



Responsible Nanotechnologies: Draft code launched for international consultation

Introduction

In mid-September, a draft of the newly developed 'Responsible NanoCode' was launched for international consultation. Insight has been pivotal in the development of the Code, along with its partners the UK's **Royal Society**, the **Nanotechnology Industries Association** and the UK government-sponsored **Nanotechnology Knowledge Transfer Network**.

We believe it is in the collective interests of companies, their investors and wider society to ensure that this potentially powerful set of enabling technologies achieves its potential to deliver health, environmental, social and economic benefits. One of the ways in which we can contribute to that vision is to develop a Code that will help to guide companies to develop nanotechnologies responsibly.

What is nanotechnology?

The Royal Society defines nanoscience as the study of phenomena and manipulation of materials at atomic, molecular and macromolecular scales, where properties differ significantly from those at a larger scale; and nanotechnologies as the design, characterisation, production and application of structures, devices and systems by controlling shape and size at the nanometre scale. A nanometre (nm) is one a billionth of a metre. The 'nanoscale' is usually defined as being at the scale of 100nm down to the size of atoms (approximately 0.2nm). This equates to approximately the length of three to six atoms placed side-by-side or the width of a single strand of DNA; the thickness of a human hair is between 50,000 and 100,000 nanometers.

As the Royal Society points out, in some senses, nanoscience and nanotechnologies are not new. Chemists have been making polymers, which are large molecules made up of nanoscale subunits, for many decades, and nanotechnologies have been used to create the tiny features on computer chips for the past 20 years. However, advances in the tools that now allow atoms and molecules to be examined and probed with great precision have enabled the expansion and development of nanoscience and nanotechnologies.

The genesis of the Code

The idea for the Code emerged from a seminar that Insight, The Royal Society and the Nanotechnology Industries Association (NIA) held in November last year. We reported on the proceedings of that event in a briefing in March 2007 (see http://www.insightinvestment.com/global/documents/riliterature/821056/Opp_uncertainty_nano).

The paper resulting from the workshop entitled 'An Uncertain Business, The technical, social and commercial challenges presented by nanotechnology' which outlines in detail the issues and uncertainties surrounding the development of nanotechnology was published shortly thereafter (see http://www.insightinvestment.com/global/documents/riliterature/367922/an_uncertain_business_report).

Why is the Code needed?

Insight believes that nanotechnologies present huge commercial opportunities for companies in a wide variety of sectors from medicines to computing, from chemicals to food and consumer products. Many of these new products also have the potential to deliver important social benefits – for example through the supply of cheap clean water, portable renewable energy or the replacement of hazardous chemicals that could have a major impact on health and quality of life in developed and developing countries. These technologies may therefore generate new jobs, contribute to future economic growth and deliver good investment returns.

However, while evidence is currently limited – there is uncertainty over the potential environmental, health and safety (EHS) risks of some nanoscale materials, particularly the impact of free manufactured nanoparticles and nanotubes. Many argue that sufficiently robust tests have not yet been developed to assess the safety of such products.

The development of nanotechnologies also gives rise to a complex social and ethical issues – in relation to their governance, (e.g. issues relating to who has control of the development of the technologies), the social impact of their development (e.g. the social and economic implications of the divide between those countries who have capabilities in this area and those who do not) and the impact of their specific applications (e.g. areas such as military and security technologies).

Thus, companies need to consider carefully how they approach this field, identify potentially negative commercial implications early on and address them proactively. For example, several NGOs have already published reports outlining the potential consumer health risks of particular products, which could create reputational risks for some companies. Some are calling for a consumer boycott of products utilising nanotechnologies, or that they be removed from sale until further testing has been done. Some consumer products companies have reputedly decided to not yet move into developing or selling products using nanotechnologies because of concerns about how customers might react. The prospect of a consumer backlash akin to that seen with GMOs has also been widely discussed. In addition, insurance companies like Swiss Re and Munich Re have noted that nanotechnologies may present novel risks and are thus considering carefully how they might insure companies' activities in this area.

The draft Code

The draft Responsible NanoCode has been developed by a multi-stakeholder working group made up of international companies, academics with expertise in risk, social, ethical and environmental areas, and representatives from an NGO, a labour union and a consumer group. The group is chaired by Lord John Selborne KBE FRS.

The aim of the Responsible NanoCode is to establish a consensus on what constitutes good practice and, in the absence of comprehensive legislation in the area, to provide interim guidance as to what organisations and businesses can do to demonstrate they are managing nanotechnologies responsibly. As such, it is a high-level principles-based Code aimed at the board of companies, not a technical standards document.

The working group has proposed a 'comply or explain' approach to the Code's implementation through which companies will be encouraged to demonstrate their adherence to the principles of the Code. Companies adopting the Code will be asked to report each year on what steps they have taken to implement the Code, and, if they haven't implemented particular aspects, to clearly explain why – borrowing from the 'comply or explain' philosophy of the UK's Combined Code on Corporate Governance that has proven to work well. Their disclosure may take the form of information in annual reports or annual statements, company social reports, or specific reporting on a company's website.

The Seven Principles

Principle One: Each Organisation should ensure that responsibility for guiding and managing its involvement with nanotechnologies resides with the Board or governing body.

Principle Two: Each Organisation should proactively engage with its stakeholders and be responsive to their views in its development or use of products using nanotechnologies.

Principle Three: Each Organisation should identify and minimise sources of risk for workers handling products using nanotechnologies, at all stages in the production process or in industrial use, to ensure high standards of occupational health and safety.

Principle Four: Each Organisation should carry out thorough risk assessments and minimise any potential public health, safety and environmental risks relating to its products using nanotechnologies.

Principle Five: Each Organisation should consider and respond to any social and ethical implications and impacts in the development or sale of products using nanotechnologies.

Principle Six: Each Organisation should adopt responsible practice in the sales and marketing of products using nanotechnologies.

Principle Seven: Each Organisation should engage with suppliers and/or business partners to encourage and stimulate their adoption of the Code and so assure its own ability to fulfil its Code commitments.

It is hoped that the Code will contribute to ensuring nanotechnologies achieve their full potential in delivering health, environmental, social and economic benefits at a time when organisations are dealing with technical, social and commercial uncertainties concerning these relatively new technologies. The Code is intended to be appropriate to, and adopted by, companies around the world – large and small – working with nanotechnologies.

The consultation

The draft Code is being sent to hundreds of people around the world known to be interested in the development of nanotechnologies. They are being encouraged to submit their comments via a dedicated website: www.responsiblenanocode.org. The deadline for submissions is December 14 2007.

Various events are planned to publicise the Code in different regions and to solicit input. The Woodrow Wilson Centre in Washington DC hosted an event to launch the Code to a US audience in early October. A similar event is planned in Germany and an event for European and UK investors is also in the works. In addition, Insight is holding meetings with companies it believes are utilising nanotechnologies, or selling products containing them, to obtain their views on the Code.

Once the consultation period ends, the comments will be collated and used by the Working Group to develop the final version of the Code, which is scheduled to be launched in February or March 2008. Insight will then call on all companies in which it invests with an interest in nanotechnology to adopt the Code and encourage other investors to do the same.

November 2007

Produced by the Insight Investor Responsibility Team