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Tiny Science Of Nanotech Brings Big Challenges To Marketers

Some Unanswered Questions

Many nano-derived goods hit store shelves, though environmental groups wary

BY REINHARDT KRAUSE
INVESTOR'S BUSINESS DAILY

Consumer products made with nanotechnology are popping up on store shelves across the country.

Big companies and startups alike are betting nanotech will be a hit. Their ads and marketing materials tout nanotech's benefits in clothing, cosmetics, paint and bicycles.

Selling nanotech-derived products to consumers, though, isn't going to be a slam dunk. While nanotech is said to improve a wide range of products, environmental groups question the technology's safety.

Nanotechnology is a science that creates supersmall devices by manipulating matter at a molecular level. This tiny size is said to give nano parts or devices novel properties, such as unusual strength, when built into products.

That size of nano particles sparks fears. Watchdog groups say the government hasn't done enough research on how nanotech interacts with the body or the environment. It's a tricky situation for marketers.

Some companies have become leery of putting "nano" in product names or labels. And they fear a regulatory backlash.

The onus is on the nanotech industry to show that its products are safe, say company executives, consultants and regulatory agencies.

"No one wants to be the next asbestos," said James Von Ehr, chief executive of nano startup **Zyvex**. "On the other hand, scare mongering by environmental groups is hurtful to innovation."

Nano-related R&D is rising fast. **General Electric**GE, **Procter & Gamble**PG and **Kraft Foods**KFT are among the big spenders.

U.S. companies spent $1.8 billion on nano R&D in 2005, says Lux Research. The federal government sepnt $1.6 billion in nano projects.

Nanotech-derived goods such as the items above are in many places nowadays. At right is the Nano-Tex tag found in that firm's clothing products.

Richardson, Texas-based **Zyvex** says its nanoparticles make the products lighter and stronger. Its nanomaterials are built into bicycles, hockey sticks and golf clubs.

"If people's lives are made better by nanotechnology, it will get (marketing) cachet," Von Ehr said.

Emeryville, Calif.-based **Nano-Tex**, part of **International Textile Group**, uses a nanotech manufacturing process to create stain-resistant and wrinkle-free fabrics. The material is sold in men's pants, shirts and ties, as well as bedsheets, outerwear and office furniture. Eddie Bauer, for example, sells pants it calls Nano-Tex Khakis.

Nano-Tex's brand shows up through in-store promotions and product labeling, says Renee Hutlin, Nano-Tex's executive vice president of sales. "Our name is everywhere," Hutlin said, referring to Eddie Bauer's in-store promotions of Nano-Tex clothes.

She says Nano-Tex surveys show that consumers are willing to pay more money for products enhanced by nanotech.

Nanotech's reputation among consumers, though, seems up for grabs.

"Naysayers have been much more vocal and visible" than nanotech proponents, said Ed Moran, director of product innovation at consulting firm Deloitte & Touche.

Moran says the government should educate the public more about nanotech.

Moran says companies should promote whatever improvements come from using nanomaterials, but not put nano in product names.

"The benefits will sell the product, not a nano prefix in the name," he said. "Why call something Nanosolar Cell? Just call it Always-On Cell. People will get that."

Private investors have high hopes for nanotechnology. In 2005, nanotech startups garnered $497 million in venture capital worldwide, up 17% from the year before, says Lux Research.

Some VC firms steer away from nano startups that target consumer products. That's the case at Draper Fisher Jurvetson in Menlo Park, Calif. Managing Director Steve Jurvetson says the firm prefers to invest in nano startups that focus on industrial applications, such as computer memory chips.

In the consumer market, Jurvetson says nano firms are better off if their materials are "deeply embedded" in products rather than directly exposed to people, such as with facial creams. He says the nano industry must deal with ongoing public relations risk.

"If you make a nano branding decision, everything might be fine until some random event or study comes out; who knows what — maybe nano particles in fish brains — that scares people." A 2004 study led by Southern Methodist University researchers found that nanoparticles caused brain damage in fish.

Most consumers aren't familiar with nanotech, studies show. The most popular product named "nano" is one model of **Apple Computer**'sAAPL iPod music players. But the iPod Nano is so named because it's smaller than other iPod models.

Consumer views on nanotech safety depend on the products involved, says Jane Macoubrie, who did a study for the Woodrow Wilson International Center for Scholars.

The center lists 276 nano products on store shelves, at nanotechproject.org/consumerproducts.

"Nobody is worried about nano layers in computer chips," Macoubrie said. "People are much more worried about nanotech use in food, cosmetics or personal care products, when things can be ingested or taken up in the body."

Some cosmetics makers have put nanoparticles in sunscreens, anti-aging creams and other products.

In May, Friends of the Earth and seven other groups asked the Food and Drug Administration to tighten rules on the use of nanoparticles in cosmetic products. The groups say they fear the particles could penetrate deep into the skin. Friends of the Earth says the particles could enter cells, tissues, organs or the bloodstream.

The FDA has set up a task force to study nanotech. It plans hearings this fall.

Some companies are trying to set guidelines before any possible rules are imposed by regulators.

Last year, **DuPont**DD released a report called "Framework for Responsible Nanotechnology." It's a set of practices for testing nano products for health and safety hazards before releasing them commercially.