Making An Impact with Sustainable Supply Chains

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NYS Pollution Prevention Institute

- Headquartered at RIT within GIS
- Established in 2008
- $4M in annual NYS funding
- Focus on reduction of natural resource consumption (water, raw material, energy) and elimination of waste and toxics
- P2 research, technical assistance, education and outreach
- 15+ full-time staff
Technical Expertise

- P2 problem identification, reducing hazardous waste and environmental “footprint” of process or facility
- Technology assessments, validation and effectiveness studies
- Supply chain sustainability assessments, strategy, and implementation
- Green or eco-innovation products in the commercialization stages
- Food waste reduction and pathway utilization
Typical Supply Chain

Source: http://www.scpiteam.com/
Current Supply Chain Trends

SOME KEY FINDINGS

1. **Eliminating supply chain risks is the main driver:** Over 32% of executives polled said they are still incentivised by eliminating supply chain risks.

2. **Industry collaboration is the biggest opportunity in 2015/2016:** Just over 24% of respondents stated that industry collaboration is the single most exciting opportunity in relation to supply chains sustainability. The second most exciting is creating a circular economy and third is customer / consumer awareness, at 16% and 11% respectively.

3. **Traceability and environmental concerns are the biggest issues to watch out for in 2015/2016:** Nearly 30% of the community stated that traceability and environmental improvements will be key issues in the coming years.

Source: Sustainable Supply Chain Trends 2015
Current Supply Chain Trends: Drivers

We then asked our respondents what they were incentivised / driven by. Their answers were as follows:

- Cost reduction: 13%
- Eliminating supply chain risks: 32%
- Finding supply chain opportunities: 18%
- Reputational concerns: 23%
- Other: 15%

Source: Sustainable Supply Chain Trends 2015
Current Supply Chain Trends: Issues

For our respondents the biggest issue in 2015 / 2016, in relation to their supply chain, was as follows:

1. Traceability
2. Environmental concerns
3. Human Rights

Top 3 issues in 2015/2016:

Source: Sustainable Supply Chain Trends 2015
Supply Chain Issues by Region

- **NORTH AMERICA**: 20% - Eliminating dependency on unsustainable raw materials
- **ASIA PACIFIC**: 21% - Environmental concerns
- **EUROPE**: 21% - Traceability

Source: Sustainable Supply Chain Trends 2015
Current Supply Chain Trends: Opportunities

The single most exciting opportunity in 2015/2016 in relation to supply chains:

- Circular economy: 16%
- Consumer/customer awareness: 11%
- Eliminating dependency on unsustainable raw materials: 9%
- Industry collaboration: 24%
- Measurement: 7%
- Other: 2%
- R&D innovation: 7%
- Resource efficiency: 10%
- Supplier diversity: 4%
- Supply diversification: 2%
- Sustainable agriculture: 0.8%

24% of respondents believe industry collaboration is the single most exciting opportunity in 2015/2016.

Source: Sustainable Supply Chain Trends 2015
Issues & Opportunities by Company Type

Biggest supply chain issue by company type:

- **B2B**
  - Tractability: 19%
  - Human Rights: 17%
  - Eliminating dependency on unsustainable raw materials: 15%

- **B2C**
  - Environmental concerns: 16%
  - Tractability: 13%
  - Resource efficiency: 10%

Most exciting supply chain opportunity by company type:

- **B2B**
  - Industry collaboration: 29%
  - Circular economy: 16%
  - Resource efficiency: 9%

- **B2C**
  - Industry collaboration: 19%
  - Circular economy: 17%
  - Resource efficiency: 12%

- **B2C**
  - Consumer / customer awareness: 23%
  - Industry collaboration: 20%
  - Circular economy: 14%
In Summary: Current Supply Chain Trends

Supply Chain **Drivers**

1. Eliminating supply chain risks: 32%
2. Reputational concerns: 23%

Supply Chain **Issues**

1. Environmental concerns: 53%
2. Traceability: 56%
3. Human Rights: 44%
4. Eliminating dependency on raw materials: 39%

Supply Chain **Opportunities**

1. Industry collaboration: 24%
2. Circular economy: 16%
3. Consumer/customer awareness: 11%
4. Resource efficiency: 10%

Source: Sustainable Supply Chain Trends 2015
Supply Chain Environmental Concerns

**Inputs**

- Transportation
- Packaging
- Energy
- Water

**Use & Distribution**

- Resource extraction
- Suppliers
- Food manufacturing
- Consumer
- Future Generations

**Outputs**

- Waste water
- Air emissions
- All other wastes
Supply Chain Risk & Environmental Concerns

Sony PlayStation

☑ Christmas 2001

☑ Dutch government blocking Sony’s entire European shipment
  ☑ 1.3 million boxes sitting in warehouses
  ☑ Cadmium found in game controls (small, but legally unacceptable). Quickly replaced.

☑ 18 month investigation: inspected >6,000 factories

☑ Results:
  • Cost $130 million
  • Created a new supplier management system
  • Environmental issues can cost businesses real money
  • Brand may be tarnished
Supply Chain Impacts

“Environmental, social and economic impacts occur during every stage of supply chains. In addition, *governance*, which is *how an organization demonstrates accountability for its stakeholders*, is important at every stage”

UN Global Compact, “A Practical Guide for Continuous Improvement for Small and Medium Enterprises”
Supply Chain “Sustainability”

- The United Nations Global Compact defines supply chain sustainability as “the management of environmental, social and economic impacts (sustainability), and the encouragement of good governance practices (accountability), throughout the lifecycles of goods and services (supply chain)”

- “The objective of supply chain sustainability is to create, protect and grow long-term environmental, social and economic value for all stakeholders involved in bringing products and services to market.”

Supply Chain Value

LINEAR ECONOMY

RESOURCE EXTRACTION  PRODUCTION  DISTRIBUTION  CONSUMPTION  WASTE

$25 Trillion  Projected loss of growth by 2050 using a linear economy model\(^1\)

32%  CEOs think the global economy is on track to accommodate a growing population\(^2\)

33%  CEOs who believe business is doing enough to meet the global sustainability challenge\(^2\)

85%  CEOs who state that clearer market & policy signals are needed to advance sustainability\(^2\)

Source:

\(^1\) Accenture, Waste to Wealth, 2015
\(^2\) United Nations Global Compact, Global Corporate Sustainability Report 2013
LINEAR ECONOMY

Take… Make… Use… Dispose.

relies on large quantities of cheap, easily accessible materials and energy, and is a model that is reaching its physical limits
Video: https://www.youtube.com/watch?time_continue=11&v=zCRKvDyyHml

Source: NERC
Circular Economy System Diagram

Source: Ellen MacArthur Foundation
The Circular Economy in Practice

The Circulars 2015 Awards

DELL
Winner, The Accenture Award for Circular Economy Pioneer

"The Circulars is bringing visibility to an important shift happening in our world, and the people, companies and countries bringing innovative approaches to addressing this shift. Winning The Circulars' Pioneer Award validated our longstanding commitment to running a sustainable business and energized our teams to continue driving circular principles into our value chain."

Read more about Dell’s project

Ecovative – Finalist for Circular Economy Entrepreneurship
https://www.youtube.com/watch?v=zwZP8NrZMKA
The Ecovative Process
• Ecovative’s Mushroom Materials start on a farm, with the parts of plants that cannot be used for food or feed.
• A patented process cleans and prepares a blend of agricultural byproducts, and inoculates it with mycelium (mushroom tissue).
• Packaging parts are then “grown” into the required custom shape.

Ecovative Benefits
• By using mycelium and agricultural by-products, Ecovative uses materials that are environmentally low-impact, biodegradable and renewable.
• This product replaces synthetic petrochemical based materials such as Styrofoam™.

SSC&T Project Description
• Provide assistance to Ecovative for obtaining Biodegradable Products Institute (BPI) certification for their packaging products.

SSC&T Project Objectives
• Support Ecovative in preparation of samples for testing to satisfy BPI Requirements
• Develop an in-house disintegration test platform comparable to the ISO 16929 Disintegration test, so that Ecovative may validate new products prior to paying for independent lab testing for BPI certification.

Ecovative’s Expected Results
• Forecasts 49 jobs retained; 2 jobs added
• Estimates 20% increase in sales due to project; Up to 20% increase in customers
Transitioning to a Sustainable Supply Chain

Supply Chain Opportunities

- Industry collaboration
- Circular economy
- Consumer / customer awareness
- Resource efficiency
Benefits of a Sustainable Supply Chain

- Ensures **compliance** with laws and regulations
- Enables company to meet **customer** requirements
- **Differentiates** company from their competition
- Adheres to and supports international principles for sustainable business **conduct**
- Improves social, economic and environmental **impacts**
- **Acts** in the company’s own interests, the interests of their stakeholders, and the interests of society at large

Benefits of becoming a “Sustainable Supplier”

Risk Reduction
- Mitigate business and brand risk by understanding environmental impacts of self and suppliers

Cost Reduction
- Identify opportunities for efficiency improvements leading to reduction in total cost of ownership

Revenue Growth
- Seen as a leader verses competition
- Viewed as a trustworthy and respectable company
- Become a supplier of choice
Develop Implementable Plan

Commit:
- Develop a **business case** by understanding the drivers
- Establish a **vision** and set objectives
- Establish sustainability **expectations** for the company’s supply chain

Assess:
- Determine the **scope** based on business priorities and impacts (map suppliers; determine key, strategic, high risk suppliers)

Communicate:
- **Report** on progress to stakeholders
- Be **transparent**
- **Track** performance against goals

Improve & Control:
- **Communicate** expectations and engage with suppliers to improve performance (**Code of Conduct**)  
- Monitor to establish baseline and assess performance (**Supplier Scorecards** and Audits)
- Remediate supplier non-compliance and invest in continuous improvement
- Enter into **collaboration** and partnerships (capacity building)
New York State Manufacturers Working towards Greening the Supply Chain

Sustainable Supply Chain Program
New York State Pollution Prevention Institute

Sustainability as a Supplier: What Your Customer...

http://www.youtube.com/watch?v=BjLqluC_8Cg
Thank You

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