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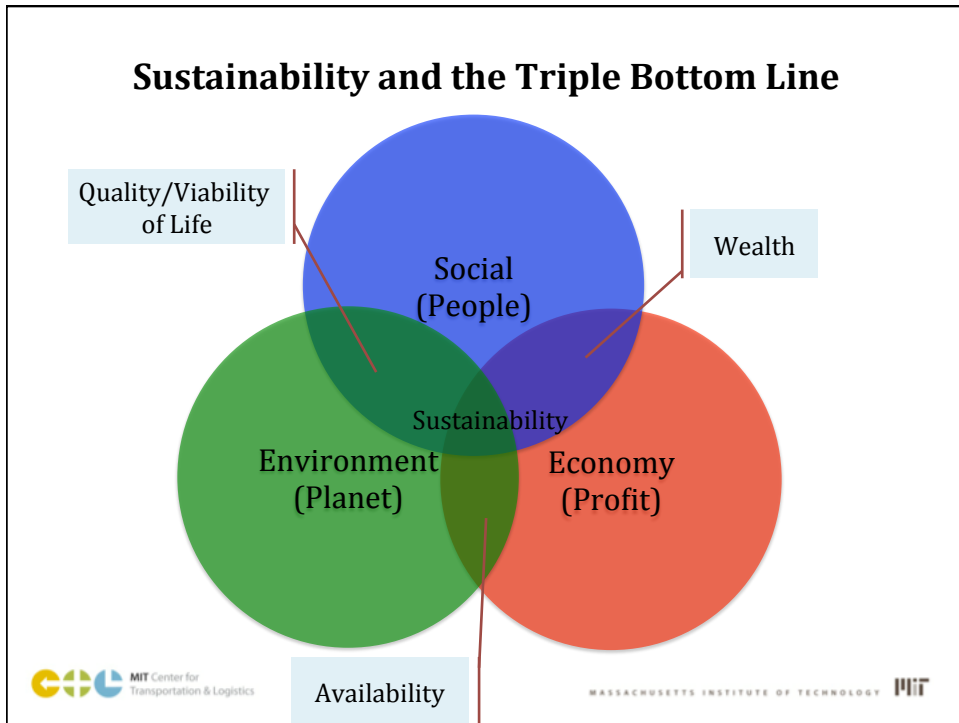
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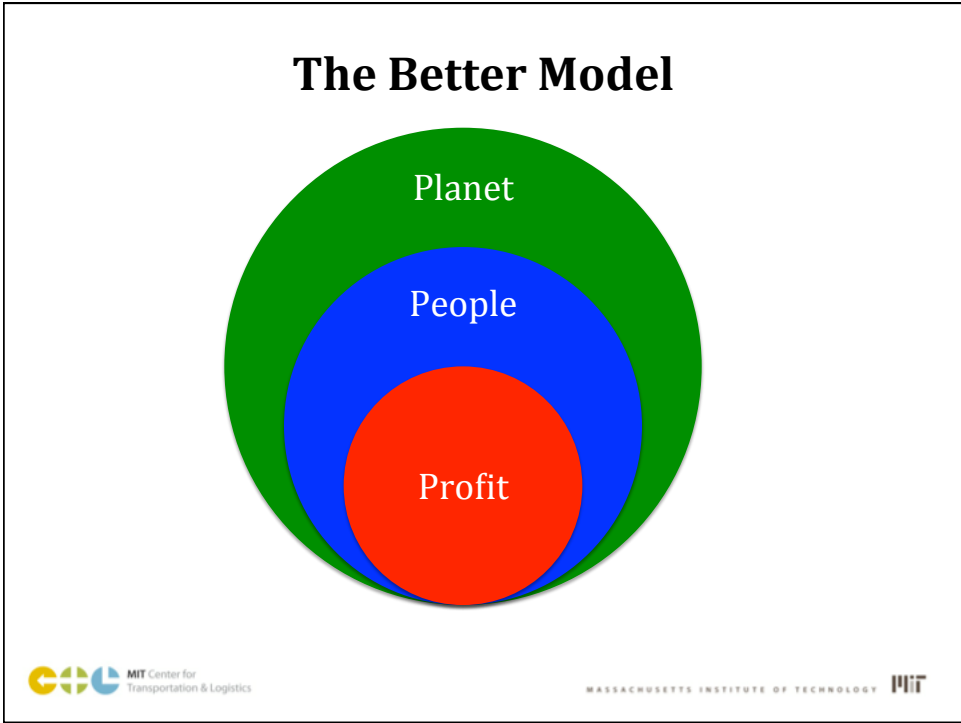


Green Supply Chain Management

January 11, 2013

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Research Director, MIT Center for Transportation and Logistics





MIT Sloan
Management Review
RESEARCH REPORT
WINTER 2012

In collaboration with
BCG
THE BOSTON CONSULTING GROUP

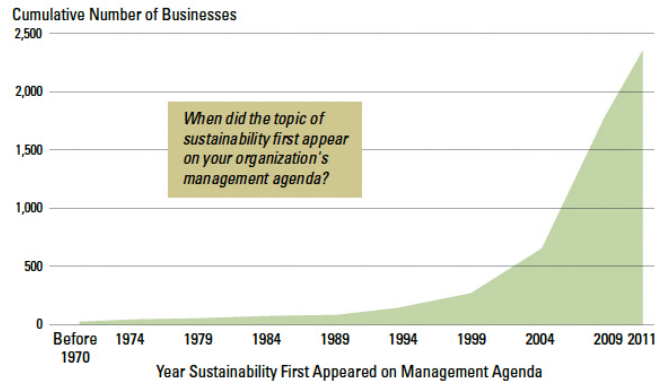
... state of practice ...

(from a business strategy)

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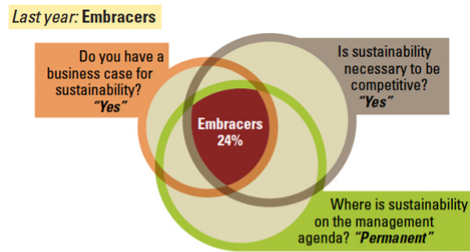
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The Sustainability Movement Nears a Tipping Point

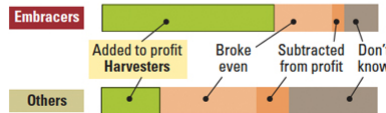


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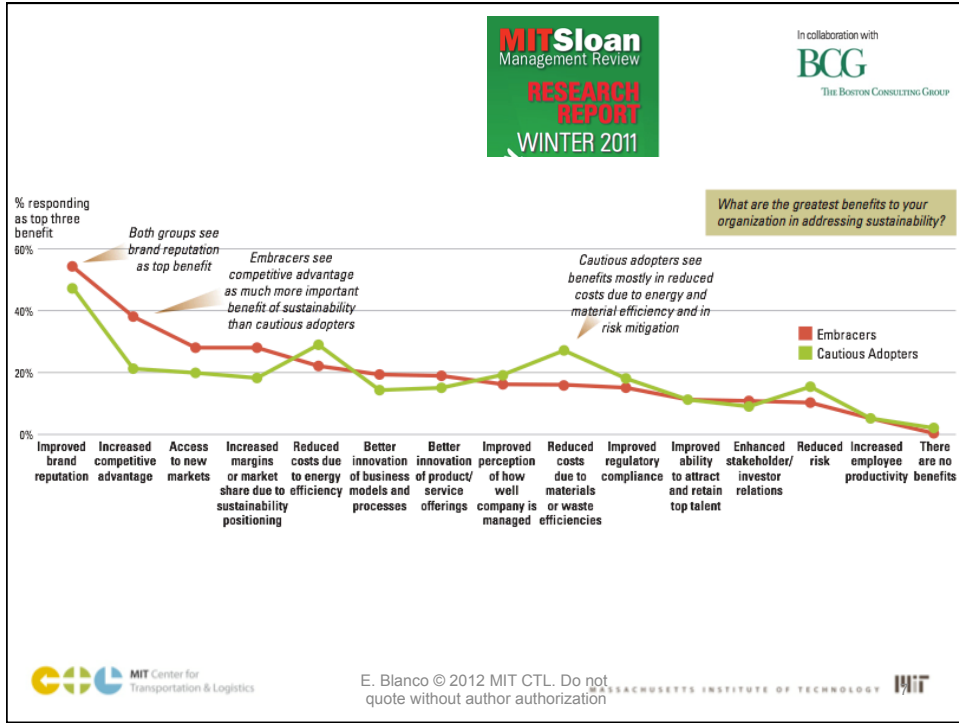
“Embracers” vs. “Harvesters”



This year: Harvesters The effect of sustainability-related actions/decisions on organizations' profitability



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Resources & Environment

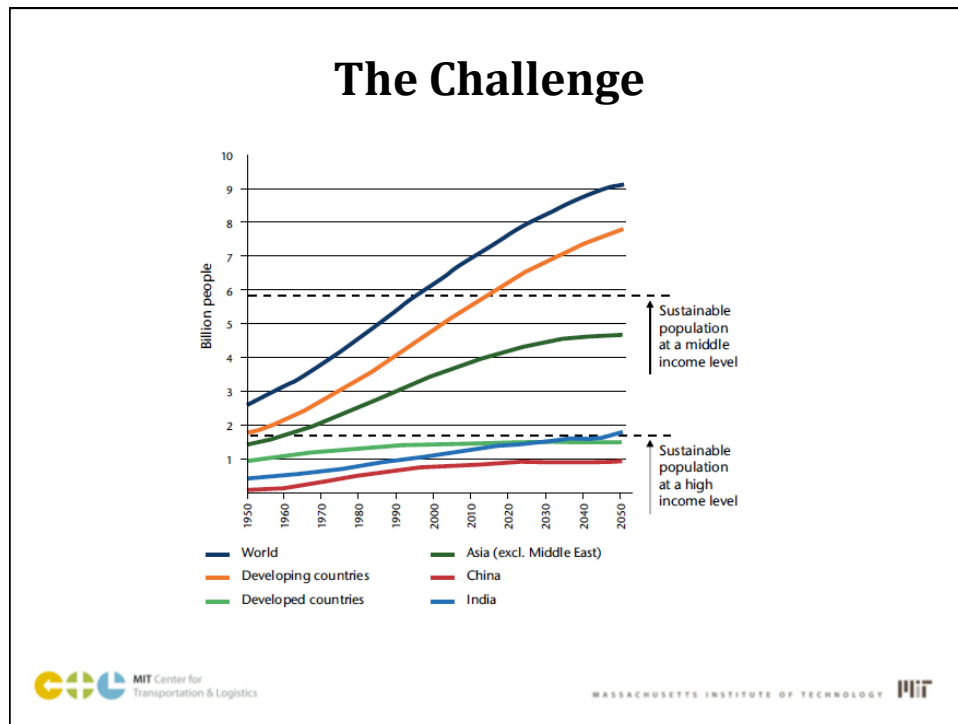


Finite Planet

Vs.



Infinite Desires



Sustainability vs. “Green”

According to the World Business Council for Sustainable Development: **Sustainability** is meeting the needs of the present without compromising the ability of future generations to meet their own needs

- **Green** has a primary focus on the environment
- **Sustainability** includes environment & social

“Traditional” Supply Chain Management

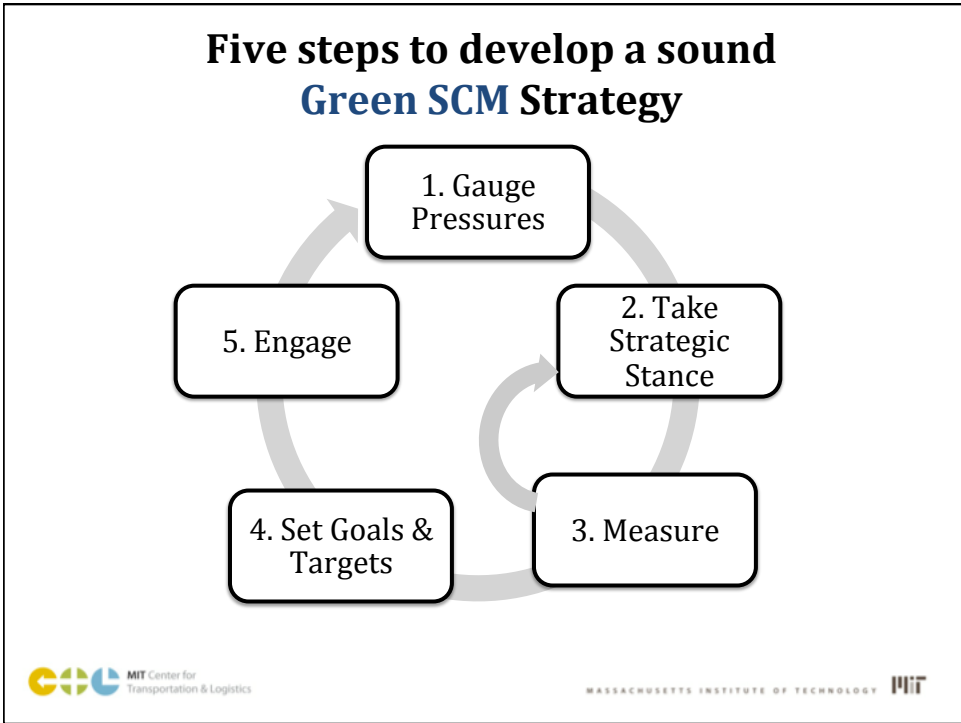
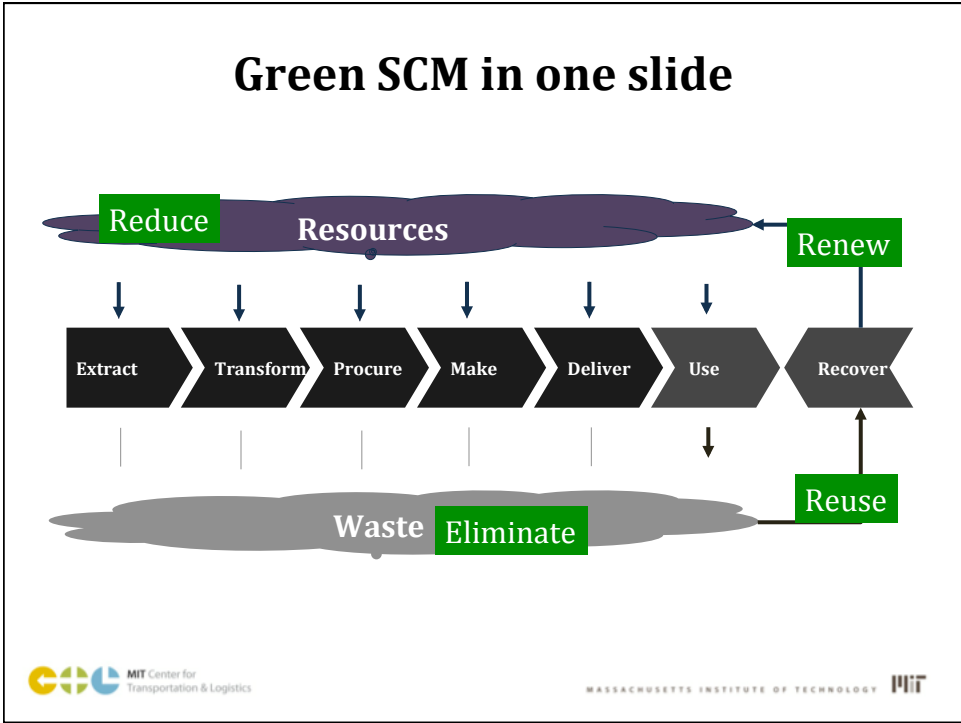
- All parties involved, directly or indirectly, in fulfilling a customer request

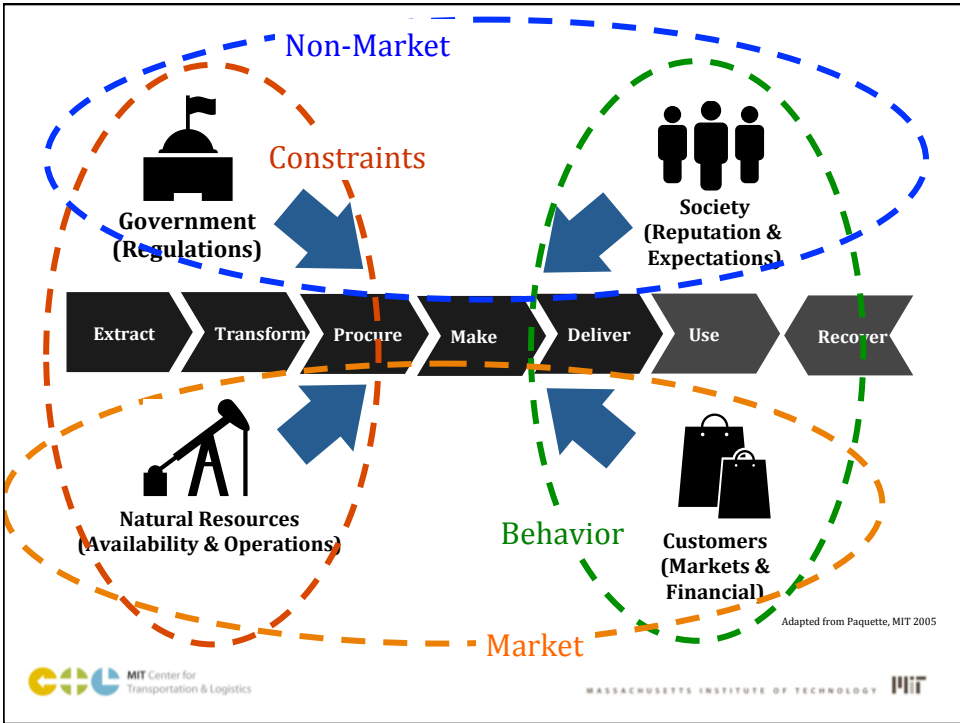


- Source of competitive advantage
 - Innovative business models
 - Value creation
 - Efficiency

What is green supply chain management?

- It can include
 - Reduction of energy use & renewable alternatives
 - Cutting water volumes & countering contamination
 - Reducing, scrubbing or sequestering GHGs
 - Decreasing quantities of waste
 - Recycling
 - Packaging material reductions
 - Reverse logistics

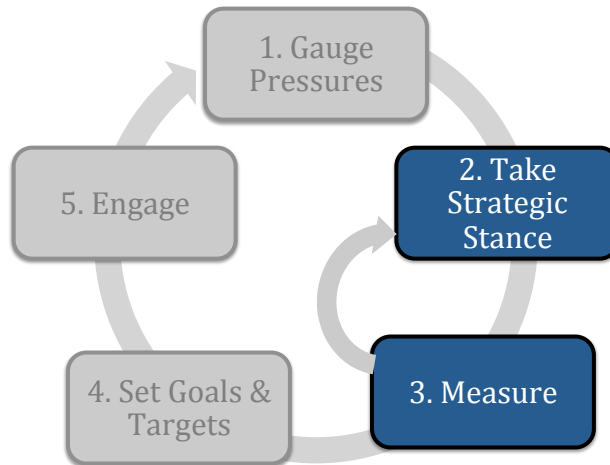




Common Green Focus Areas

- Energy – Non renewable source
- Water – Displacement & contamination
- GHG – Climate Change Risks
- Waste – Disposal impacts

Five steps to develop a sound Green SCM Strategy



Green Strategic Stance

		pressures			
		<i>resources</i>	<i>regulations</i>	<i>markets</i>	<i>reputation</i>
choices	<i>resist</i>	-	breach relocate	exit ignore	damage control
	<i>react</i>	conserve secure	comply	meet satisfy	communicate brand
	<i>innovate</i>	substitute expand	obviate need exceed	drive create	transform embed

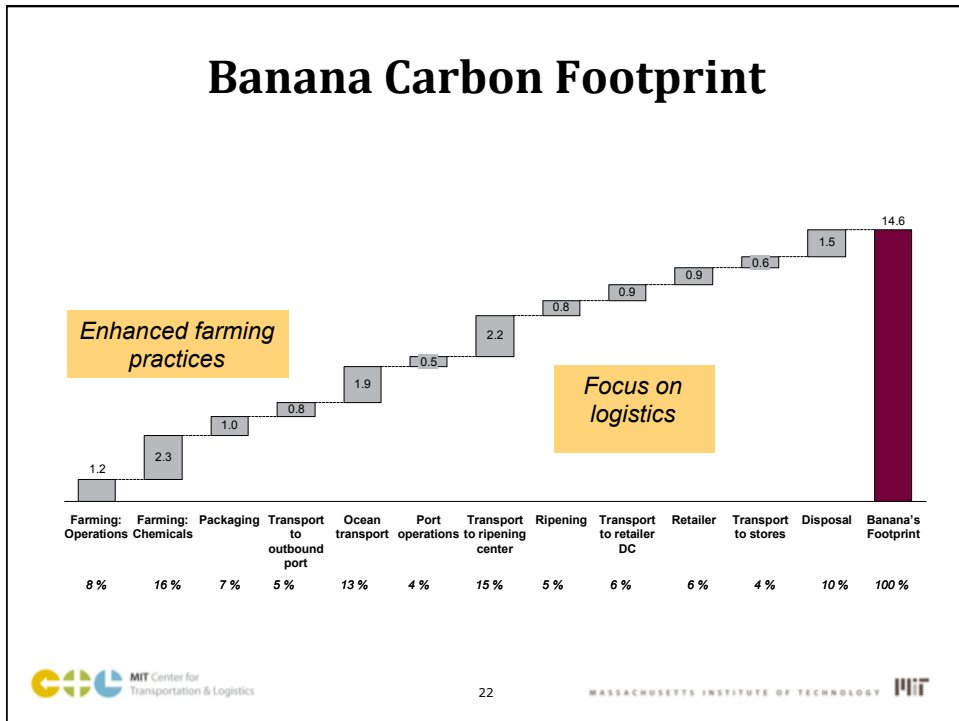
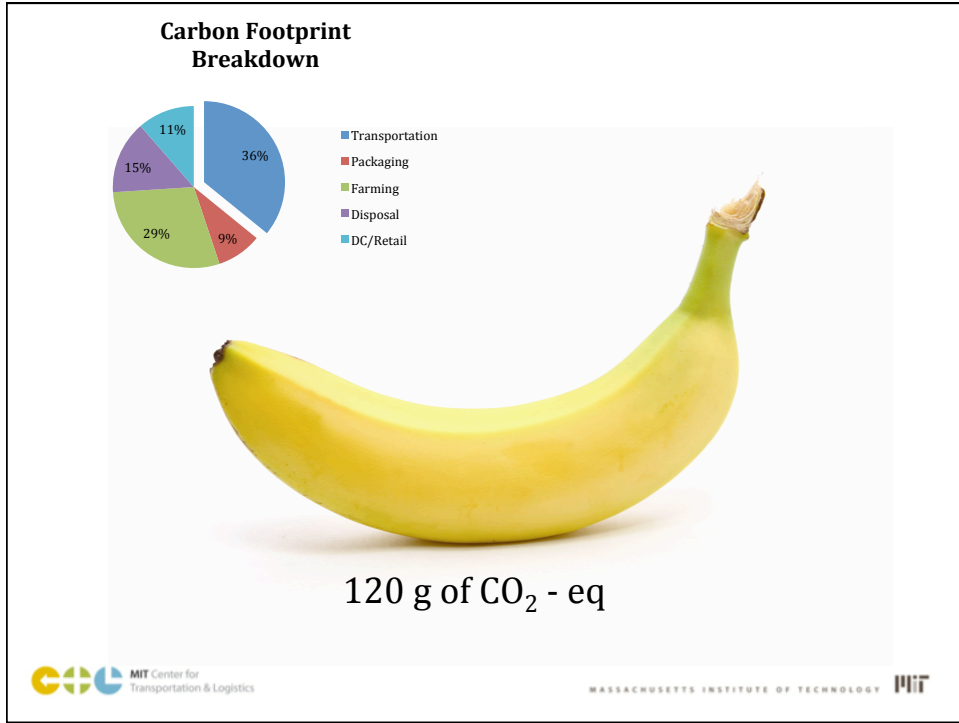
Prioritize, quantify & align with business drivers ...

Adapted from Paquette, MIT 2005



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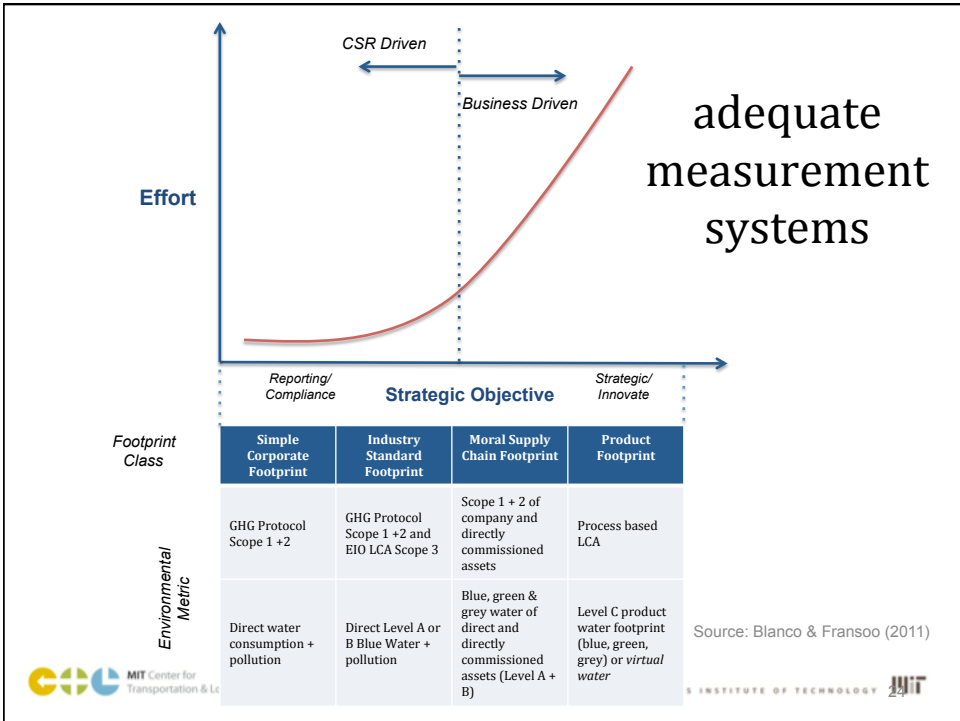
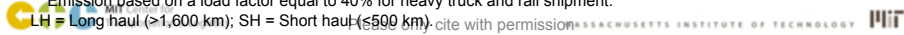




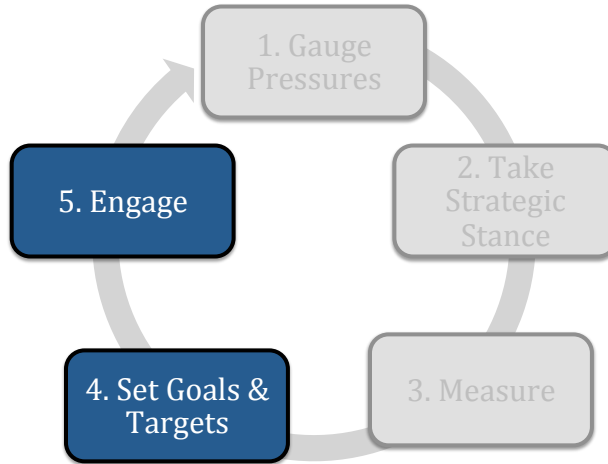
GHG Emission Factors

	GHG Protocol Initiative, US ¹	NTM, Sweden ²	McKinnon* UK Freight ³	McKinnon** UK Freight ³
LH	570	552	N/A	N/A
SH	1,580	N/A	1,420 to 1,925	1,420 to 1,925
40t	30	50	52	138
Diesel	20	17	22	35
Ocean	10	8	7	7

Emissions expressed in grams CO2 per metric tonne per km
 Source [1] : WRI-WBCSD (2003): GHG Protocol Initiative
 Source [2] : Network for Transport and the Environment (NTM), Sweden as quoted by Mikel Hansen, Maersk Logistics (2007)
 Source [3] : A. McKinnon (2007): CO2 Emissions from Freight Transport in the UK
 * Emission based on load factor equal to 85% for truck shipment and 65% for rail shipment.
 ** Emission based on a load factor equal to 40% for heavy truck and rail shipment.
 LH = Long haul (>1,600 km); SH = Short haul (<500 km)



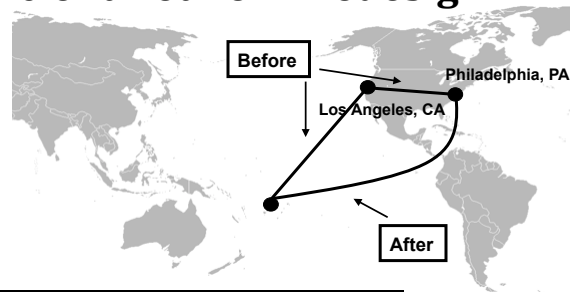
Five steps to develop a sound Green SCM Strategy



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Bottled Water: Carbon-Efficient Network Redesign



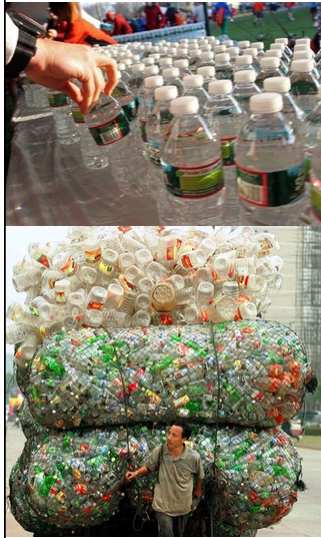
Source: Andrieu & Weiss, MLOG 2008



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Bottled Water: Packaging Waste

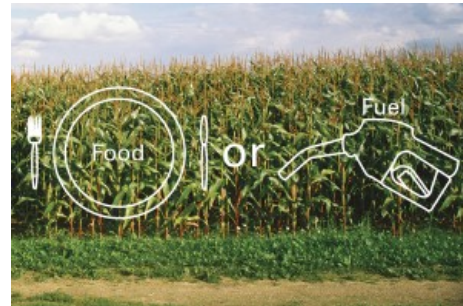


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Ethanol: Good intentions, lack of a SC view



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Concentrated Detergent: Supply Chain Engagement Needed



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Tesco & Carbon Trust Label: Too far ahead



reducing with the Carbon Trust



per pack

The carbon footprint of this product is 100g and we have committed to reduce it. This is the total carbon dioxide (CO2) and other greenhouse gases emitted during its life, including production, use and disposal

carbon-label.com

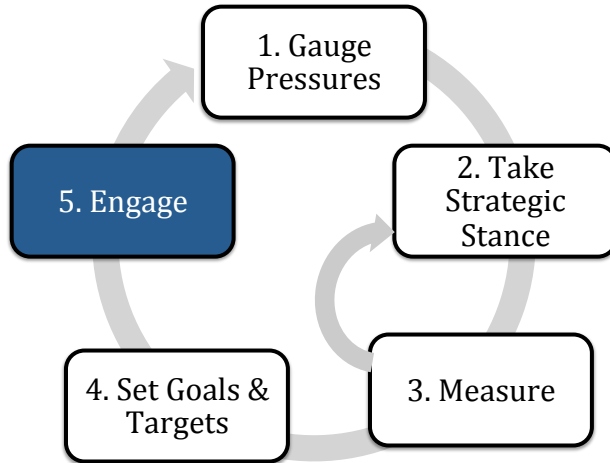
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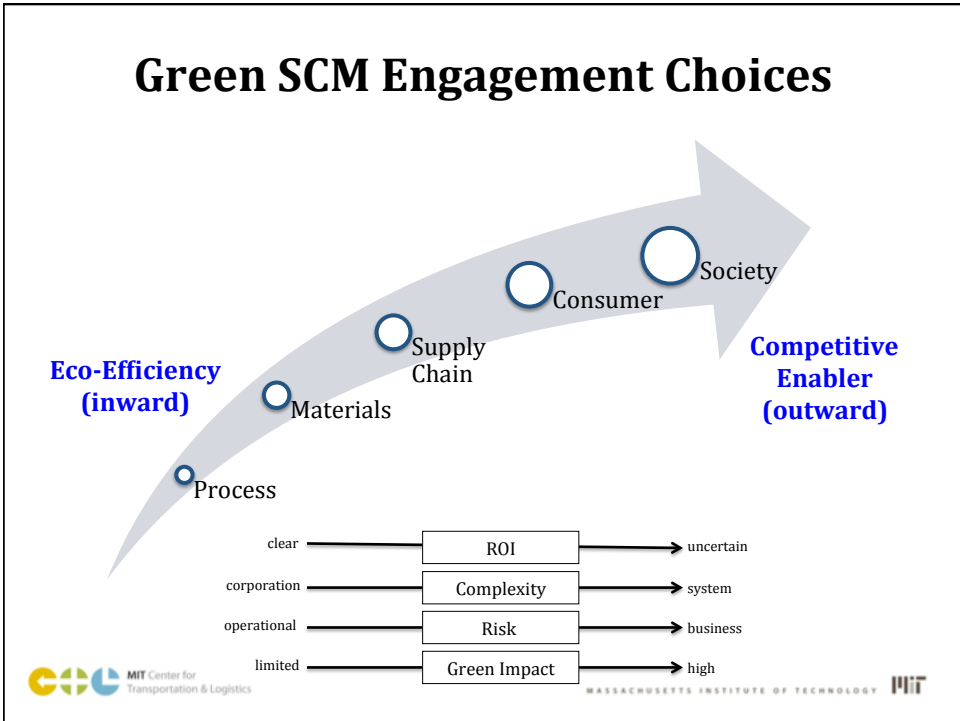
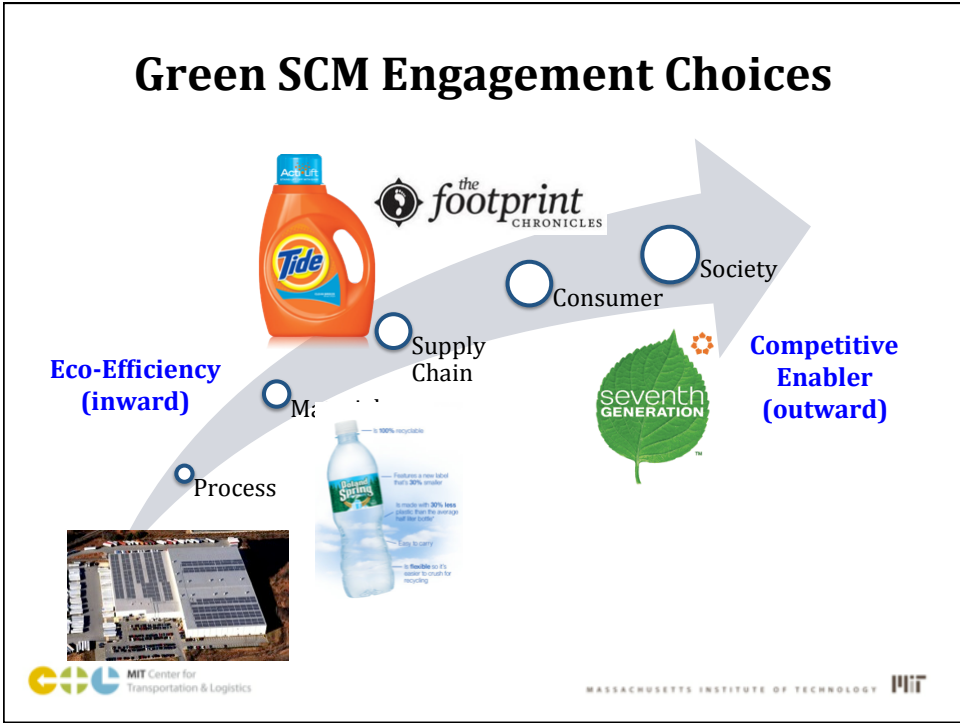
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Small companies changing the game



Five steps to develop a sound Green SCM Strategy





Green SCM as a Competitive Advantage

- **Authenticity**
 - Enables to move beyond eco-efficiency
- **Benefits**
 - Brand/higher prices
 - Ahead of regulations
 - Avoid NGO wrath/use NGOs as allies
 - Better SC risk management
 - Innovation comes to you (SC partners, employees, IP)
 - “Flat-foot” competitors
- **Risks**
 - IP Theft
 - Reliance on a single innovative supplier
 - Higher cost
 - Too far ahead of the industry / wasted effort
 - Becoming a target / developing too high expectations

Questions?

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