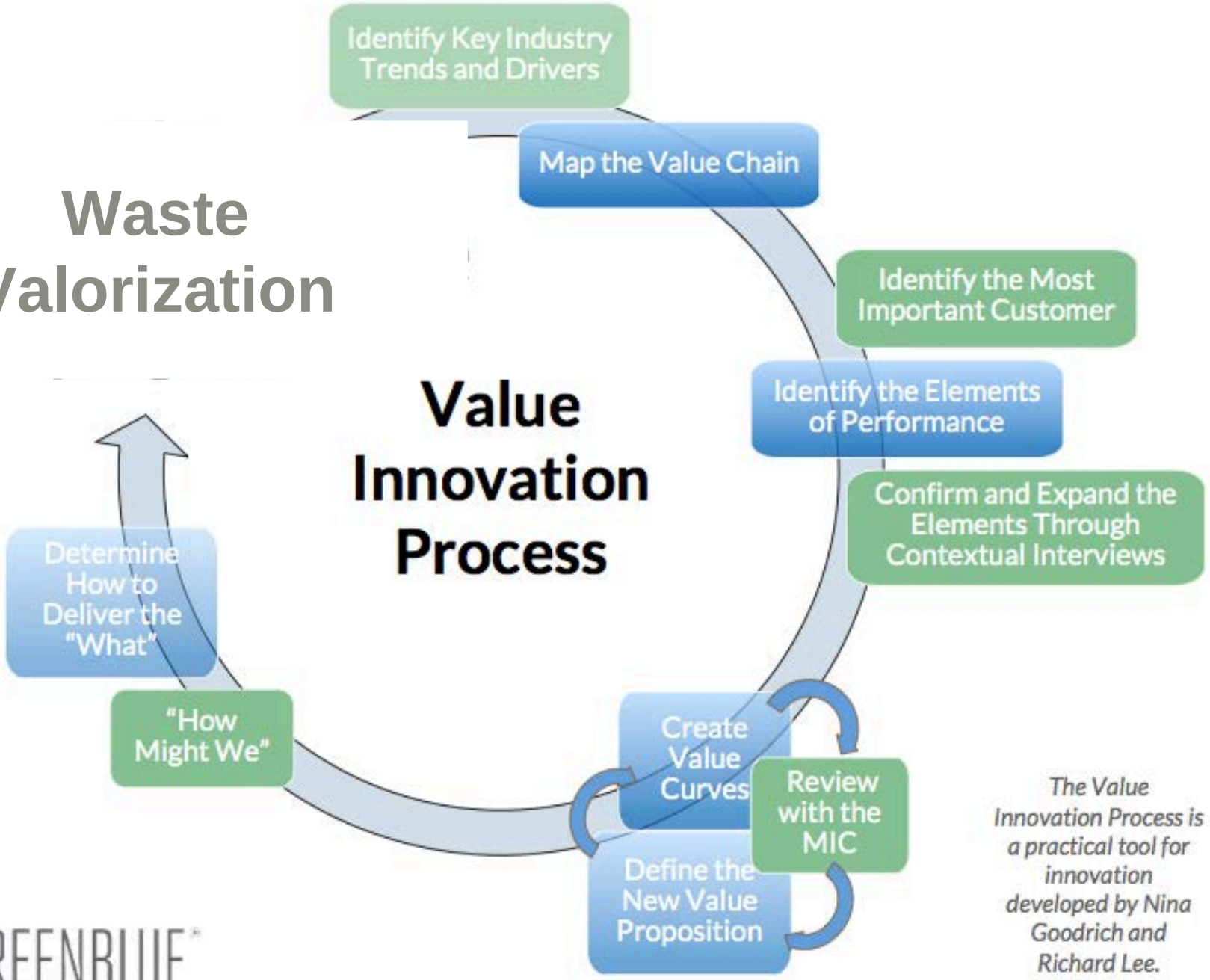
Waste Valorization



The Value Innovation Process is a practical tool for innovation developed by Nina Goodrich and Richard Lee.

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Why use VIP process for Waste Valorization?

We need to understand the "job" that Waste Valorization is hired to do.

Objectives for the workshop: 1) develop a new definition for Waste Valorization that doesn't involve burning of biomass for merely energy, 2) build an agenda for next year's conference from the discussion at this event, 3) focus on an idea for research or a project that perhaps the University can be involved with.

Waste Valorization is closed-loop manufacturing that can utilize the by-product from its own manufacturing to make domestically produced bio-based feedstock and valuable products such as fines, chemicals, materials (specifically polymers) and fuels.

- Agricultural practices, growers
- Aquaculture
- Timber/Forestry
- Food manufacturers and processors
- Waste processors
- Biochemical and Petroleum industries

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What are Industry Trends & Drivers?

- Trends and drivers identify economic, social, environmental, and technological trends in an industry, and create a foundation for the rest of the VIP.
- Trends and drivers help to provide context as to why the VIP is being carried out, and define some of the key forces in an industry or market.
- Trends and drivers represent ideas, concepts, challenges, and opportunities.

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Key Trends and Drivers Group Conversation

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Trends and Drivers: *Waste Valorization*

Market & Economic

Waste stream contamination

Single stream conversion

Brands' sustainability goals (including marketing)

Materiality assessments

Evolving infrastructure

Materials markets, recycl. content

MRF economic viability

Export of recyclables to Asia

Intersection with composting

Capturing recyclables

Circular economy

Environmental

Greenwashing; the pursuit of truth

Navigating tradeoffs

Lack of progress on recycling rates

Landfills getting bigger, cheaper (waste to energy as well)

Impacts to air, water, wildlife, climate, biodiversity from raw material extraction

Impacts to ocean & marine life from litter (plastic pollution)

"Zero waste"

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Trends and Drivers:

Social/Political/Cultural

COP 21
EPA Food Waste reduction
EPA SMM Strategic Plan
Price of Oil
Circular Economy

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What is the Value Chain?

The Value Chain identifies each entity (such as companies, organizations or groups of people) that adds value or create value around what you do or provide.

- Can be long or short
- Can be visualized in many forms, such as a web, a circle, or a line
- If what you do or provide doesn't help all the entities along the value chain, then you will struggle to succeed.

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Value Chain to be created by Group

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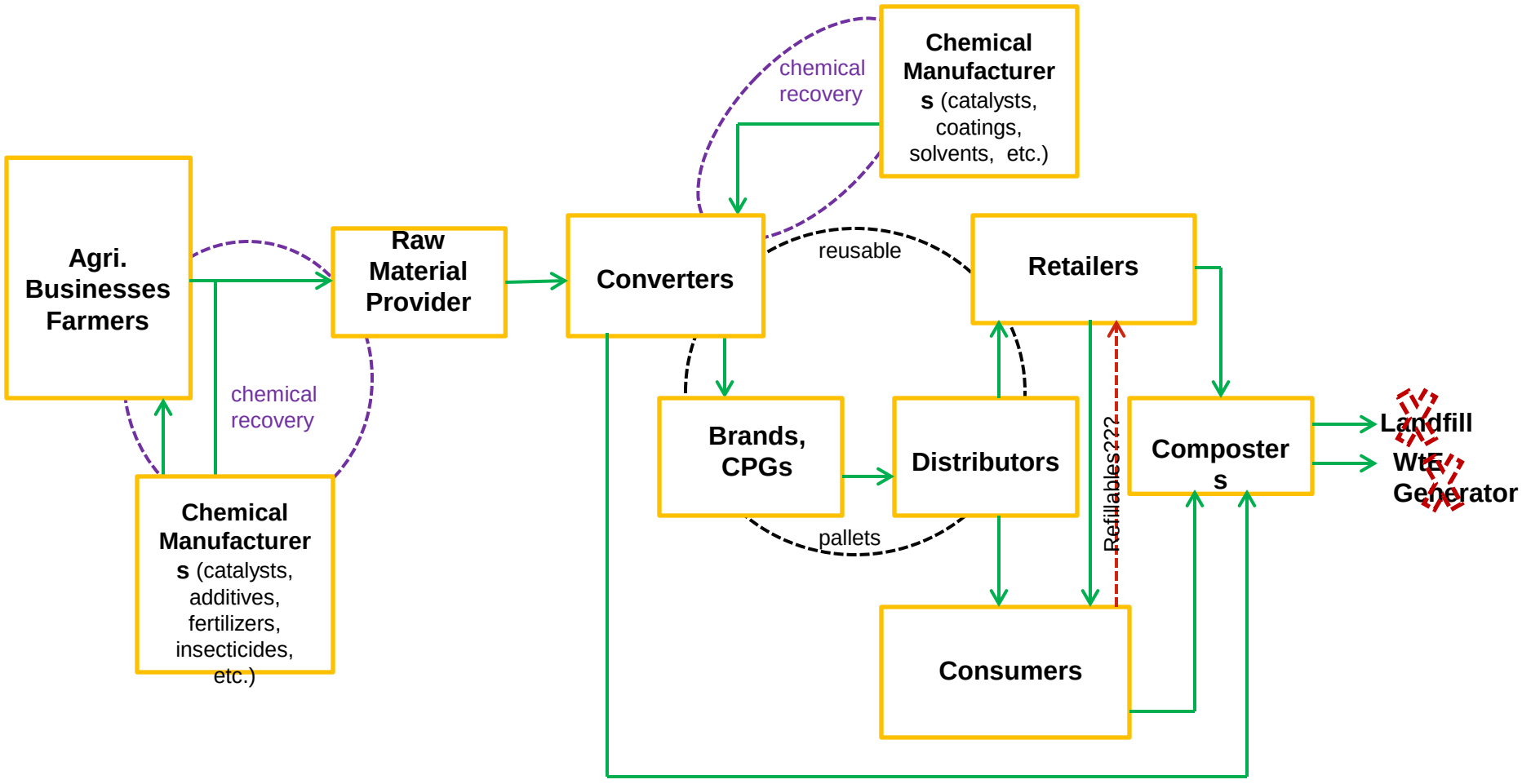
Sample Value Chain for SMM – Biopolymer Packaging



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What is an Element of Performance?

- A succinct statement
- Important to the most important customer
- Not an objective
- Not a Feature or Benefit
- Can be observed or performed in a measurable way

Elements should be limited to 15 or less

We should be able to ask the question: "*How might we….?"* for each element of performance.

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Group Development of Elements of Performance

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Waste Valorization
Potential Elements of Performance

- System circularity
- Resource efficiency
- Service delivery
- Use cost
- Asset recoverability
- Risk mitigation
- Profit margins
- Job creation

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How Might We and Delivering the “What”

- The solution development comes at the end of the process when we know who are the most important customers and what is important to them
- Do these around the elements of performance.
  1.) Definition of Waste Valorization
  2.) Identification of critical areas for further discussion
    - Topics for next years conference
    - Possible Projects

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