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# **“Sustainability and the Evolving Global Chess Board”**

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# New Century Drivers = Risks + Opportunities



Disruptive  
Innovation

Poverty and  
Inequity

Population



Global Change

Urbanization

Pollution



Terrorism

Internet  
Explosion

Material  
Consumption

Globalization

Industrialization

Civil Society



## Emerging Global Chess Board



# Power Shifts Across the Global Chess Board

- **Power transition**  
→ Rise of the rest



- **Power diffusion**  
→ From states to non-states



# Enablers of Power Shifts

- Global scale communications networks—e.g., Twitter in Iran, campaign to ban land mines
- Nonlinear relationships—power is not proportionate to resources
- Everything happens faster
- Politics is a contest of competitive credibility—power of the narrative

R2150

# Why Has Sustainability Become Important?

- Globalization of economic activity
- Emergence of global scale problems—a changed agenda (e.g., biodiversity, climate change, pandemics)
- Limitations of current institutions
- Evolution of global, middle-class, consumer values



# Megatrends Drive the Sustainability Agenda

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*Urbanization*

*Demographic change*



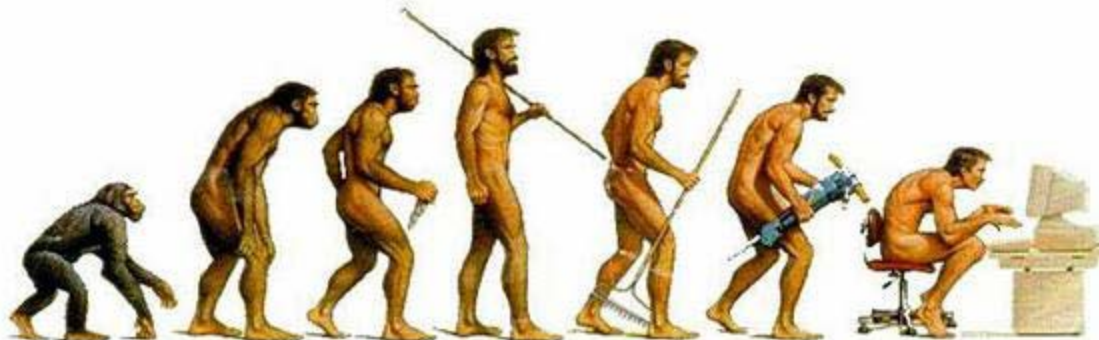
*Climate change*

*Technology*



# What Is Sustainability? Beyond Brundtland...

- Wealth creation in a different way—use of fewer natural resources and materials
- Transition to lower carbon economies
- Innovation opportunities and value creation
- Redefined roles and responsibilities for business, government, NGOs and consumers
- Adaptability and resilience for the longer-term



# Sustainability and the Evolving Global Chess Board: In Progress Examples

- **Climate change negotiations**
- **Global competition for rare earth minerals**
- **Infrastructure investments**
- **Marcellus Shale development**
- **China and alternative energy investments**
- **Pentagon's sustainability strategy**

# Climate Change Negotiations: Between National Sovereignty and Global Governance

- Search for new decision making processes: Copenhagen Collision—180+ nations can't negotiate a global treaty...the need for alternative mechanisms—G-2 (China & US), or G-20 or something in between or beyond
- Absence of U.S. public understanding of climate change + economic recession + focused opposition message = resistance to a climate treaty
- Targeted initiatives:

--Achieve specific agreements on forests, emissions reporting to build success and momentum

--Accelerate use of alternative energy technologies

--Expand climate adaptation measures



# Competition for Rare Earth Minerals: Sustainability as Nationalism

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- Indium...gallium...tellurium...germanium...thorium and other chemical elements are critical ingredients in batteries, solar cells and advanced electric motors—the sustainable technologies of the future
- US, Europe and Japan depend on rare earth materials from China, Bolivia and a few nations for their manufacturing industries
- Recent Chinese export restrictions to Japan indicate that sustainable technologies are a new instrument of nationalistic economic policy

# Smarter Cities – A complex System of Systems

EDUCATION • TRANSPORTATION • SOCIAL SERVICES • SECURITY • SAFETY • UTILITIES • HEALTHCARE • COMMUNICATIONS



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- In 2007, for the first time in history, majority of population lived in cities – 3.3B
- 60 million people moving to cities each year
- 59 cities with 5 million+ citizens by 2015
- 70% world population living in cities by 2050 – 6.4B people
- India's urbanization rate at 50% by 2030
- \$40+ trillion investment in urbanization in China (2005-2025)

# Marcellus Shale—Communities Collide with the Global Economy

- 71,000 active gas wells in Pa., up from 36,000 in 2000...concerns over air pollution, radioactivity/chemical contamination of drinking water supplies...no comprehensive federal standards...or testing requirements
- Reconciling Sustainability issues:
  - Need for economic development
  - Environmental rationale for expanded natural gas use
  - National security argument for Marcellus Shale
  - Overwhelmed regulators...unprepared communities
- The case for a negotiated path to sensible and sustainable economic development



# China—Sustainability Means National and Economic Security

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China imports more oil & gas from Saudi Arabia than the US...Access to energy is a national security issue... Energy efficiency plans have not been met...Stimulus spending used more energy...Government rations energy supplies...New 5 year plan...New policy commitments for alternative energy investments...To select winners in the global marketplace...and ensure energy supplies for its national objectives

National and economic security, not environmental protection, is the primary rationale for sustainable development.

# Pentagon: Sustainable Defense Strategy: Save lives—Save Money—Improve Battle Readiness

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“Development creates stability...if you are able to do it in a focused and sustainable way, then it may be unnecessary to send soldiers.”

Robert Gates, Secretary of Defense, 9/28/2010



It costs \$400/gallon to deliver fuel to Afghanistan...1 soldier dies for every 24 fuel convoys in Afghanistan...Pentagon plans to use renewable on-site power for generators & buildings...Use biofuels for jets...Nuclear fuel for ships...Hybrid motors in assault ships...LED lights in tents...US Navy sets goal of 50% use of alternative energy sources for all war fighting infrastructure by 2020

# Evolution of Sustainability

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- A dynamic concept that continues to evolve
- Sustainability is moving from the periphery to a more central position in business strategy, national economic policy and military planning
- More non-environmental and non-energy voices will shape its future—economic nationalism, national security, issues of governance, transparency and equity
- Transformation from a concept among elites to a conversation accessible to consumers and voters

# Future Scenario

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## Who has the advantage?

Nations, businesses and NGOs that demonstrate:



**Resilience**

**Adaptability**

**Ability to Scale**