Unlocking the Barriers to LCA Adoption: An Australian Perspective

Research in Progress

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Overview

– Barriers to LCA adoption

– Use of LCA and LCM

– International examples

– LCA research at the Centre for Design

– Future research
Barriers to LCA adoption (examples)

- Time
- Money
- Human Resources and knowledge
- Data availability and quality
- Economic, technical and internal company political arrangements
- No current applications for the methodology
  - Disconnect of LCA with environmental management and supply chain realities
LCM

- Life cycle management is a flexible integrated management framework of concepts, techniques and procedures incorporating environmental, economic and social aspects of products, processes and organisations.
Use of LCA

- E. Industrial ecology assessment
- D. Technology assessment
- C. Industry benchmarking
- B. Performance improvement
- F. Greenhouse gas measurement
- G. Environmental reporting
- I. Marketing
- A. Generic data sets
- H. Labeling
- J. Sales support

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Types of outcomes of an LCA

- **Physical**
  - Changes to production processes or logistics
  - Change to product comparison or packaging

- **Intangible**
  - Understanding how much your process contributes to the total life cycle
  - Organisational changes such as forming LCA committee
  - Communicating with external stakeholders through seminars and environmental reporting
  - Adoption of life cycle thinking by employees
Examples

- BASF – brings economy and ecology together to guide design and manufacturing in their business with the development of an in-house eco-efficiency matrix tool.
Examples

- **SC Johnson** - Greenlist™ system is providing improved accuracy for triple bottom line reporting
Examples

- **Unilever** - used LCA since late 1980’s, guides choice of raw materials, product innovation and design of packaging with lowest environmental impact.
Examples

– 3M – requires all business units to conduct LCM reviews.
Research at the Centre for Design

- Research centre in School of Architecture and Design
- Design and Social Context Portfolio of RMIT University
- Multi-disciplinary team
- 4 research areas

- Sustainable Buildings
- Sustainable Materials
- Sustainable Products
- Life cycle assessment
LCA research at the Centre for Design

- Since mid 1990s
- Companies and government agencies

- Examples:
  - Packaging
  - Building components and products
  - Liquid fuels, transport and electricity
  - Waste management
  - Furniture, office equipment and consumables
LCA research at the Centre for Design

– Development of tools supported by LCA data

– Simple and easy to use tools
  – Matrices
  – Calculators
  – Streamlined LCA
  – Public release LCA
LCA research at the Centre for Design

- Waste wise Co-ordinator
- Policy advisor
- Policy advisor

Waste Wise Calculator

Ecological Footprint Calculators

Bio-fuels Calculator

Waste Wise office program participants
School groups, office managers, households
GHG abatement applications and AGO

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- General manager
- Environmental Rating Matrix
- Employees and customers

- Product developers
- Streamlined LCA
- Marketers for designers and architects

- Policy advisor
- Public release LCA
- Policy development and waste statistic calculations

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Future research

- Explore the challenges of doing LCA
- Identify drivers and barriers to LCA adoption
- Test hypothesis that the development of a ‘tool’ increases the adoption of life cycle thinking