Sonoma County now has another piece of what some executives refer to as a self-sustaining economic ecosystem.

That piece is an undergraduate program in computer engineering at Sonoma State University announced last week and immediately embraced as a breakthrough by many of the region's technology companies.

The bachelor's degree, in addition to an existing master's program, is something technology companies have long sought to help them attract new talent and to provide mid-career education for existing professionals.

The university already has a master's degree program funded by $8.5 million in donations from technology companies. The 3-year-old program includes the Cerent Engineering and Science Center stocked with top-notch gear.

But for the tech industry and Sonoma County in general, approval of the bachelor's degree program is the clearest sign yet the university has stepped beyond its historically strong liberal arts foundation into engineering and the sciences.

It also is recognition of what many educators now see as increasing interconnectedness between the sciences and the arts. Knowledge of philosophy, for instance, is essential to understanding ethics of science and technology research and applications. Knowledge of both economics and the science of disease are inseparable today from any attempt to help developing nations prosper.

With telecoms now signaling a tentative turnaround from a wrenching shakeout, the SSU degree programs can only help make the local industry stronger. For the university, it will benefit if it is seen throughout the community and beyond as a center of expertise and research in engineering science.

The university's solid reputation in the liberal arts actually should end up helping engineering school undergraduates who have to take history and literature as part of their
general education requirements. Technology companies, after all, want employees with a broad education.

But there are other pieces beyond a strong university that are needed for an economic ecosystem to be self-sustaining. Sonoma County has some of the pieces, but not all.

The county is strong in access to the capital that companies need to grow and expand. The region has a variety of local, state and nationwide banks as well as sources of venture and angel funding.

And while mergers and buyouts create uncertainty, they also put money into the hands of entrepreneurs and dreamers who want to start their own companies.

Sonoma County is still reaping the benefits of startups and wealth created from more than $15 billion in technology and biomedical buyouts from 1998 to 2000.

Meanwhile, the county is rapidly developing clusters of companies in key areas such as telecom, biotech, finance, food, wine and medicine. If they are allowed -- even encouraged - - to continue to expand, the region could become a magnet for the kind of top talent that thrives on the opportunities growth creates.

But important pieces of the economic ecosystem are missing. The county's infrastructure, especially its highways, are strained. And state tax law continues to penalize technology investment over more traditional machinery, a local official who is following the issue said Friday.

So SSU's new engineering degree is a good step. But there is a lot more to do before a self-sustaining economic ecosystem in Sonoma County can reach full bloom.

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