

International Symposium on Nanotechnology Regulation

hosted by

Australian Pesticides and Veterinary Medicines Authority (APVMA)

&

National Industrial Chemicals Notification and Assessment Scheme (NICNAS)

1. Introduction

- Acknowledgement and congratulations to APVMA and NICNAS – very important symposium with objectives of:
 - fostering collaborative dialogue between all stakeholders;
 - within an international context
 - consolidating current knowledge of risk assessment of nanomaterials
- Chairman of NETS Expert Forum, with responsibility for advising on emerging technologies and associated opportunities and risks
- My own career at ACIIC – mission to assist organisations and individuals to better address the challenges of the future through innovation – based on many years analysis of the development and transformative effects of new technologies.
- For example I was a founding member of the Commonwealth Recombinant DNA Monitoring Committee from 1981-85 which I believe was fairly successful in establishing mechanisms to manage what was then seen as potentially threatening research; publishing on risk assessment.

2. A Time of Turbulence

- GFC
- Climate change
- Geo-political transformation
- Growing visible inequity
- Mass migration
- Loss of confidence in systems of governance
- And of course emerging new powerful technologies.

3. Reflections on the Nature of Technology

- What is it? – any extension of human capability developed by humans – hence fundamental to our survival, development, culture
- Not an exclusively modern phenomenon – my current great reading pleasure is Bill Gammage's new 'The Biggest Estate on Earth' in which he argues very persuasively that the landscape that settlers saw in 1788 was largely a product of many generations of the application of well-understood fire technology. - interesting to note that the new arrivals possessed the technology of fire, but not the knowledge of how to apply it to sustained advantage in this continent
- By its very nature, technology is transformative (though there are long periods of incremental development), it is disruptive, and if we accept long-wave theory, clustered at regular intervals – we are living through the disruptive decline of the 5th long wave, based on IT, and seeing the early signs of the emergence of a new set of dominant technologies, quite possibly at the conjunction of bio- and nano-technologies

4. Our Challenge

- To build on our understanding of the interactive mutual shaping of technology by context and of context by technology to achieve greater beneficial, and fewer harmful consequences in the establishment of the next generation of technologies
- This requires, as a minimum,
 - careful characterisation of the new technologies in all their aspects
 - identification of key features that have high hazard potential and support for research to realise an understanding of the possible risks
 - an evaluation of the existing framework of standards, regulations, good practice and education, which were inevitably developed for the previous generation of technologies
 - caution in managing release into the economy, society and the environment

5. The Case of Nanotechnologies

- Marked by possible remarkable capabilities, well-founded possible threats in some forms and applications, substantial uncertainties and quite simply unknowns. But we have been there before, lessons should have been learned, and now a set of processes need to be fashioned, drawing on a wide range of scientific and local knowledge.
- We can see the process at work through bodies like APVMA, NICNAS, WorkCover Australia and many others

- I also believe there are grounds for some optimism, but never complacency, that the emergence of nanotechnology has occurred with more consideration of anticipatory governance than any previous technology, with extensive social science research, networks for discussion and exchange, and regular foresighting and assessment studies

6. The Commonwealth Government response

- The establishment of the National Enabling Technologies Strategy – very close to a first in Australia in launching an anticipatory strategy to understand and shape the emergence of new and powerful technologies
- Many components:
 - Improved metrology through the NMI
 - A national approach
 - Extensive public engagement
 - Anticipatory exploration of potential economic and social benefits conjoined with assessment of potential hazards and risks
 - A time–horizon well beyond that of the election cycle