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Old Law, New Problems:
Emerging Technologies and Environmental Laws

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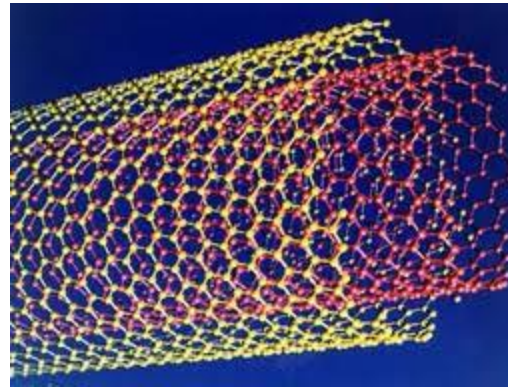
Houston, Texas
January 19, 2011
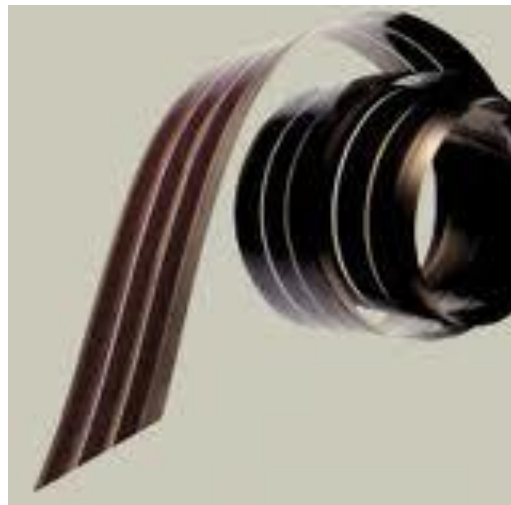
Emerging Technologies in the Public Eye

Figure 1 | Global Risks Landscape 2011:
Perception data from the World Economic Forum's Global Risks Survey

Perceived impact in Billion US $ (y-axis, values 50, 100, 250, 500, 1000)

Perceived likelihood to occur in the next ten years (x-axis: unlikely, likely, very likely)

Risks plotted:
- Fiscal crises
- Geopolitical conflict
- Climate change
- Asset price collapse
- Liquidity / credit crunch
- Extreme energy price volatility
- Economic disparity
- Weapons of mass destruction
- Global imbalances and currency volatility
- Global governance failures
- Water security
- Chronic diseases
- Demographic challenges
- Slowing Chinese Economy
- Retrenchment from globalization
- Regulatory failures
- Fragile states
- Corruption
- Flooding
- Food security
- Critical information infrastructure breakdown
- Organized crime
- Storms and cyclones
- Extreme commodity price volatility
- Infectious diseases
- Biodiversity loss
- Earthquakes and volcanic eruptions
- Illicit trade
- Terrorism
- Infrastructure fragility
- Air pollution
- Migration
- Threats from new technologies
- Online data and information security
- Extreme consumer price volatility
- Ocean governance
- Space security

Higher perceived **likelihood**

Higher perceived **impact**

What's An Emerging Technology?

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One definition of Emerging Technologies

Emerging Technologies:

- arise from new knowledge, or the innovative application of existing knowledge;

- lead to the rapid development of new capabilities;

- are projected to have significant systemic and long-lasting economic, social and political impacts;

- create new opportunities for and challenges to addressing global issues; and

- have the potential to disrupt or create entire industries

Should We Regulate Emerging Technologies? If yes, how?

- Risks of regulatory inflexibility

- Purposes for regulating – social and ethical as well

- Democratic and public participation (acceptance)

- Governance can take many forms. Examples:
  - Liability only
  - Market-driven
  - Technology forcing

Four Approaches to Handle Emerging Technologies

- Voluntary Self-Regulation

- Disclosures and Labeling

- Apply or Modify Existing Laws

- Create New Laws or Regulations

And vice versa

- Emerging Technologies can dramatically change the development and application of environmental laws

- Technology forcing – automotive emissions standards

- Advanced detection technology – dioxin

- Advanced detection technology – remote sensing

Questions?

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