



Five years ago, there was significant enthusiasm in the US business and financial communities for nanotechnology.

2010 status of nanotechnology investing: The rise, the fall and the silent ascent

Premier news publications featured abundant and broad-reaching headlines about nanotechnology, including 'Nanotechnology Provides New Approach to Drug Discovery'; 'Magnetic Fields Created Using Nanotechnology Could Make Computers up to 500 Times Faster'; and 'Nanotechnology Holds a Key to US Alternative Energy Goals'.

Fast forward five years and almost nobody in the investment world is talking about nanotechnology.

Yet, its development continues to gain steam. Governments around the world continue to commit billions of dollars to nanotechnology and openly discuss the critical nature of being a leader in the field. Will the US maintain its competitive edge or will China overtake it? Continued government support remains vital since it typically precedes the growth of an industry (eg biotechnology and internet).

Likewise, companies around the world continue to announce progress they have made with nanotechnology. Technology industry titans, such as IBM, HP, Dow Chemical and DuPont have seen significant increases in corporate nanotechnology activity. Intel, now refers itself as the largest nanotechnology company in the world and in the world of clean technology A123 Systems uses nanoscale materials to provide significant performance improvement in their batteries, which are projected to last ten years.

Most importantly, investing in a basket of companies developing nanotechnology would have been a very profitable investment. The Cedrus Nanotechnology Index – Diversified (CNID) has appreciated 873 per cent since October 1999, compared to the S&P 500's return of -16.9% over the same period (10/1/1999 to 8/27/2010).

So, why isn't the investment community promoting nanotechnology and related investable products? The reasons are debatable. In the words of a well-respected equity research analyst, nanotechnology was ultimately "perceived to be a collection of nano-sized companies with nano-sized profits". As a consequence, the investment community has struggled to define nanotechnology as a stand-alone theme. Investors came too early to the party and left disappointed.

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So why should investors care about what is happening in nanotechnology now?

- Nanotechnology is still the growth story of this decade. In many areas it is a relatively young industry with high growth in the global economy ahead of it, while in other areas it is already well established, such as semiconductors, but still providing growth opportunities;
- After 10-15 years of nanotechnology discovery efforts and over ten years of massive government and corporate funding worldwide, many profitable nanotechnology companies are ready to go public and venture capitalists are eager to replenish their capital base after a long drought of IPOs. This means that public equity investors should have the opportunity to invest in great companies at compelling valuations;
- Using the definition outlined earlier companies such as Monsanto, Gilead Sciences, Amgen, Archer Daniels Midland, First Solar and Air Products are included along with the more typical list of semiconductor companies, such as Intel and ASML Holding, making the universe more investable;
- Nanotechnology stocks have specific attributes, including growth, limited correlation with the S&P 500 and IPO opportunities, which will provide investors with a fertile investment universe for the foreseeable future.

Opportunity to capitalise on the growth in nanotechnology

Cedrus Investments, headquartered in Cayman Islands, has been a leader in the nanotechnology investment community and remains one of the longest-standing investment firms committed to this field. The firm has an in-house team of nanotechnology experts that publishes proprietary nanotechnology equity research and offers an array of investment products.

The future of desalination may rest in nanotechnology

Roughly 70 per cent of the Earth is covered by water, yet fresh water at 1-2 per cent is a resource that is growing increasingly scarce as populations rise globally, pollution increases and climate and weather patterns change. Water desalination is a time consuming and costly endeavor when using the current methods, which usually involve reverse osmosis. Reverse osmosis requires salt water to be forced through membranes by strong pumps. These membranes filter out the salt but the pumps are subject to clogging and obviously require a constant flow of electricity to function. The key to improving this process and reducing the cost is to improve the performance of the membrane.

Many companies are working on membranes for desalination applications, but one notable example is California-based NanoH2O, a nanotechnology start-up funded by leading venture capital firms, Khosla Ventures and Oak Investment Partners, are developing and commercialising a new membrane material for reverse osmosis based on technology developed by UCLA's Eric Hoek. NanoH2O added nano-particles to the synthesis of the membrane that allows desalination systems to have much lower operating pressures or much higher throughput, which translates into less energy consumption or greater productivity. According to the company, municipal and industrial plants optimised for NanoH2O's membranes can expect up to a 20 per cent reduction in energy consumption, or a 70 per cent increase in water production, or a 40 per cent smaller plant footprint.

BIO: AT A GLANCE

Paul Jackson has a wealth of experience of buy-side investing in technology companies from firms such as Wellington Management and Fidelity Investments. His focus is investing in global technology companies and devising unique asset allocation strategies.



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