

Tales of the unexpected

Stuart Read and Nick Dew look at an entrepreneurial firm that turned 'surprises' to its advantage

Solar energy startups generate attention. But none like Nanosolar. With a charismatic CEO who is a veteran of several successful internet startups and a thin-film solar nanotechnology that promises both high efficiency and low cost, the firm's list of funders reads like a *Who's Who*. Brand-name venture capitalists Benchmark and Mohr Davidow share ownership with multinational firms such as EDF and Mitsui. Stanford University owns a piece of the firm, as do Google founders Sergey Brin and Larry Page. These and others have presented Nanosolar CEO Martin Roscheisen with half a billion dollars to bring them green energy and good returns from the warmth of the sun. Seems like a story with a guaranteed happy ending.

BENEFITING FROM A SHADOW

But even with such auspicious beginnings, surprises still rear up. And, as with any other startup, the game is to figure out how to use these to one's advantage. One of the surprises Roscheisen encountered was the difficulty of bringing talent from abroad to Nanosolar's San Jose, California, headquarters. Many of the leading scientists and engineers in materials science and physics are not US citizens and are prevented from working in the US by tough current immigration laws. For many firms, this might have presented a storm on the horizon. But, rather than letting it turn to rain, Nanosolar managed to find a way of using the situation to its advantage by channelling



Full of energy: Nanosolar's charismatic CEO Martin Roscheisen likes surprises

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specialists barred from Silicon Valley towards their operation in Luckenwalde, Germany. In doing this, the firm not only built an option for key talent, but it also created an entry point into the German solar power market, the largest in the world.

NOT ALL CLOUDS

Nanosolar has also encountered positive surprises. New product development based on core research is an uncertain process. And, in addition to disappointments along the way, Nanosolar has also been astute enough to latch on to technology surprises – advances that had previously been ignored or were hidden from sight by what has been routinely taken-for-granted among people working in the solar industry. "One pleasant surprise was

that a lot of very basic things simply haven't even been tried yet by anyone. Working in a space with low-hanging fruit definitely makes it easier to deliver on fundamental advances," says Nanosolar's Roscheisen.

The firm – not yet seven years old – has been able to turn these surprises into some of their 200 patents, and has already started production and sale of its thin-film nanotechnology products, and posted its first profitable month in September 2008.

LIGHT IN THE TUNNEL

Looking ahead, Nanosolar will doubtless face many more surprises. For example, crude oil, which fuelled investments into alternative energy firms when it cost \$140/barrel, is currently at \$65/barrel. The surprise drop in price may force Nanosolar to reconsider its economic value proposition, target applications, customers, or its technology. This could point to disappointed investors but could also point the firm to new opportunities.

CREATING YOUR OWN ENERGY

Like Nanosolar, the stories of many entrepreneurial firms are no fairy tales. They represent a series of thoughtful transformations of the surprises faced by their founders. Surprises do not always spell disaster; some may offer new opportunities; they can even offer the basis for a completely new firm. For starters – what's the opportunity if the sun doesn't shine? ●

Stuart Read is professor of marketing at IMD, Lausanne, Switzerland.

Nick Dew is assistant professor at the Naval Postgraduate School, Monterey, California

