How and Why of Promoting Entrepreneurship Abroad
Hoover Institution
Stanford University

John Hennessy: What Drives Silicon Valley's Success?

Carl Schramm: Now, my next task is to introduce President Hennessy. That's going to be very quick and very easy. *[Applause]* I'll just say one thing about President Hennessy who obviously this is his building, so he hardly needs any introduction. I think I've only done this before, but I want to say something I hadn't said before about President Hennessy and Stanford.

Universities come and go. Their fortunes rise and fall. When I began my life, certain universities were more famous than they are now. Other universities are less famous than they are now. Through this whole period Stanford has been one of the few universities that has gotten progressively more powerful, stronger and built a grander and grander reputation. My analysis is that leadership counts and Stanford has been blessed by a series of good presidents that other universities have not been wise enough or lucky enough to have had. The current President stands in the line of many, but he, as an entrepreneur, as an engineer, and most importantly as a visionary, who has understood the essence of what higher education is, what this Valley is, what this situation is, where America stands in the world and the role that this particular university plays in that whole social and economic matrix has distinguished himself as perhaps Stanford's best president. And so it is my honor to introduce my friend, John Hennessy.

John Hennessy: Okay, thank you Carl that was overly generous, but it was an introduction that my mother would believe and my father would be proud of.

How can we build an ecosystem like that between Stanford University and Silicon Valley? That is the number one question I here from visitors from outside the United States, who come to our campus; it's the number one question I hear as I travel around the world. I hear it from academic leaders, I hear it from government leaders, I hear it from business leaders, I hear it on six out seven continents, and if penguins could only speak, I am sure I would here it there. After all look at the terrible life, those Emperor penguins have. They need a little innovation, a transport system, something to make their life a little easier.

I think our friends at the Kauffman Foundation, my colleague Tom Byers have done an exceptional job of trying to help educate the world about how the entrepreneurial model works. The more difficult problems are rethinking core parts of the ecosystem. The role of universities, I always bring up the role of universities as you might expect in my talk about entrepreneurship, but I think that role has increased by leaps and bounds over the last few decades. Why? Well the great central research laboratories, the Bell Labs in the United States, the Xerox PARCs, even the IMB research, which once had a very long term fundamental research mission had vanished or been greatly reduced.

Government research labs have proved that they are not the answer. They become inherently risk adverse in their nature. They don't understand the balance between commercializing something and building a one off in the research laboratory, which turns out it rarely, extends to

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a commercial product. Universities have to play that role as the source of innovation. Then we begin wherever I am talking about universities and they point out well they have ten good universities or twenty or two depending on whether I'm in Africa or if I'm in China, they have two hundred good universities. I point out as my friend Alberto likes to remind us that the Bay Area has two great universities. Two magnets for talent and faculty and students. Magnets that bring the best and the brightest from around the world. That's the difference. Ten good universities does not make an entrepreneurial center. One or two great universities makes an entrepreneurial center.

Of course long term government research funding has been the other secret fuel in this sauce and I emphasize, long term, funding that is flexible. Many of you probably know that Google began as a project to learn how to search digital libraries. It was only after they realized that the same mechanisms for searching libraries would apply to the internet, that they built the world's best internet search engine. Yahoo! was a project done by a couple of students on the side, they were actually working in Alberto's area in CAD and Giovanni De Micheli, who formerly worked with Alberto at Berkley was on sabbatical when Dave and Jerry built the Yahoo! prototype in their spare time.

It's a reminder of the role of serendipity of creativity in the whole process. I think one of the other unique parts of our ecosystem has been the mutual respect that's existed between the academy and industry. Something you find missing in so many parts of the world where the academics think of industry as dirty and demeaning and the industry people think of the academics as out of touch with the real world and sitting in an ivory tower. That misses the vital interaction, the symbiotic interaction that really has made Silicon Valley so successful.

And of course, there's taking and tolerating risk. Something we instill in our students from the very beginning and that they understand very well, but a challenge in so many other parts of the world. It's not just the risk that the investors take; it's the risk that the individual takes. What happens to their career if they go to a startup company and the company fails? Is their career over, have they lost their opportunity?

Some of the most important examples in Silicon Valley are not the companies succeeded; they are the companies that failed because they trained the next generation of entrepreneurs to be successful. So I believe this model is a critical one in terms of building new opportunity in creating the vibrancy that has come at Silicon Valley, but I also think it is going to be one of the most important tools for making our world better and I want to close just by telling a little story about that.

A few years ago we started a new course at Stanford called, "Entrepreneurial Design for Extreme Affordability." The joint course taught by faculty in the Engineering School and the Business School over two quarters. The students are given a challenge to find a problem to find a problem in the developing world and design a new product to solve that problem at a price point that works in the developing world. Last year one of the most remarkable examples that came out of that course involved a group of students who went to Nepal and parts of Tibet and discovered

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that in the remote areas one of the major problems that young mothers and families faced was babies who were born under birth weight.

Under birth weight babies die primarily in the first week or so from hypothermia, because they can't maintain their own birth weight. In the United States, we have a simple solution, we buy an incubator, we plug it in, we put the baby in an incubator and we keep the body temperature constant and the baby is just fine after a few weeks. You're in a remote area of Tibet, it is an eight hour walk to the nearest bus stop and than a fourteen hour bus trip to the nearest hospital and oh by the way they may not even have an incubator because they do not have consistent electricity there. Babies don't make it. Well, what about taking a Western incubator? Well where is the electricity? Twenty thousand dollars in a small village…totally unacceptable solution. So the students set about brain storming on a new design. What could we do? How could we find a solution?

They came up with some interesting, clever ideas. They took the idea of a sleeping bag, a mummy style sleeping bag, and shrunk it down to the size of the baby. Helped, but wasn't quite enough to balance the babies' temperature and keep it consistently warm. So they then, actually collaborated with the group of colleague students at MIT, discovered a wax substance that could be put in a plastic bag, boiled in a pot of water, and would retain constant temperature for four hours. You could slip that in a little slot behind the sleeping bag and maintain the baby's temperature for four hours. After that, you got out took the bag of wax and dropped it in the boiling water again. Waited about two minutes, pulled it out, stuck it back in. And in that way, the baby's temperature could be maintained at a constant rate for several days, while better medical care was looked for.

The price of this alternative design, not $20,000, not $2,000, not $1,000, not $100…$25. That's the kind of breakthrough that can change thousands, if not millions of lives. Next week this group of young Stanford entrepreneurs, a graduate from the Business School and the Engineering School will go to India to prototype and begin clinical trials of their product. That's entrepreneurship that will make a difference around the world and that's the kind of magic that I think the entrepreneurial spirit can bring to lives, not only in this country, not only to economic growth, but can improve lives around the world.

Thank you for coming to the conference and I hope you found it beneficial and we look forward to seeing all the young entrepreneurs that you are going to nurture around the world. Thank you.

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