

NANOTECHNOLOGIES: AN INSURER'S PERSPECTIVE

BioCentre Symposium: Products, Privacy and People: Regulating on the Nanoscale

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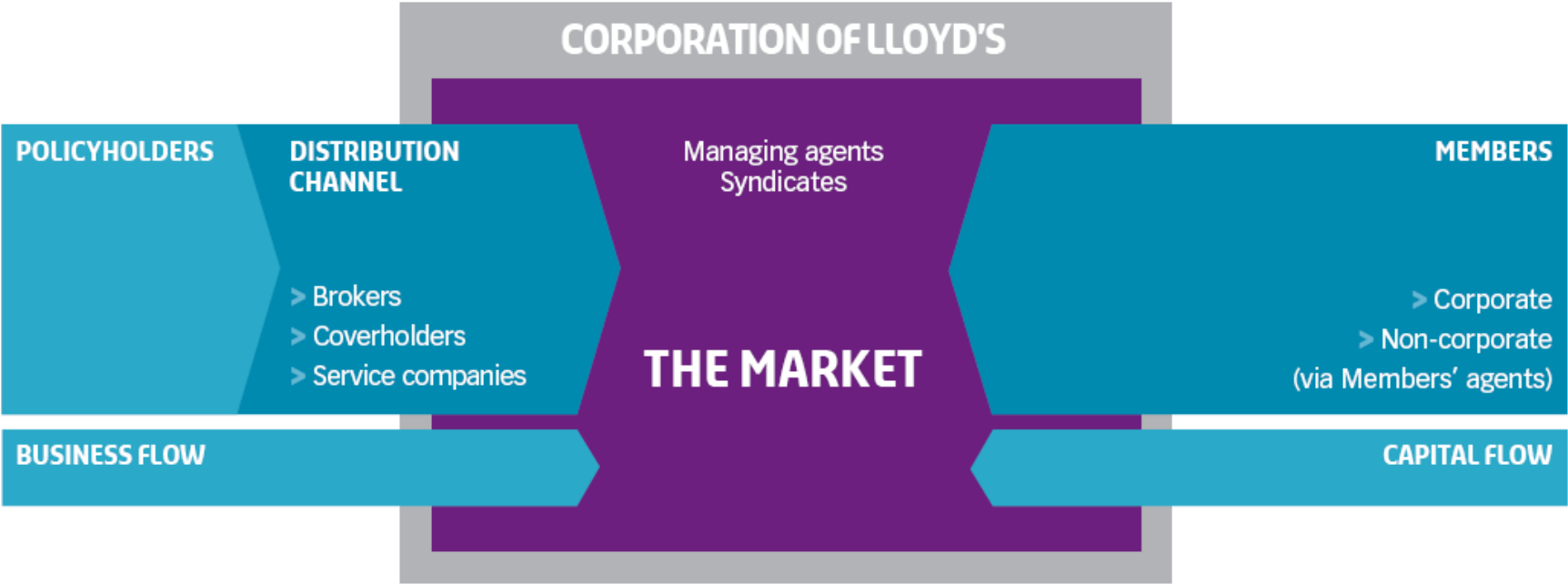
28 February 2011

**THE FOLLOWING SLIDES
REPRESENT MY PERSONAL VIEWS
AND DO NOT NECESSARILY
REPRESENT THOSE OF LLOYD'S**

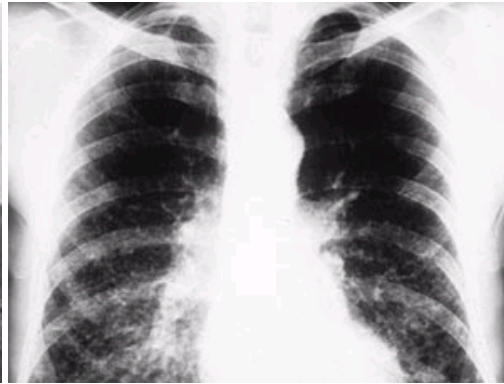
Agenda

- The Lloyd's Market
- Lloyd's Emerging Risk Team
- Nanotechnology – insurance interest and implications
- Liability
- Managing the risks

Lloyd's market structure



A string of losses between 1988-92 threatened Lloyd's future



PIPER ALPHA

ASBESTOSIS

**HURRICANE
HUGO**

EXXON VALDEZ

**HURRICANE
ANDREW**

**EUROPEAN
STORMS**

Emerging risks focus

- Emerging risk now a core capability
 - FSA – financial risk outlook
 - Rating agencies
- Special interests group
 - Experts from the Lloyd's market
 - Quarterly meetings



AMLIN



CATHEDRAL



LLOYD'S



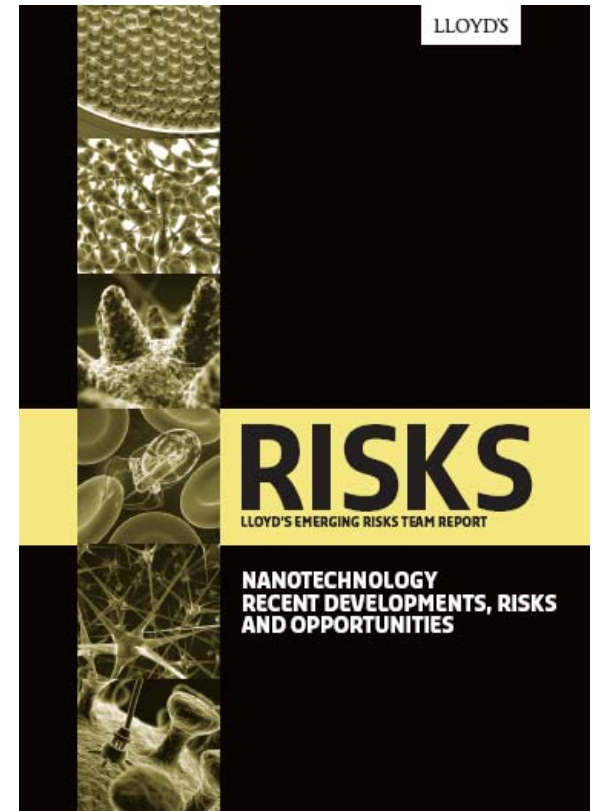
NANOTECHNOLOGY: INSURANCE INTEREST AND IMPLICATIONS

Industry interest



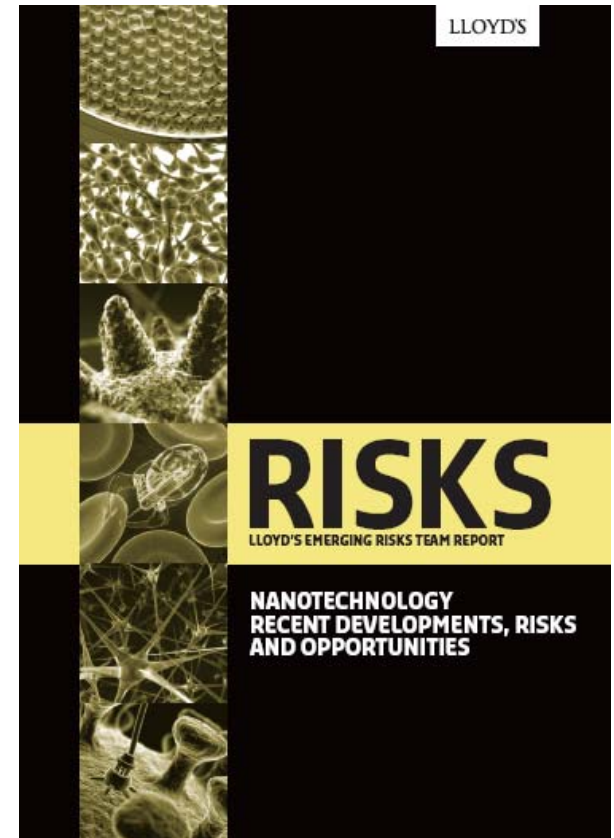
Emerging Risks Team report (Dec 07)

- Enabling technologies potentially part of a large value chain
- Unknown effects on health and the environment
- Most regulation of nanotechnology is done using existing mechanisms and largely untested
- Possible scenarios and cost implications for insurers
- Regulated and well defined products reduces ambiguity on what is and is not insured by an insurance contract
- Risk frameworks allow thorough evaluation of the risks and are of assistance to insurers.
- Nanotechnology could bring direct benefits to risk mitigation



Possible scenarios

- Pollution spill from a nanoparticle production facility
- Nanoparticle manufacture workers develop chronic illness
- Nanoparticles leach from products to accumulate in the environment
- Product recall due to research findings indicating product is a hazard
- Liability claims regarding a product that was indicated by research to be unsafe, but subsequently released to the consumer market.



Benefits to insurance

- Innovative materials
 - Vehicles - stronger
 - Buildings - earthquake, fire, flood, corrosion
 - Climate change – mitigation, solar panel
- Improved pollution treatments
- Medical advancements
 - Treatments
 - Diagnostics and statistics
- Instrumentation / data



What risks captured the interest of insurers

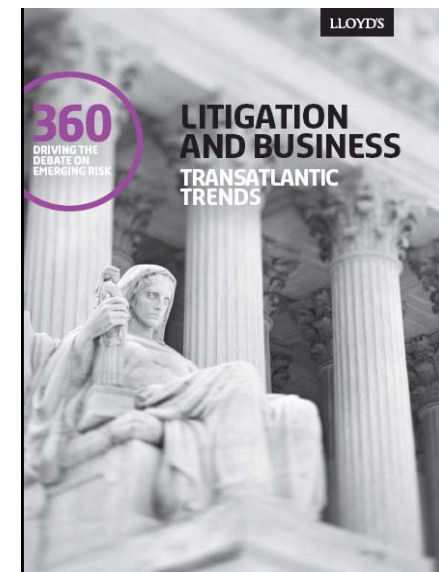
- Type with most potential to cause harm: Nanoparticles
- Limited studies demonstrated:
 - Accumulation in organs
 - Reproduction issues
 - Asbestos like effect of CNT's
 - Toxicity to aquatic life
- Effect on micro-organisms and plant life
- Many types may be safe, it is simply unknown

For a risk to insurable it must be...

- **Diversifiable** – Won't all happen at once
and
- **Quantifiable** – Can assess exposure, likelihood and spread
and
- **Fortuitous** – May happen, or may not
and
- **Economic** – Policyholder can afford to pay

More litigious society?

- Compensation culture is spreading; fast-growing companies may be most at risk
- Boards are allocating increasing resources to litigation issues, pushing up the price of products and services; leading to a more cautious business strategy
- **HOWEVER** 43% [of boards] have not yet adopted formal policies and procedures to manage liability risk and too many boards remain reactive rather than proactive in managing liability risk



How insurers might manage emerging technology risk

- **Monitor and research – *predominantly at this stage***
- Collect exposure & risk information from insureds
- Selection of risks – *common practice for all new risks*
- Price/reserve adequately and hold additional capital
- Reinsurance
- Exclude – *some insurers have explored this*
- Exclude and write back with limited cover
- Only accept claims within a fixed period (claims made policy)
- Create specific policies – *some policies appearing*
- Assist insureds with their risk management practices – *common practice*

To conclude

- There is a possibility that nanotechnologies and other emerging technologies could lead to unforeseen impacts
- As part of their management of exposure, insurers should, if applicable to their business, consider adverse scenarios such as the cost of product recalls including any D&O claims that might arise
- Ultimately the underwriting process is about the insurer understanding the risk management of the company. In general the lower the risk the lower the premium
- Many brokers and insurers will also provide assistance to clients to improve their risk management practices
- Insurers need assistance to be able to categorise and quantify this risk

