Stanford eCorner

Emerging Long Waves of Research and Industry

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In addition to his focus on clean technologies, Mohr Davidow Ventures VC Erik Straser has his eye on other global trends capable of significant macroeconomic consequences. Biofuels, bioengineering, more quantitative study in medicine, and the exploration of lifestyle diseases, in Straser's analysis, all present the seeds of future entrepreneurial endeavors.

Transcript

What are the other long waves that you pay attention to? Obviously, you're not solely spending 24x7 in just the clean tech area. I think one of the advantages of having a diversified venture firm where we practice across information technology, life science and clean tech, is we're able to harness the intersections of those. So if you think about biofuels or bioengineering, that has applications in clean tech ,but it also has applications in life sciences. So where appropriate, we interact. Solar looks a lot like early semiconductors, so lessons in competency in semiconductors often bleeds over into the solar and manufacturing aspects of photovoltaics. The other long wave I think that we have here before us is along with making hundreds of millions of more middle class consumers, we've basically set ourselves up to have a set of lifestyle diseases. I think if you look around and you look at the amount of obesity and the amount of lifestyle problems that people have - One of the most interesting things I did a couple of years ago, I came down here to campus and I looked at some of the newspapers that were at the turn of the last century, and one of the big concerns about 100 years ago was we were not going to be able to feed people on this planet. There simply was not enough high-quality farmland to produce crops and therefore food for all the people that lived in the cities. So we were going to face significant problems coming into the 20th century. With the advent of fertilizer, that problem just went away.

Technology came to the rescue and solved the problem. It solved it so profoundly that we now have a global obesity epidemic. It crushed that problem, right? The same way that 25 years of venture investment crushed all the telecom and networking problems. Not all of them but the amount of bandwidth you get sitting here in this room compared to even when I was just sitting in this chair 14 years ago is tremendous. The fact that it's free is insulting. Somebody's got to be make money somewhere, right? The challenge I think for us is to better manage lifestyle conditions and to better understand how our bodies work as a quantitative science. Today, we're at a very earliest of stages. We still don't know why we give cancer treatment A or B to a person. We still don't understand some of the basic mechanisms of how our bodies work. And because of that, we do things that in retrospect from today just look silly.

I'll give you an example. About 30 % of cancer treatments don't work and they don't find out that they would not have worked until the cancer becomes more developed. That's because there's no diagnostics today to tell the doctor whether they should give you treatment A or treatment B. So they basically make an educated guess but in the meantime, your cancer has developed two or three months farther. That's just a lack of technology that can't tell the doctor or provide any diagnostic at the molecular level about who you are specifically separate from the person that's sitting next to you. Because of that, we apply these very broad brushes in medicine today that make no sense if you actually understood people's genetic makeup. So if you look at a lot of what's happening here on campus and happening at some of the best research universities, it's how do we take biology. Which, if you think about your biology courses, we're always separate from the rest of your engineering and hard-core sciences because it was much more of a liberal art as a scientific area. There was a lot of be learned and it was basically

memorization, here's how we think it works. And you think about your hard sciences were much more experimental-driven because there's actually the laws of physics are understood the laws of chemistry for the most part are understood, inorganic chemistry as a fairly well defined field.

Biology is very much not. So I think the other long wave that sits right before you is how are we going to deal with and provide solutions for basically our lifestyle diseases which are going to dominate, I think, the next 20 to 50 years. Think about it, 150 years ago, people didn't have Subway and Quiznos and everything sitting right outside their door, right? People actually had to work to find food. Today, it's just everywhere around. Calories are just taken for granted. I think figuring out how to fix that and better manage that will be a huge business.