"Fast LCA":
Modeling Environmental Impacts Of Product Portfolios
Introduction to users, consultants, and third parties

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A collaboration between MIT's Center for Transportation & Logistics and Materials Systems Laboratory.

Executive summary and purpose of this discussion

- Many companies pursue product carbon footprinting (PCF, or "carbon LCA"), for
  - Internal sustainability initiatives and product R&D
  - External communication to consumer watch groups, product labeling etc.

- Initiatives are well under way to report scope 3 and product level environmental impact data to entities such as the Carbon Disclosure Project (CDP) or even large retailers such as Walmart, Tesco
  - Creates medium term "regulatory" pressure
  - Many companies seek "seat at the table" in shaping such initiatives

- However, companies engaging in product carbon footprinting are struggling
  - Traditional methods and software require upwards of 100 hours of a dedicated LCA expert to evaluate the carbon footprint of a single product
  - No company in the world has managed to create cradle-to-grave carbon footprints for its entire product portfolio
  - LCA results of but a few, isolated products are difficult to integrate into enterprise-wide sustainability initiatives
  - Wider business value of LCA and impacts on the bottom line are elusive

- In partnership with PepsiCo, Columbia University has developed a novel methodology to scale up footprinting to thousands of products, fully automatically ("fast LCA")*
  - Methodology has been fully vetted, tested, and piloted in real-life data environment for ~4000 SKUs (PepsiCo)

- "Users": "Fast LCA" can be installed and used at any other company of goods/services

- However, these other "users" will likely require (initial) handholding in adopting and using this methodology
  - Avoid garbage in, garbage out
  - Digest analytical results into actionable business recommendations
  - Independent third party reviews of environmental assessments

* Meinrenken, Kaufman, Ramesh, and Lackner; *Journal of Industrial Ecology* (online first, 08 May 2012) Doi: 10.1111/j.1530-9290.2012.00463.x

This webinar is structured into 4 parts

1. Overview and business value

2. How does it work?

3. Implementation and how/who should use it?

4. Recap of key messages

Key messages on "fast LCA"

- **Fast and scalable: beta software with currently ~4000 SKUs from real life data set (PepsiCo)**
  - ~1000-fold reduction of required manual data entries versus traditional method
  - Maximum use of current IT-systems (company does NOT have to engage suppliers for additional data)
  - Roll-ups and drill-downs at will (country, brand, SKU, etc.)
  - Product comparisons and product tracking over time (e.g., quarterly live feeds from ERP system)
  - Identifies main footprint contributors (is it the packaging, the transportation, an agro product, etc.?)
  - Multidimensional business scenarios (cost, carbon, material consumption, plant energy & water, shipping volumes & distances, waste and recycling)
  - Framework expandable to LCA impacts other than GHG (e.g., embedded water)

→ **Broad decision support with comparatively little FTE effort**

- **Each product done via full, bottom up LCA compliant with GHG Protocol, PAS2050:2011, ISO**
  - No approximation based on economic input/output, financial indicators or any other top down method

→ **LCAs easily auditable and results make (most of) separate scope 3 efforts redundant**

- **Generic and transparent data structure**
  - Works for any product or service LCA (i.e., NOT bespoke to PepsiCo)
  - Primary, i.e. proprietary data (e.g., how much of substance x in the company's laundry detergent?)
  - Secondary, i.e. shared data (typical refrigeration times in the US)

→ **Ideal environment for third party as clearinghouse for parameters, benchmarks, and best practice**