Balancing Profitability and Sustainability

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Enterprise Sustainability

A sustainable enterprise achieves enduring growth and superior long-term financial performance by addressing the social, economic, and environmental needs of present and future stakeholders.

A sustainable enterprise is both resilient and responsible.

Source: Eco-Nomics LLC
## Scope of Sustainability

<table>
<thead>
<tr>
<th>Facilities &amp; Resources</th>
<th>Internal Business</th>
<th>External Society</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Continuity</td>
<td>Responsibility</td>
</tr>
<tr>
<td></td>
<td>Reliable, ethical, safe, productive performance</td>
<td>Concern for the environment &amp; stakeholders</td>
</tr>
<tr>
<td>Products &amp; Services</td>
<td>Preferability</td>
<td>Stewardship</td>
</tr>
<tr>
<td></td>
<td>High-quality, safe, reliable, affordable, minimal footprint</td>
<td>Life cycle design, management, &amp; communication</td>
</tr>
</tbody>
</table>
Example: General Mills

Nourishing Lives

Nourishing Communities

Nourishing the Future

GENERAL MILLS
Example: Frito-Lay

![Frito-Lay Inspire Well-Being Graphic]

- Healthy Snacking
- Best Service
- Conserve & Preserve
- Inspire Greatness
- Products
- Partners
- Planet
- People
Example: Cadbury-Schweppes

Marketing
Human Rights
Community
Ethical Sourcing
Environment, Health & Safety
Pathways from Sustainability to Shareholder Value

**Sustainable Business Practices**
- Emission reduction
- Resource conservation
- Life cycle system design
- Human health & safety
- Social responsibility
- Strategic philanthropy

**Stakeholder Value**
- Fulfillment of basic needs
- Environmental protection
- Community quality of life
- Economic development
- Poverty alleviation

**Tangible Value Drivers**
- Operating profit
- Capital utilization
- Risk profile

**Intangible Value Drivers**
- Leadership & governance
- Technology & know-how
- Customer satisfaction
- Brand equity & reputation
- Employee attraction
- Supply chain alliances
- Business continuity

**Shareholder Value**

Adapted from: *Clear Advantage*, GEMI 2003
# Value Proposition: How Sustainability Generates Shareholder Value

<table>
<thead>
<tr>
<th>Direct Contributions</th>
<th>Intangible Value Drivers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top-line growth in core businesses</td>
<td>Company image &amp; reputation</td>
</tr>
<tr>
<td>Development of new product lines</td>
<td>Product &amp; process quality &amp; innovation</td>
</tr>
<tr>
<td>Increased resource productivity</td>
<td>Customer satisfaction &amp; loyalty</td>
</tr>
<tr>
<td>Increased revenue from byproducts</td>
<td>Investor perceptions (including SRI)</td>
</tr>
<tr>
<td>Reduced business interruption</td>
<td>Regulatory positioning &amp; influence</td>
</tr>
<tr>
<td>Reduced product life cycle costs</td>
<td>License to operate &amp; distribute</td>
</tr>
<tr>
<td>Reduced EHS liabilities</td>
<td>Talent attraction &amp; development</td>
</tr>
</tbody>
</table>
Incorporating Sustainability into the Innovation Process

- Performance metrics – Goals, milestones, tracking
- Product, packaging, & process design rules
  - Cost, performance, energy constraints
  - Material & technology preferences
- Decision making guidelines
  - Stage-gate procedures, trade-offs
- Modeling & analysis methods
  - Footprint indicators
  - Life cycle assessment
  - Stakeholder perceptions
Examples of Sustainability Metrics

• Net energy savings over product life cycle (kWh per $ sales or kWh per ton produced)
• Recycled material (% mass) used as product input
• Energy from renewable sources (% of kWh per yr)
• Waste or emissions over product life cycle (kg per $ sales or kg per ton produced)
• Post-consumer product or packaging recovery (% of annual units produced)
• Eco-efficiency ($ sales per input kWh, labor hour, or ton)
Life Cycle Assessment

Sun

Natural Capital

Ecosystem Products & Services

Economic Capital

Consumers

Sun

Economic Products & Services

Natural Capital

Ecosystem Products & Services

Economic Capital

Consumers
Example of Eco-LCA™ Applied to Snack Food Industry Supply Chain

Natural Capital Consumed (joules) per $million Output

“Embedded” Resources

- Soil Erosion
- Sunlight
- Hydropotential
- Geothermal
- Wind
- Grass
- Wood
- Water
- Crude oil
- Natural gas
- Raw Coal
- Metals & mining
- Non-metallic minerals
- Crushed Stone
- Sand
- Detrital matter
- Nuclear

70 million gallons
120 barrels
Priority Setting for Water Resilience Among Global Facilities

Eco-LCA™

Supply Chain Water Intensity

<table>
<thead>
<tr>
<th>Scarce</th>
<th>Low priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>Moderate priority</td>
</tr>
<tr>
<td>Plentiful</td>
<td>High Priority</td>
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</table>

Water Scarcity

WBCSD Global Water Tool
Top 12 Contributors to Life Cycle Carbon Footprint for Soft Drink Production

Metal can, box, and other container manufacturing: 2%
Cattle ranching & farming: 2%
Oil and gas extraction: 2%
Paper & paperboard mills: 2%
Waste management and remediation services: 3%
Iron and steel mills: 3%
Primary aluminum production: 4%
Soft drink and ice manufacturing: 5%
Truck transport: 7%
Wet corn milling: 8%
Grain farming: 13%
Other Sectors: 25%
Power generation and supply: 24%

Total: 878 MT CO$_2$ equiv. per $million sales

Data Source: Carnegie Mellon University
Thank You!

More information: www.resilience.osu.edu
www.eco-nomics.com