

A Call for Urgency and Passion

Cleantech Venture Capital in Silicon Valley and Germany

To teach the dangers of exponential growth, this riddle is told in France: A water lily plant is growing on a pond. Every day, the water lily covers twice the area it has covered the day before. If you let it grow over the whole water surface, all other plants and fish in the pond will die. So you decide to let it grow until the lily covers only half the surface. Question: How long do you have to avoid disaster? Answer: Only one day.

by Tom Schulz

Cleantech is the ideal combination of technology and meaning. It connects information technology, the Internet, semiconductor technology, chemical, and biotechnology to save the world. Following the new trend, thousands of professionals in Silicon Valley, California, are changing their career paths to access the "Green Jobs" market. Venture capitalists, like Vinod Khosla, are seizing the opportunity and are raising new cleantech funds. Khosla, who is a pioneer in inventing whole market segments, recently closed a 1 billion dollar fund to finance for instance the production of biofuels such as cellulosic ethanol.

Venture Capital for Grand Challenges

The greatest challenges humanity faces today have been named "Grand Challenges" by the masterminds in the Valley. These challenges are recognized and formulated by international organizations like the Copenhagen Consensus, the WFUNA Millennium Goals, and the U.S. National Academy of Engineering. They all agree that humanity needs to address the effects of exponential growth that are getting out of control. These include population growth, energy consumption, the climate crisis, destruction of biodiversity, or the exploitation of natural resources including land and water; but also social issues such as human rights violations, the gap between rich and poor, the lack of democracy, pandemics or the equal treatment of women.

All of these developments are growing exponentially, a process for which we, as human beings, have not developed enough sensitivity, and thus are dangerously underestimating them. When the Internet seemingly appeared all of a sudden in the 1990's, it was, in fact, a continuous, and exponential growth, which had been evident for years to those who could recognize it. The world-renowned inventor-scientist Ray Kurzweil pointed out in his book published in 2005, `The Singularity is Near: When Humans Transcend Biology', that we will experience a "singularity" in less than 35 years. That means that both the positive as well as the negative growth effects will lead humanity into a future that we cannot yet imagine.

One thing, however, is certain: we can counteract the negative progressions only through enormous effort. Minor improvements or patch-up

jobs will achieve no meaningful change on a global scale because we're faced with inter-dependent systemic challenges. To paraphrase a quote by Vinod Khosla from Khosla Ventures: "It is completely irrelevant how many people drive a Toyota Prius (hybrid car) here in California; what counts is what kind of car the millions of new car owners in China or India will drive". Applied to Germany's car manufacturing industry, this means that it does not matter whether a German car manufacturer adds an extra electric motor to its 350 horse power SUV, but whether the German automotive parts supplier will, or even can, provide a technology that finds its way into a $2,000 Tata automobile.

Venture Capital in Germany

Starting a business in cleantech is expensive and takes a long time, especially in comparison with software or Internet businesses. Thus, there are significantly larger funds raised; however, all of them in the U.S. rather than in Europe. Three super-funds started the race in 2009: Khosla Ventures ($1.1 billion), NEA New Enterprise Associates ($2.5 billion), and Norwest Venture Partners ($1.2 billion). Each of these funds has allocated a large share of money to cleantech and keeps a close eye on the developments in India and China.

Cleantech VC investments in North America have increased rapidly from $1.33 billion in 2005 to $2.88 billion in 2006, and $4.21 billion in 2007. The highest level was achieved in 2008 with $6.09 billion. The European (including Israel) investments with its $1.83 billion invested in 2008 pale in comparison.

When asked for their opinion on Germany, the cleantech insiders in Silicon Valley give the usual answers: Germany may be technology leader in many areas, but they are barely known in the international scene. Hardly anyone inside or outside Germany knows that the region Berlin-Brandenburg constitutes the world's biggest cleantech cluster. Germany has had traditionally strong engineers, but startup financing occurs rather through personal loans from local savings banks than through venture capital. In consequence, technology companies are either outrun by VC financed competitors from USA or Asia, or being sold at low valuations to Siemens or other market leaders.

Are foreign investors interested in German cleantech? Yes, but their appetite seems to be even bigger for the Asian market, especially China, India, and Singapore. Frank Levinson, investor and founder of Finisar and an incubator in Singapore, justified his Asian investments by stating, "China has cheaper labor, more engineers, more entrepreneurs, more of everything – including money." For obvious reasons, VCs like to be close to their portfolio companies. Thus, they have to open offices at great expense and risk a great deal when they expand internationally. Some American VCs are indirectly investing in Germany, often as co-investors, if they have a local VC partner in Germany who focuses on local portfolio management. However, they often perceive the European markets in general and the German markets in particular often as stagnant, inflexible, expensive, and conservative. In consequence, they often skip the old world and go to Asia directly.

Innovation, Entrepreneurship, Venture Capital

As we could experience during the dot.com boom, when innovation, entrepreneurship, and venture capital work in unison, they can become a powerful economic driver. On the other hand, if research findings are not practice-relevant, or are not adopted by entrepreneurs, or if start-ups do not receive the necessary funding, the system is blocked.

So, if we want to address any of the Grand Challenges facing humanity today and live a life of meaning and fulfillment, we must think globally more than ever before. German politicians, scientists, philosophers, artists, and other opinion leaders must take their responsibility at the global scale very seriously. We do not need local evolutions, but global revolutions. The question is no longer how do we create more German jobs but rather how do German exports help India and China reduce their CO_2 emissions. The upside for the German industry is obvious. Yet, in order to become significant global players, German engineers and entrepreneurs need much more money than the current allocated private equity, because a cleantech business requires considerably more capital than an Internet start-up.

We need a campaign for urgency and passion. Today, we are not threatened by sudden destruction, but by a gradual decline into trivialities, insignificance, and self preoccupation.

Profile



The serial-social entrepreneur Thomas Schulz is the founder of Cybernet AG, the first nationwide Internet service provider that became the first publicly traded internet company on the German stock exchange in 1997. Moreover, he is co-founder of the Cleantech Circle in San Francisco, a group of serial entrepreneurs and business angels focusing on cleantech investments. After spending the past ten years in Silicon Valley as an investor and entrepreneur, the venture philanthropist relocated back in Munich, where he recently co-founded a new smart grid/energy efficiency start-up and is raising a cleantech fund.

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