Trends, Issues and Drivers Towards Sustainability

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Bill Wallace Bio

• Founder and President, Wallace Futures Group, LLC, Steamboat Springs, Colorado, USA
  – Assisting companies in strategic planning, identifying important trends and issues, starting engineering practices in sustainable development
• Author of *Becoming Part of the Solution: The Engineer’s Guide to Sustainable Development*, published by ACEC in Feb. 2005
• Past-president of Engineers Without Borders–USA
• Chair of the International Federation of Consulting Engineers (FIDIC) Sustainable Development Committee
  – Primary author of *Project Sustainability Management Guidelines*
• Subcommittee Chair of ACEC Environment & Energy Committee
• Member of the ASCE Committee on Sustainability
• Former Liaison Delegate to the World Business Council for Sustainable Development
• 21 years at CH2M HILL in various senior positions
Summary

1. Why do anything?
   - How issues emerge
     - Sustainable development as an emerging issue
   - So what?

2. Drivers for achieving sustainability
   - First, reputation
     - Private sector
       - Market entry
       - Diversification
       - Differentiation
       - Process improvement
       - Ethical imperative
       - Cost savings
     - Public sector
       - Quality of life
       - Economic development

3. Decision process for deciding to adopt sustainability policies and practices into an organization
   - “Walking the talk”

Chapter 3

Chapter 4

Innovation

More recently

Necessity

April 2007

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How Issues Emerge

Warning signs of change
Issues emerge in stages

Why to the Bells in Slot Machines Sound When Someone Wins?
Warning Signs of Change

• Linkages of trends, events, other weak signals
  – Can illuminate emerging issues
  – May induce changes that will threaten business-as-usual behavior

• Why consider?
  – Keep abreast of beginnings of change
  – See emerging issues as opportunities or threats before anyone else
Issues emerge in stages

- Early warning zone
  - Early awareness: vague concern of condition or change
  - Informal dialog: special interest groups, fringe publications
  - Gathering knowledge: experts begin to think, write, communicate. Issue named

- Mid warning zone
  - Issue is championed and moves into public view
  - Broader public knowledge, defining event, wider publicity

- Late warning zone
  - Full blown issue
    - Popular press
    - National legislation
Visualizing Emerging Issues

- Early warning zone
  - Early awareness
  - Informal dialog
- Mid warning zone
- Late warning zone
  - Full blown issue
  - Issue championed
  - Gathering knowledge
  - Broad public knowledge

Stage of Awareness

Time
Sustainable Development as an Emerging issue in the U.S.

**Stage of Awareness**

- Early awareness
- Gathering knowledge
- Issue championed
- Full blown issue

**Time**

- Early warning zone
- Mid warning zone
- Late warning zone

**Events**

- 1972 UN Conference on Human Development
- 1973 OPEC oil embargo
- 1972 UN Conference on Human Development
- 1992 UN Rio Conference
- Bhopal “Brent Spar”
- Brundtland Commission report
- Global Climate Change
- LEED popularity
- Brookfield Commission report
- Millennium Development Goals
- Creation of the WBCSD
- Publication of the Millennium Ecosystem Assessment
- Increasing water shortages
- 2002 UN Johannesburg Summit
- Rising consumption levels in Worlds 2 & 3
- GE launches “Ecomagination”
- Oil Shortages
- Release of "An Inconvenient Truth"
- Nike child labor issue
- Oil Shortages
- UN Global Reporting Initiative
- "An Inconvenient Truth"
- UN Global Reporting Initiative
- Release of "An Inconvenient Truth"
- Oil Shortages

**Publication Dates**

- 1962 Silent Spring
- 2002 UN Johannesburg Summit
- 1992 UN Rio Conference
- 1972 UN Conference on Human Development
- 1973 OPEC oil embargo
- 1972 UN Conference on Human Development

**Initiatives**

- "An Inconvenient Truth"
- Oil Shortages
- "Ecomagination"
- "An Inconvenient Truth"
- Oil Shortages
- "An Inconvenient Truth"
- Oil Shortages
- "An Inconvenient Truth"
- Oil Shortages
Other Emerging Issues?

Stage of Awareness

- Early warning zone
- Mid warning zone
- Late warning zone

Time

- Full blown issue
- Issue championed
- Gathering knowledge
- Broad public knowledge
- Informal dialog
- Early awareness
Drivers for Achieving Sustainability

What’s driving the public and private sectors to do anything about sustainable development?
Drivers for Achieving Sustainability

<table>
<thead>
<tr>
<th>Driver</th>
<th>Description</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early</td>
<td>Reputation</td>
<td>Preserve and enhance reputation along sustainability dimensions</td>
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<tr>
<td></td>
<td></td>
<td>Greening programs. Sustainability reporting. Achieving LEED</td>
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<td></td>
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<td>certification of buildings.</td>
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<tr>
<td>Current</td>
<td>Innovation</td>
<td>View problems and issues through sustainability lenses. Find</td>
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<td></td>
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<td>innovative solutions.</td>
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<td></td>
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<td>10” Engineering. By-product synergy.</td>
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<tr>
<td>New</td>
<td>Necessity</td>
<td>Need to mitigate or adapt to impacts, consequences</td>
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<tr>
<td></td>
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<td>Global climate change is raising sea levels. Can effect water,</td>
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<td>wastewater systems of coastal cities.</td>
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</tbody>
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Early Market Driver: Reputation

- Business (governments, too) are being called to task
  - Non-sustainable behavior
- Emergence of powerful new stakeholders
  - Stakeholder groups aware of non-sustainable behavior and its consequences
- Enabled by information technology
  - Ability to access and disseminate information globally at very low cost
  - “Everyone will know everything about you all the time”
- Stakeholders can affect a company’s bottom line
  - Setting de facto standards for corporate environmental and social performance
Market Response

Public and private sectors
Private Sector: Expansion of Industry Responsibilities

- Expansion of perceived responsibilities in two directions
  - Upstream and downstream in the supply chain
  - Beyond environmental compliance; into social equity
Expansion of Industry Responsibilities

Old Business Model

Charitable contributions
Regulatory compliance
“The business of business is business.”

Economic
Environmental
Social

Materials Energy Production Transport Products, Services Waste
Resources Production -- Distribution Disposal
Industrial System

Supply Chain
Expansion of Industry Responsibilities

New Business Model

- Eliminate toxic materials content
- Fair labor practices
- Recycling
- Product take-back
- Energy from renewable sources
- "Green" buildings & facilities
- Wood from sustainable forests

Old Business Model

Economic

Environmental

Social

Expansion of Industry Responsibilities

“Dematerialization”

“Fair trade”

Supply Chain

Materials

Energy

Production

Transport

Products, Services

Waste

Resources

Production -- Distribution

Disposal

Industrial System
Private Sector Response

- Prerequisite for market entry
- Market diversification
- Differentiation
- Process improvement
- Ethical imperative
- Cost savings

Prerequisite for Market Entry

- Large multinational corporations with large environmental footprints.
  - Apply World 1 standards of environmental and social performance
- Corporations are extending the scope and breadth of their environmental management systems
  - Upgrading their facilities
  - Requiring their suppliers to take similar actions
Market Diversification

• Sell to the other 5 billion people
• Examples
  – Proctor and Gamble
• Paul Polak, International Development Enterprises, Lakewood, CO
  – “Ruthless pursuit of affordability”
Differentiation

- Private sector
  - Commitment to environmental and social good is a major component of their marketing strategy

- Public sector
  - Cities and counties compete for jobs and growth on the basis of quality of life,
Process Improvement

- Using sustainability as a catalyst for innovation.
- Looking at client and customer problems through a different lens
- Products and services which use less materials and toxics
- Incorporate recycling and pollution prevention, and more.
- By-product synergy (BPS)
Ethical Imperative

• Embraced the principles of sustainable development because it’s the “right thing to do”

• Examples
  – Interface, Inc
  – Stonyfield Farms
Cost Savings

- Savings in life cycle costs
- Savings in design/construct costs
- Improved employee productivity
- Reduced absenteeism
- Examples
  - Poudre School District
  - Wal-Mart
Trends in the Public Sector: Improving the Quality of Life

- People are experiencing the consequences of non-sustainable development
  - Traffic congestion
  - Air, water pollution
  - Water shortages
  - Urban sprawl

- Result: People are seeking a better quality of life
Public Sector Response

- Quality of life is the basis of competition
- Cities competing globally for jobs, economic growth
  - Consequence of globalization
Results

• Sustainable cities initiatives
• Green buildings
  – Increasing popularity of LEED certification
• New forms of facilities procurement and construction
  – Life cycle cost vs. first cost
Cities That Take Sustainability Seriously (examples)

Sustainable Development as a Catalyst for Innovation

- Eco-efficiency
- Eco-effectiveness (Bill McDonough)
  - Cradle to cradle design
  - Biological and technical nutrients
- Holistic solutions
  - Look at the demand side of the problem
  - “Nega-watts”
  - Large pipes, small motors
  - Tunneling through the cost barrier
  - By-product synergy
Eco-efficiency

- Reduce materials intensity of goods and services
- Reduce energy intensity of goods and services
- Reduce toxics dispersion
- Enhance materials recyclability
- Maximize sustainable use of resources
- Extend product durability
- Increase service intensity of goods and services

Source: World Business Council for Sustainable Development
Sustainable Development as a Matter of Necessity

• Consequences of non-sustainable behavior are appearing now*
  - Sea level rise
  - Water shortages
  - Extreme weather events
  - Spread of disease
  - Limits to growth: congestion, pollution
  - More…

• Organizations are beginning to recognize and respond

*Inside the planning horizon for many companies, public agencies
Recap

1. How issues emerge
2. Drivers for achieving sustainability
   - Reputation
   - Innovation
   - Necessity

Next: “Walking the Talk”
Walking the Talk

Decision process for deciding to adopt sustainability policies and practices into an organization
Decision Process

• Is there a business case for making a commitment to sustainable development?
  - Market considerations
  - Financial considerations
  - Strategic fit

• Do the benefits outweigh the risks?
  - Can you take advantage of the benefits?
  - Can you manage the risks?
    • Issues to consider
Decision Process for Establishing Sustainable Development Policies and Practices

Is there a business case?

Financial Considerations
• Will your offering of sustainable development products and/or services enhance growth and profitability?
• Can your firm afford to make the necessary investments to build this business?

Market Considerations
• What is the expected market for products and/or services in sustainable development?
• What options are available for strategic positioning
  • Take advantage of opportunities, mitigate threats
• Will this enhance or detract from your core businesses?

Benefits
• Increased competitiveness
• It's the "right thing to do"
• Reputation management
• Source of innovation
• It's becoming a necessity
• Business risk reduction
• Quality-based selection
• Higher profitability
• Attracting/retaining employees

Strategic Fit
• How will your commitment to sustainability match up with your vision, mission and goals?
• How does sustainability fit with your corporate culture?
• Does your firm have the appetite to invest and build the business in sustainability over the long term?

Risks, Issues to Resolve
• How well publicized should your firm’s commitment be?
• Which business should you be in? Not in?
• How should you manage your environmental footprint?
• How will you manage your supply chain?
  • Which suppliers should you use?
  • Should you consider product take back?
• What is your commitment to continuous improvement in sustainability?

Next Steps
• Strategic planning
• Sustainable development community of practice
• Staffing
• Stakeholder relationships
• Greening the organization
• Sustainability reporting

Additional Considerations

Commit?

Begin Implementation

Stop, or hold for future consideration

Stop/hold

Yes

Yes

No

No

Yes

Critical Issues
Market Considerations

- What is the expected market for products and/or services in sustainable development?
  - How are the clients/customers in your core markets affected by sustainable development issues?
  - What is the expected type and volume of business?

- What options are available for strategic positioning
  - Take advantage of opportunities, mitigate threats

- Will this enhance or detract from your core businesses?
Financial Considerations

- Will your offering of sustainable development products and/or services enhance growth and profitability?
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- What is your commitment to continuous improvement in sustainability?
Next Steps

- Incorporating sustainable development into your company’s strategic plan
- Establishing a sustainable development community of practice
- Staffing
- Developing stakeholder relationships and partnerships
- Greening the organization
- Sustainability reporting
Recap

• Decision process for Establishing sustainable development policies and practices
  - Is there a business case?
  - Additional considerations
  - Critical issues
  - Decision to commit

• Implementation
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3. "Walking the talk"

Chapter 3

Chapter 4

Decision process for deciding to adopt sustainability policies and practices into an organization

“Walking the talk”
Thank you!

Questions?

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