in the last 12 months," said Matthew Gardner, president and chief executive officer of BayBio, a nonprofit trade association serving the life-science industry in Northern California.

"We also see an enormous amount of investment coming into the industry, especially for the next generation of companies in genomics and related technologies," he said.

Mr. Gardner said these investments will inevitably translate into job growth.

BayBio estimates that the San Francisco Bay Area has the largest cluster of life-science firms in the world with more than 1,300 companies and 30 added every

year, directly employing about 100,000 people. In the whole of California, there are about 1.4 million people employed in this sector directly and indirectly.

Any short-term optimism based on how well certain companies performed during one quarter or another may not be as significant as the fact that overall long-term outlook for high-tech employment is very bright, said Amar Mann, regional economist at the San Francisco Regional Office of the U.S. Bureau of Labor Statistics (BLS).

Although economists are cautious, many laid-off workers in the high-tech field hope to get back to work as early as this Christmas.

"Given the positive outlook prevalent here, I am pretty sure I will be able to find a full-time job by this Christmas," said Susan Rokkala, who works in the financial-software industry. Ms. Rokkala found a part-time job last week after being laid off from two other jobs this year.

Yathiraj Bhumkar had been working in the field of computer-networking technology for more than three years. Mr. Bhumkar was laid off in January along with about 40 others and had to return to his home in India to avoid overstaying his visa.

"I am keeping track of new developments in Silicon Valley, and I see that the job situation is getting better. I really look forward to coming back to Silicon Valley, at least by the end of the year," he said from Baroda, India.

Mike Williams, president and chief executive of West Valley Staffing Group, a high-tech staffing company that conducts its own quarterly surveys on hiring trends in Silicon Valley, said several of his clients are beginning to talk about hiring now.

"In the third quarter of 2009, there has been a moderate increment in recruitment needs, especially in computer and Internet-based technology," Mr. Williams said. "We look forward to the fourth quarter and project continued growth and uptick, especially in Silicon Valley. We get a good, optimistic feel from our clients that there is significant amount of pent-up demand in this sector," he said.

Among the fast-growing biotech firms are Gilead Sciences Inc., a research-based biopharmaceutical company; and Genentech Inc., a company that is considered the founder of biotech industry.

In genomics and the technology around it, firms moving forward despite the current economic meltdown include Complete Genomics, a firm focusing on complete human genome studies and genomic medicine; Pacific Biosciences Inc., a company involved in commercializing DNA sequencing technology and sequencing of individual genomes as part of routine medical care; and Fluidigm Corp., a firm dealing with molecular diagnostics, personalized medicine and wildlife conservation.

In nanotechnology in the Silicon Valley region alone, there are more than 50 firms now specializing in those fields, says Lloyd L. Tran, president of the International Association of Nanotechnology in San Jose.

"Very few of these companies have actually laid off their employees. Many of them, especially the start-up companies, are beginning to hire now," Mr. Lloyd said.

Solyndra Inc., a nanotechnology firm manufacturing innovative cylindrical photovoltaic systems, is the first company to receive an offer for a U.S. Department of Energy loan guarantee under Title XVII of the Energy Policy Act of 2005. The company announced it will use the \$535 million loan to expand its solar panel manufacturing capacity in California creating thousands of jobs.

The current upswing in confidence reflects the fact that the emerging fields, — including biotechnology, scientific research and design, and internet-based technologies — are becoming established as sources of potentially lucrative jobs.

"The early part of 2009 was encouraging in terms of job growth in the Silicon Valley high-tech industry. Though there are some job losses in certain sectors since late spring this year, companies in biotechnology, scientific research and design, pharmaceutical research and Internet search tend to remain stable," said Mr. Mann.

According to Mr. Mann, employment changes in computer system design have remained positive, and biotech and nanotechnology, which are part of scientific

research and development, have remained stable. Computer-system design employment stood 0.2 percent higher in August 2009 than in August 2008. Also, scientific research and development employment has only fallen by 1.0 percent since last year.

Among the high-tech giants avoiding large-scale job cuts is Intel Corp., the world's largest semiconductor chip maker responsible for the rapid growth of the PC industry through its microprocessors in the '90s.

Tom Beermann of media relations at Intel Corp. said the company has focused on discretionary spending, including travel, to avoid job cuts.

"We went through a major reorganization in 2006 that has set us up to be able to weather the current economic downturn without job cuts. We did indicate earlier this year that we would be shutting down some older factories around the world, but there haven't been any large scale job cuts," he said.

According to a recent exclusive BLS report on Silicon Valley high-tech employment, 2008 was actually a good year for the sector and, in fact, added well over 10,000 new jobs.

Between 2001 and 2008, there was 32 percent job growth in the private sector pharmaceutical industry, and a 26 percent increase in jobs in biotechnology and other life sciences. The report indicates that despite the high cost of doing business here, the Silicon Valley region continues to be the epicenter of innovation and that the high-tech industry with its broadened scope remains the prime source of job growth in future, as well.

"These emerging fields are continuously redefining the already evolving high-tech landscape of Silicon Valley," Mr. Mann said. He also pointed out that Silicon Valley high-tech industry hasn't been affected by this recession as acutely as other industries such as financial industries, manufacturing and construction. Job loss in the high-tech field has been very small compared to the overall job loss.

Another report, published by California Employment Development Department (EDD), found that Silicon Valley's unemployment rate declined to 11.8 percent in September from a revised 12.1 percent in August this year. The situation for the high-tech sector in recent months has been better than the overall picture.

According to EDD data, jobs in scientific research and development remained stable in July, August and September, compared to a 0.5 percent loss during June and July. Yearly job loss grew by 4.0 percent for this field, which is part of the professional and business services category of high-tech industry. Although the aerospace field lost some jobs during July and August, it is still in the positive arena of 1.2 percent yearly growth. However, for other conventional-type high-tech fields such as semiconductor and electronic component manufacturing, semiconductor and related-device manufacturing and chemical manufacturing, the yearly job loss remains high; still monthly data shows it is getting better.

Electronic computer manufacturing rose by 1.2 percent in June and July and gained another 0.6 percent for July and August and August and September. Although computer and peripheral equipment manufacturing fell by 9.1 percent or 200 jobs in June and July, this industry held steady in July and August and August and September.

"To me it looks like we are inching up over the month in several high-tech fields, but, of course, over the year we are still down more than we would like to be," said Janice Shriver, a state labor consultant at EDD.

In Silicon Valley, the economic downturn has an upside, too. Robert I. Sutton, professor of management science and engineering at Stanford University and author of four books on management science and innovation, says the valley is rich with early-stage start-ups now because talent and real estate have become cheaper and these companies will be the engine of job creation, as in the past.

As costs shrink, experts point out that it is becoming increasingly easy to create and terminate firms. Creativity and innovation are not just the new corporate mantra but preconditions for sheer survival of these companies.

"It is interesting to see those that are doing well versus less well. Apple and Intel are doing well because they are innovating well. Both are very careful about costs and have world-class supply chains and the like, but they are using the downturn to innovate like crazy," Mr. Sutton said.

"Silicon Valley companies are the leaders in innovation in nanotechnology, which is confirmed by large number of patent filings from this region," said Mr. Tran.