Nanotechnology Risk & Oversight: It’s Your Business

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Background

$9.6 billion annual public and private sector R&D investment in nanotechnology globally (up 10% from 2004).

$32 billion in products incorporating nanotechnology sold last year (double 2004).

Almost $500 million in VC investment globally (up 17% since 2004).

U.S. government investment now at $1.3 billion per year.

States investing over $400 million (CA, MA, NY, VA, TX...).

Over 1600 nanotech firms worldwide, with over 60% in the U.S.

Around 30 countries with dedicated national nanotechnology initiatives (largest investments: US, EU, Japan).
Forces Shaping the Business and Investment Environment

Uncertainties about risks to human health and the environment exist and will likely continue to exist.

Media coverage of nanotechnology is both increasing and focusing more on risks and downsides.

Public understanding of nanotechnology is almost non-existent and trust in industry and government to manage risks is low.

Civil society actors increasing their focus on nanotechnology.

Products are flowing into the global market in areas where oversight is weak.

Discussions are beginning on government oversight/regulation in the U.S. and other countries such as the U.K.
The Press: No More Free Ride

Nanotech Raises Worker-Safety Questions

By Rick Weiss
Washington Post Staff Writer
Saturday, April 8, 2006; Page A01

Tiny Toxins?
Preliminary studies suggest that some types of nanoparticles might pose a health hazard. That's bad news for nanotechnology.

By Philip E. Ross

ASSESSING RISKS: Technology’s Future:
A Look at the Dark Side
May 17, 2006
Barnaby J. Feder (N.Y. Times)

Science's Tiny, Big Unknown

Nanotechnology may revolutionize our lives. The first generation of engineered products has reached consumers, and with them come hard questions about safety.

By Charles Piller, LA Times, June 1, 2006, Page A1
A Public with Little Understanding or Trust

Over 90% of the participants in recent focus groups indicated “low” or “very low” trust in industry or government to manage any risks associated with nanotechnology.

- No support for a moratorium on nano (8%)
- But no support for industry self-regulation (11%)

55% said government control beyond voluntary standards is necessary.

- Majority of participants wanted: Greater disclosure & transparency
- More pre-market testing

Some Skeptical Faces at the Window

“The genie is out of the bottle and I worry about controlling it and not hurting people. We could feed the world, but with money and power and politics, nanotechnology could be very scary.”

“The problem is if these early release products that appear to be benign are suddenly found to be detrimental to human health, we’ll all be hyper-skeptical of the industry.”

“They can’t regulate what we’re doing now because they can’t understand it. The regulators don’t know. In one small aspect of nanotech, there may only be two people who know.”

“We need different regulation than we have now. It’s a new technology and we need a different set of people to set up a system to see if it’s safe. The current system fails at some points. If the new technology is so extensive, we need a new system to regulate it.”

NGO Landscape Expands

Since 1990, more than 100,000 new citizens’ groups have been established worldwide.

In China:
1993: <10,000 groups
2003: 58,000 groups

Comments on EPA’s Nanotechnology White Paper, 2006

The Natural Resources Defense Council
Greenpeace
Science and Environmental Health Network
Beyond Pesticides/NCAMP
Environmental Health Project, Ecology Center
Rachel Carson Council, Inc.
ScienceCorps
The Endocrine Disruption Exchange, Inc (TEDX)
Institute for Agriculture & Trade Policy
Sierra Club
Environmental Health Fund
Maryland Pesticide Network
Environmental Research Foundation
ETC Group
Clean Production Action
Center for Environmental Health
Breast Cancer Fund
Friends of the Earth
International Center for Technology Assessment

Comments on EPA’s Voluntary Program for Nanotechnology, 2005
Increasing Product Flow

Over 270 nano-based consumer products already on the market

Products from 15 countries

Containing a variety of nano-engineered substances: silver, carbon silica, titanium dioxide, zinc oxide, cerium oxide

Many in areas where government oversight is weak or non-existent (cosmetics and dietary supplements, for instance)
Next Move?

1st Nano-based Blockbuster Drug
Cash in Stock

A NANO-FREE Label Appears
Cut profits by 50%

Nanoparticle Spill in Los Angeles
Lose Face

The NanoFood Battles Begin
Lose Sleep and Vacation
Some Strategies

Develop reliable radar to track issues and watch for shifts in the debate (track press coverage on nano, NGO activities, government actions, both domestically and globally, and competitor positions).

Place some strategic bets (use third-party, independent testing organizations for product risk assessments).

Participate in the external discussions, including providing input to agencies, Congress, etc.

Be transparent and clear about the benefits and risks of nanotechnology vis-a-vis customers and consumers.

Coordinate with others, including firms, trade associations, and academic partners involved in the ongoing debates around nanotechnology benefits, risks, and oversight.

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