Vision for a North American life cycle inventory data center

Jeremy Gregory, MIT
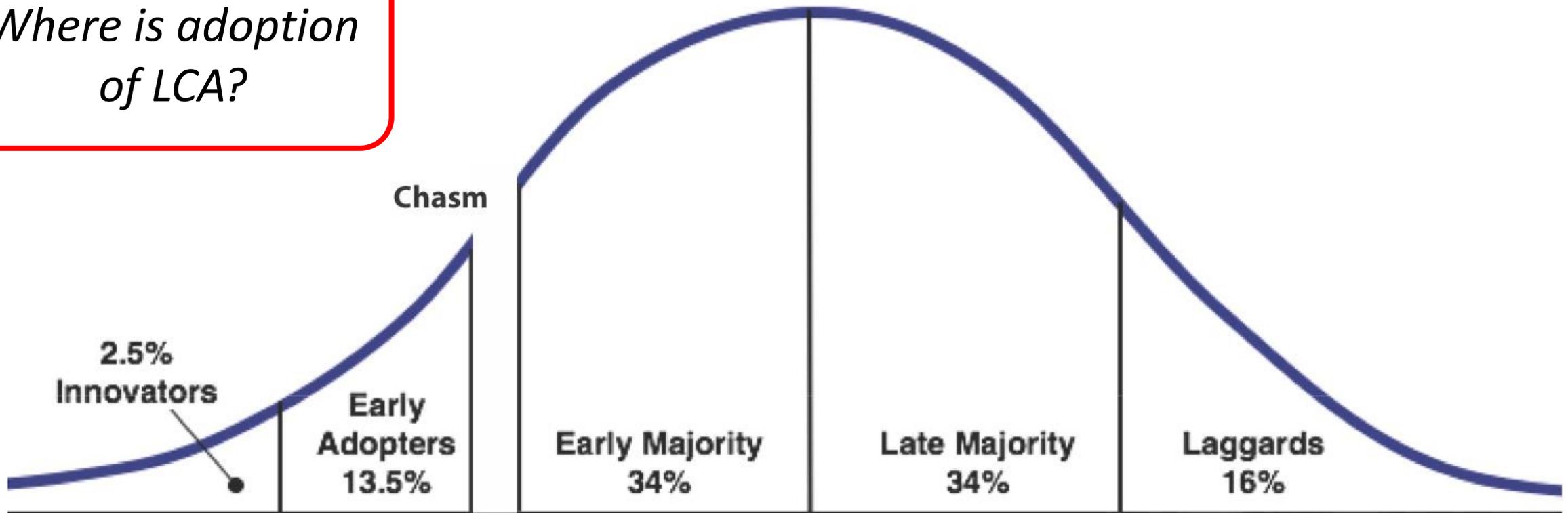
Pavement LCA 2017

April 12-13, 2017

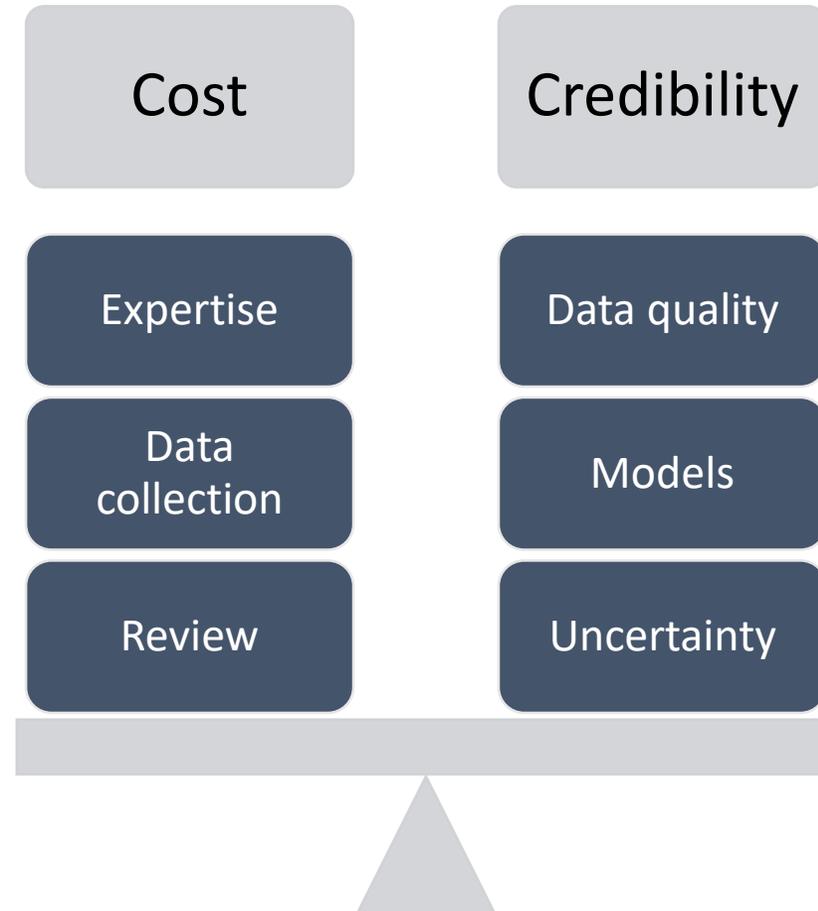# There is an opportunity to expand the adoption of LCA in North America

Technology Adoption Life Cycle

Where is adoption of LCA?

Chasm

2.5% Innovators

Early Adopters 13.5%

Early Majority 34%

Late Majority 34%

Laggards 16%

Geoffrey Moore's adaptation of Everett Rogers's curve

2

What are barriers to crossing the chasm?

Cost
- Expertise
- Data collection
- Review

Credibility
- Data quality
- Models
- Uncertainty

LCI data is a fundamental part of LCA cost and credibility

Existing databases with NA LCI data (focus on US)

Commercial	Government
• Athena	• GREET (ANL)
• DataSmart	• USDA
• ecoinvent	• US EPA
• GaBi	• US LCI (NREL)

Opportunities for improving NA LCI data

LCI Data

- **Interoperability** of data format and structure
- **Consistency** of data scope and models
- **Quality** of data, including temporal, completeness, and reliability
- **Efficiency** of data submission and review

LCA Adoption

- Transform government LCI data into formats that are easily integrated into existing software and databases
- Increase participation of and adoption by private sector (e.g., transform EPDs into LCIs)

Vision for a NA LCI data center

Purpose is to cultivate and maintain transparent LCI data that support North American industry and policy decisions and that are interoperable with data from other regions

Center should be funded at least in part by subscription fees in order to ensure its long-term viability

Center should be a public-private partnership

The ultimate goal is to create a NA LCI database that is comprehensive, reliable, and usable

Value Proposition: Be the primary source for core NA background data
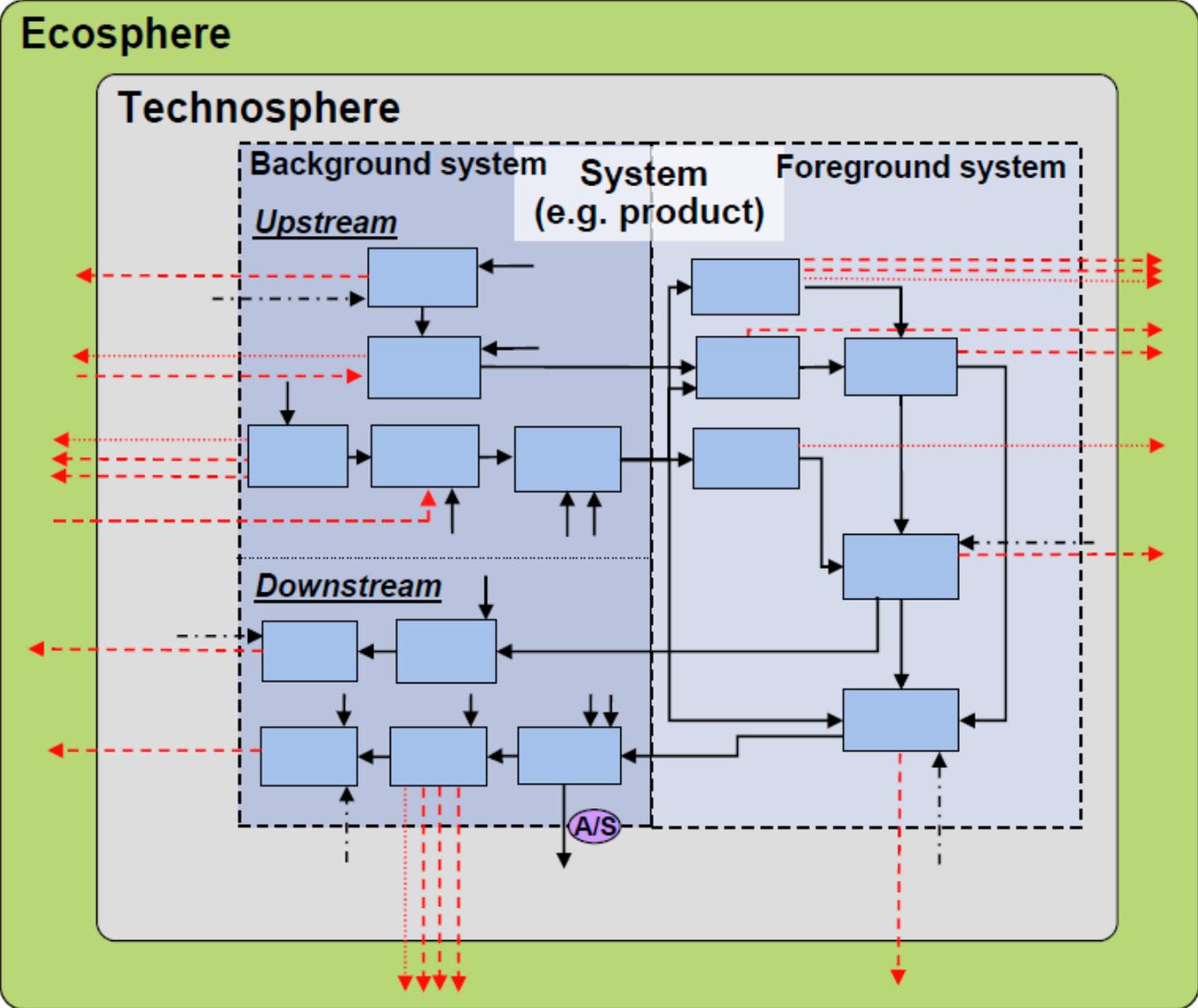
Engage in three key types of LCI data:

Core background data

New publicly available data

New private data

- Identify key gaps in NA LCI data and develop strategies to address them
- Transform existing open LCI data into formats that are easily integrated into existing software and databases
- Facilitate creation of new LCI data
- Increase participation of and adoption by private sector (e.g., transform EPDs into LCIs)

Background vs. foreground data

ILCD Handbook, 2010

Background data:
Common to most analyses (NALCIDC)

Foreground data:
Specific to analyzed system (Specific industries)

Legend:

- Process
- Product or waste flow
- Elementary flow
- Excluded product or waste flow
- Excluded elementary flow
- A/S Allocation / Substitution

8

Without a reliable funding source, a decision will have to be made regarding the mission of the data center

Choose two

| Free to use | Transparent | High quality |

Creation of the center: a coalition of partners

- Coalition of partners assemble and create request for proposals (RFP) to identify an organization that will operate the center

- Coalition establishes terms of RFP, evaluates quotes submitted, and selects entity to run the center

- American Center for Life Cycle Assessment: administrative support for creation of Center

Initial funding for the center

- Coalition partners contribute funds used to seed the center in its start-up phase

- Terms established for what partners receive in exchange for seed funding

- A government or foundation funder will likely be required to make significant contribution to seed fund

Advisory board for the creation of the center

- Advisory board includes stakeholders who want to contribute to process of creating center, but are not able to contribute financially to be a member of the coalition

- Advisory board members will not have voting status for decisions related to the creation of the center

Timeline

Activities to date:

- May 2, 2016: Kick-off web meeting with stakeholders

- Summer 2016: stakeholder survey

- September 30, 2016: stakeholder meeting at LCA XVI

- Fall 2016: two web meetings about value proposition and coalition membership

Next Steps:

- Develop contract for coalition members

- Recruit coalition and advisory group members

- RFP development

- Obtain seed funding

- Once seed funding is obtained:
    - Distribute RFP
    - Select entity
    - Open NA LCI Data Center

Thank you

jgregory@mit.edu

Core Principles

- Transparency
- Interoperability
- Consistency
- Quality

- Usability
- Efficiency
- Accessible
- Regularly updated

ACLCA: administrative support for creation of Center

- ACLCA has offered to act as legal entity that manages the creation of the center, including
  - writing contracts for each coalition partner
  - receiving fees from partners
  - managing selection of entity chosen to run the center
  - creating a contract for the entity
  - distributing fees to entity
- *Purely an administrative role*
- Effort will be truly collaborative → want to ensure that a broad range of stakeholders are engaged in creation of the Center