



**Welcome to**

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**“Sustainability Research at the Strategy-Supply Chain Interface:  
Current Work and Future Agenda” PDW**

**Saturday, August 10<sup>th</sup>, 2019**

**Organizer: Verónica H. Villena (Pennsylvania State University)**

# PDW Outline

- **10:00-10:05:**      **Intro**
- **10:05-10:40:**      **Segment 1:**  
Presentations
- **10:40-11:10:**      **Segment 2:**  
Discussion
- **11:10-11:30**      **Segment 3:**  
Group discussion

# Speakers/Discussants

## Speakers:

- **Craig Carter**, Professor of Supply Chain Management, Arizona State University
- **Dennis Gioia**, Robert & Judith Klein Professor of Management, Pennsylvania State University
- **Robert Klassen**, Magna International Inc. Chair in Business Administration, Western University
- **Michael Toffel**, Senator John Heinz Professor of Environmental Management, Harvard University

## Discussants:

- **Glenn Hoetker**, Helen Macpherson Smith Trust Chair of Leadership for Social Impact, Melbourne University
- **Verónica H. Villena**, Assistant Professor of Supply Chain Management, Pennsylvania State University

# Segment 1: Presentations

**Craig Carter**

**Denny Gioia**

**Robert Klassen**

**Mike Toffel**

# A Ticking Time Bomb

## Managing Sustainability in Lower-Tier Suppliers

**Verónica H. Villena**

**Denny Gioia**

“The demon in this place is the [lower-tier] suppliers that I know the least about... I don’t have control over the ones that pose the highest risks, so I’m losing sleep over them.”

*Purchasing director of an American automaker (2015)*

## Questions that deserve answers (RQs)

- Are lower-tier suppliers (the suppliers' suppliers) risky members of the supply network? If so, why?
- How can businesses manage sustainability concerning their lower-tier suppliers?

## Findings: Challenges in managing lower-tier suppliers

- **Uncontrollable.** There's very little influence over how they act
- **Invisible.** We often don't even know who these suppliers are
- **Untouchable.** Often located in countries where social and environmental regulations are lax or non-existent, so they simply don't care about sustainable practices
- **Dangerous.** Know they can get away with murder

## Lower-tier suppliers are precarious

Are they proactive concerning sustainability? No not at all. Are they reactive? No, not even that.

They are *passive* about labor/environmental issues, because they know there is almost no risk of being penalized for ignoring the 3Ps

P1 [profit], yes; P2 [people] & P3 [planet], no.

They don't care about sustainability because they know they don't need to care about sustainability

Are they a ticking time bomb just waiting to go off? Oh, yes . . .  
They are unquestionably the weakest link in the supply chain

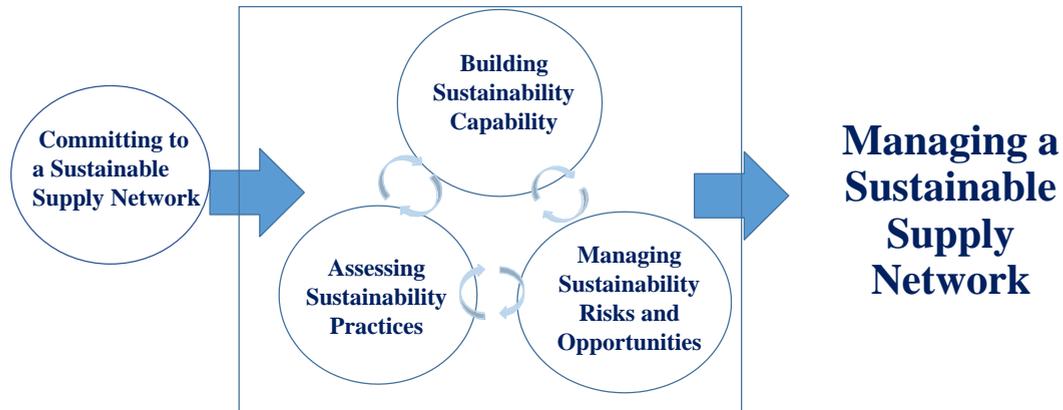
So . . . What can we do to manage the problem?

Learn from those who are actually trying to manage the problem (at least at the Tier-1 level, where MNCs know a lot about managing suppliers)

i.e.

Build a grounded model out of MNCs' best sustainability practices.

# A Grounded Theory Model of Managing a Sustainable Supply Network



Here is the link to the article:

- <https://www.onlinelibrary.wiley.com/doi/10.1016/j.jom.2018.09.004>

# MORE SUSTAINABLE SUPPLY CHAINS: *IS THE JOURNEY MORE IMPORTANT THAN THE DESTINATION?*

Robert Klassen, Jury Gualandris, and William Diebel



## SUSTAINABILITY AT DELL



[www.dell.com](http://www.dell.com)

# EMPHASIS ON OUTCOME (DESTINATION)

Goal	Progress in FY19	3-year Trend	Progress to Goal	Related SDGs
<b>Supply Chain<sup>1</sup></b>				
<b>Supplier GHG Emissions Targets and Reporting</b>				
<p>By 2020, Dell Technologies' suppliers representing 95% of direct materials spend, along with key logistics suppliers, will set specific greenhouse gas (GHG) emissions reduction targets and report on their emissions inventory</p>	<p><b>92%</b> direct suppliers</p> <p><b>61%</b> key logistics suppliers</p>	<p>We are on track to meet our goal by FY20. Suppliers representing 92% of our direct materials spend, along with 61% of our key logistics suppliers spend (five of them), have set GHG emissions reduction targets and publicly report their emissions inventory. This represents a 10% increase for direct suppliers compared to FY18. This increase can be attributed to developing and delivering GHG training to our suppliers in partnership with CDP, while continually reinforcing our expectations. GHG emissions reductions reporting and target setting are scored on our supplier performance scorecard and reviewed with suppliers during quarterly business reviews.</p>	<p><b>97%</b><sup>2</sup> TO GOAL</p> <p>Percentage of direct suppliers by spend with GHG reduction targets</p>	<p>Climate Action (13)</p>
<p><small><sup>1</sup> The scope of the supply chain goals includes suppliers from Dell and Dell EMC, and excludes RSA, SecureWorks, Virtustream, Pivotal and Boomi. <sup>2</sup> Progress to goal is being calculated based on direct suppliers only.</small></p>				

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## Troubled waters: The dangers of ocean plastics

### Should Dell address this challenge?

- what outcome is expected?
- implications for its supply chain?
- what process is needed?



Meet the estimated 5+ trillion particle problem few are talking about.

Each year, **8 MILLION TONS** of plastic enter the ocean — enough to put five grocery bags of plastic trash on **every foot** of coastline around the world.



**90%**  
of all the trash now floating on the ocean surface is **PLASTIC**.

Most ocean plastic is under **5 mm** — roughly the size of a **pencil eraser**.

Why microplastics are a big problem.



Plastics break down in the ocean as a result of:

- **UV radiation** from sunlight
- **Friction** within the ocean
- **Ingestion** by sea life

To sea life, microplastics resemble **phytoplankton** — in some places outnumbering plankton **26 to 1**.



These microplastics make their way up the food chain and into **your stomach**.

In fact, the average seafood eater ingests **11,000 plastic particles** per year.

**93%**  
of Americans today age six and over **test positive** for BPA.

Scientists have linked BPA to:

- Certain types of cancers
- Impaired immune function
- Obesity
- And many other health issues

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## WHAT IS THE JOURNEY FORWARD?

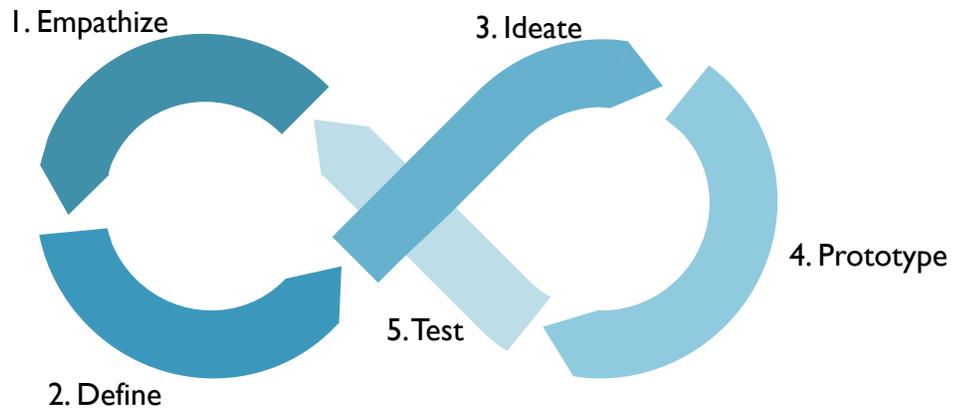
- The journey seems simple:
  - strategically prioritize improving sustainability outcomes
  - expand sustainable sourcing
  - participate in public policymaking and
  - pursue supply chain innovation
- > novel products, processes, and business models result.
- Do we plan the journey or just let it unfold?
- What is the destination of the journey (i.e., effectiveness)?
- To what degree are we accountable for resources and time used on the journey (i.e., efficiency)?
- What practices or structure might be used to guide the journey?
- Who should have a “say” in the journey?



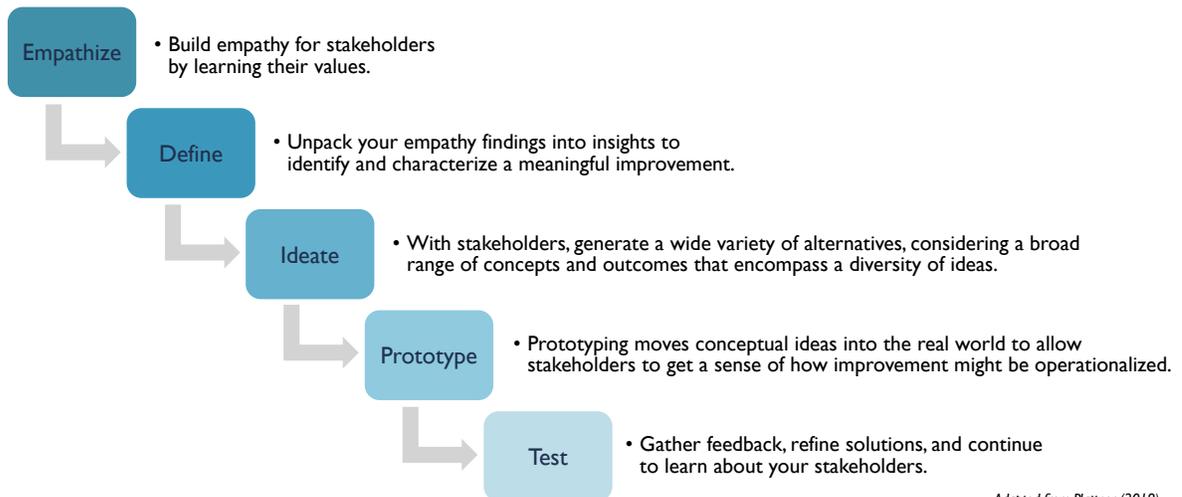
## INFORMATIVE THEORETICAL FOUNDATIONS

- Institutional theory
- Network theory
- Change management
- Social innovation
- Design thinking

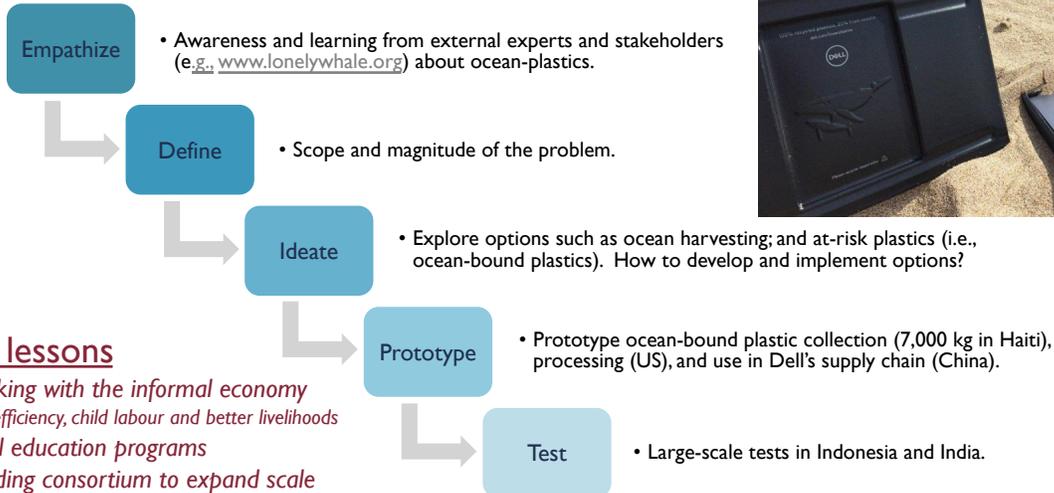
## DESIGN THINKING – STAKEHOLDER-CENTRIC INNOVATION



## LEVERAGING DESIGN THINKING & OPENNESS



## DELL – DESIGN THINKING FOR OCEAN-PLASTICS



## RESEARCH: LOOKING FORWARD

- How might more sustainable supply chains be co-defined and developed with an emphasis on the Journey?
  - engage multiple stakeholders beyond supply chain partners
- Iterative steps, beginning with empathy and openness
- How might the journey best be assessed?

Sustainability Research at the Strategy-Supply  
Chain Interface: Current Work and Future Agenda  
*Cross-Disciplinary Sustainability Research*

Mike Toffel

AOM 2019

## Some of my sustainability research that spans strategy &amp; operations/supply chains

Dependent variable	Some explanatory variables	Theoretical framing	
Adoption of environmental management practices	Stakeholder pressures, moderated by org structure	Institutional theory	Delmas & Toffel 2008 SMJ
Pollution levels	Plant's proximity to sibs Plant's proximity to HQ Large plant in small town	Capability transfer w/in org Institutional theory	Doshi, Dowell, & Toffel 2013 SMJ
Disclosure of greenhouse gas emissions	Shareholder resolutions GHG reduction laws	Social mvmt theory Non-mkt strategy	Reid & Toffel 2009 SMJ
Disclosure of climate risks	Shareholder resolutions	Stakeholder theory	Flammer, Toffel, & Viswanathan (in progress)
Scrutiny of automobile emissions testing firms	Competition intensity Subsidiary/licensee/solo Cross-sell opportunities	Competition Governance Firm scope	Bennett et al 2013 ManSci Pierce & Toffel 2013 OrgSci
Scrutiny of social auditors	Who pays Gender composition	TCE: Monitoring function	Short et al. 2016 SMJ
Scrutiny & improvement capabilities of social auditors	Make or buy Competition intensity	Dual source: service quality Make and/or buy: services	Palmarozzo & Toffel (in progress)

# Segment 2: Q&A

- What are we missing when we examine sustainability just from the viewpoint of the supply chain?
- What are the challenges for research and practice when we broaden our scope from sustainability within the firm to sustainability throughout the firm's supply chain?
- What are the most important questions we are not asking when it comes to sustainability and business, and why?

# Segment 3: Small Group Discussion

**Craig Carter**

**Denny Gioia**

**Robert Klassen**

**Mike Toffel**