

Jump-starting the Circular Economy

Summary of presentations

Rotterdam, 18th February 2016

Eric Mieras, PRé Consultants

Jan van der Kaaij, Between-us

Developing Circular Economy Business Models

Jump-starting the Circular Economy

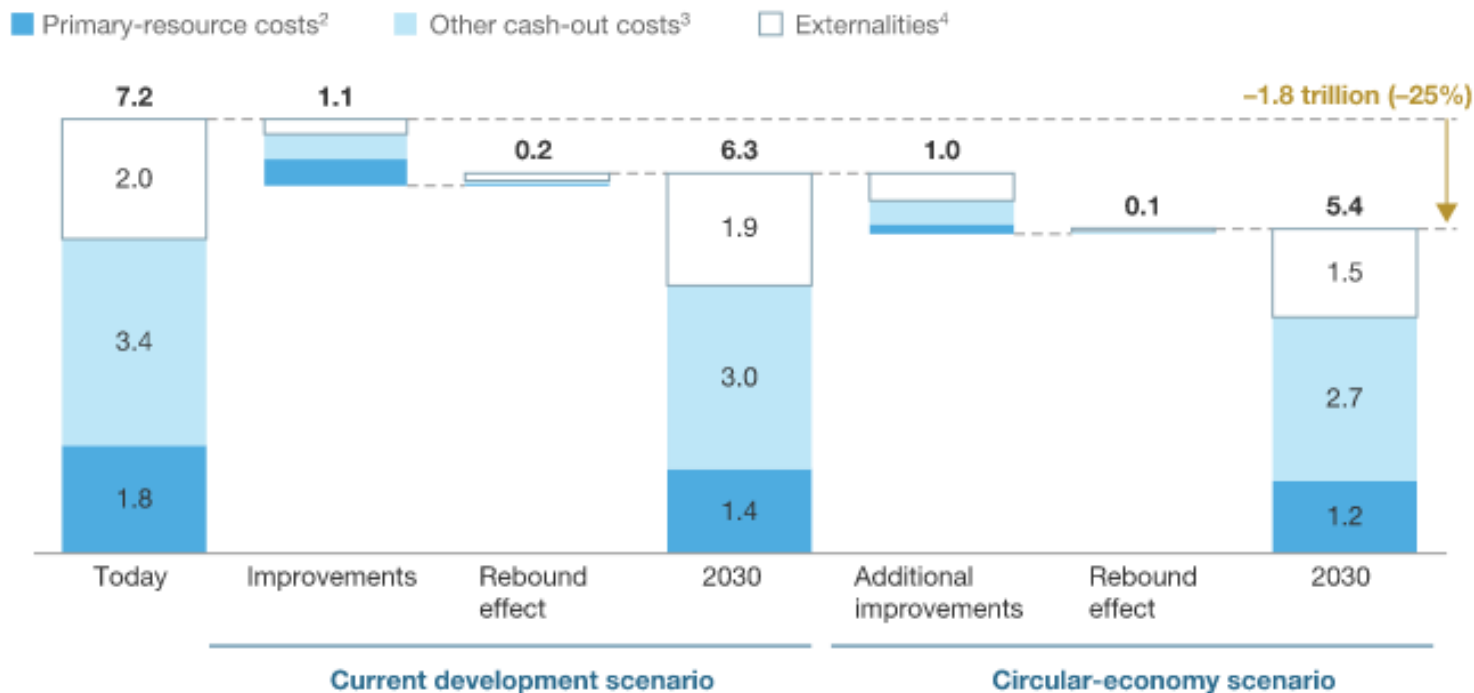
Jan van der Kaaij, Between-us



Only 26% of CEO's trust they have a clear business case for sustainability

Circular economy thinking could (partially) fix that

Annual total cost of producing and using primary resources, EU-27, € trillion¹



But that doesn't come without its' challenges

Some of the challenges:

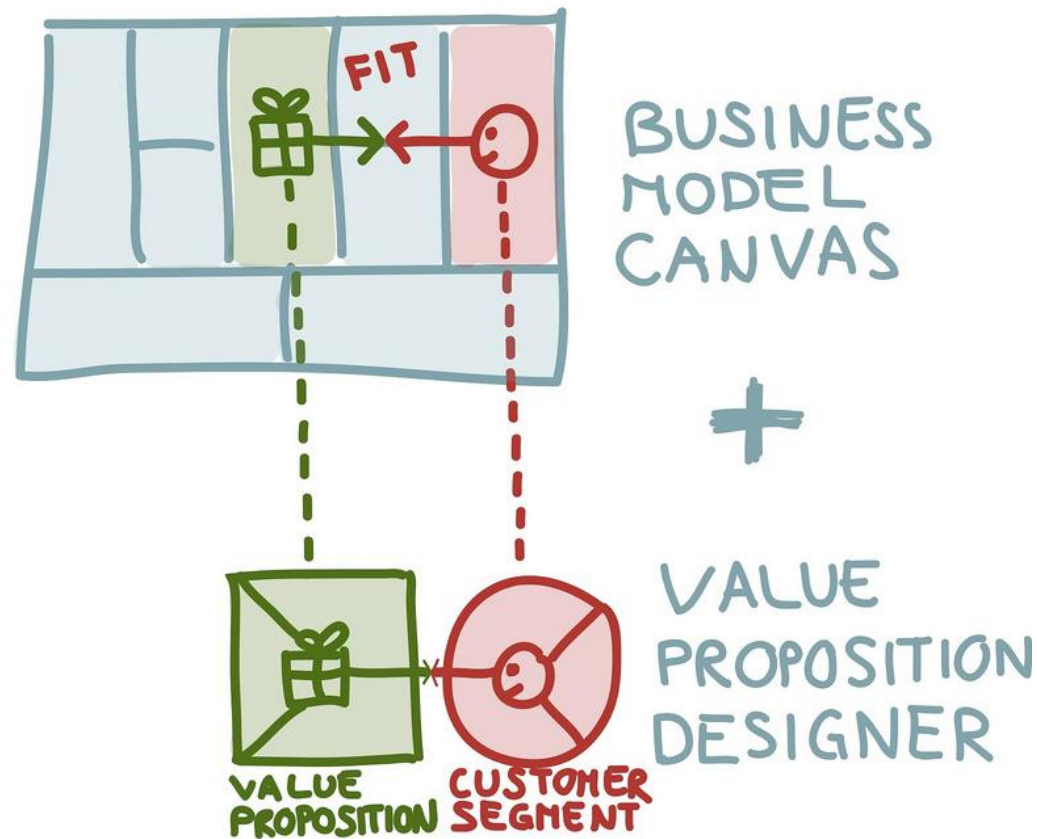
- Building sufficient value chain partnering capabilities
- Creating a corporate culture of “rethinking”
- Identifying the right circular focus areas
- How to drive the theoretical value out
- ...

Existing tools: using old maps to find new land?


- **Substitute** : How can I substitute the place, time, materials or people?
- **Combine**: Where can I build synergy?
- **Adapt**: What part of the product could I change?
- **Modify**: What will happen if I modify the process in some way?
- **Put to another use**: What other market could I use this product in?
- **Eliminate**: What would happen if I removed a component or part of it?
- **Reverse**: What if I reverse the order it is done or the way it is used?



Customer focus is hard as “Circular” flips the regular business design process



RESOLVE-framework illustrates broadness of cases

REGENERATE 	SHARE 	OPTIMISE 	LOOP 	VIRTUALISE 	EXCHANGE 
<p>Regenerate and restore natural capital</p> <hr/> <p>Power by renewable energy</p>  	<p>Keep product loop speed low and maximise product utilisation</p> <hr/> <p>Share Car-sharing</p>     <p>Ride-sharing</p>   <hr/> <p>Reuse</p> 	<p>Optimise system performance</p> <hr/> <p>Increase performance/efficiency</p>   <p>Value chain</p>  <p>Consumer</p> 	<p>Keep components and materials in closed loops and prioritise inner loops</p> <hr/> <p>Remanufacture</p>   <hr/> <p>Recycle</p>   	<p>Deliver utility virtually</p> <hr/> <p>Autonomous cars and direct virtualisation of materials</p>       <hr/> <p>Virtual travel</p>   	<p>Select resource input wisely</p> <hr/> <p>Substitute resources directly</p> <p>Better-performing materials</p>   <hr/> <p>Substitute resources indirectly</p> <p>Product</p>  <p>Technology</p>  <p>Process</p> 
<p>Reclaim land used for transport infrastructure</p>  	<p>Prolong Durability</p>  <p>Software upgrades</p>  <p>Modularity/interchangeability</p> <p>Maintenance</p>	<p>Improve intelligence</p> <p>Internet of things</p>  <p>Big data/machine learning</p>  			

Source: Company interviews; Web search. S. Heck and M. Rogers, *Resource revolution: How to capture the biggest business opportunity in a century*, 2014.

Identifying circular opportunities requires inside out as well as outside in

| BETWEEN*US |



Inside out

1. Use LCA to identify hotspots

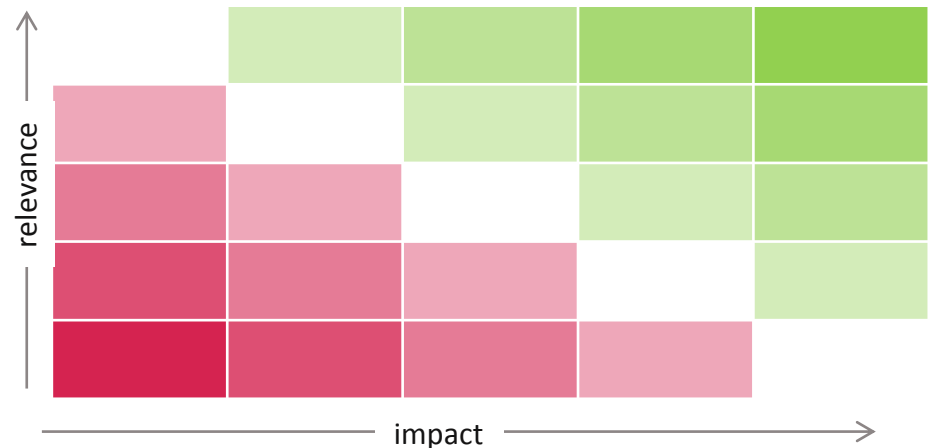
Outside in

2. Identify company materiality issues and assess relevance to stakeholders

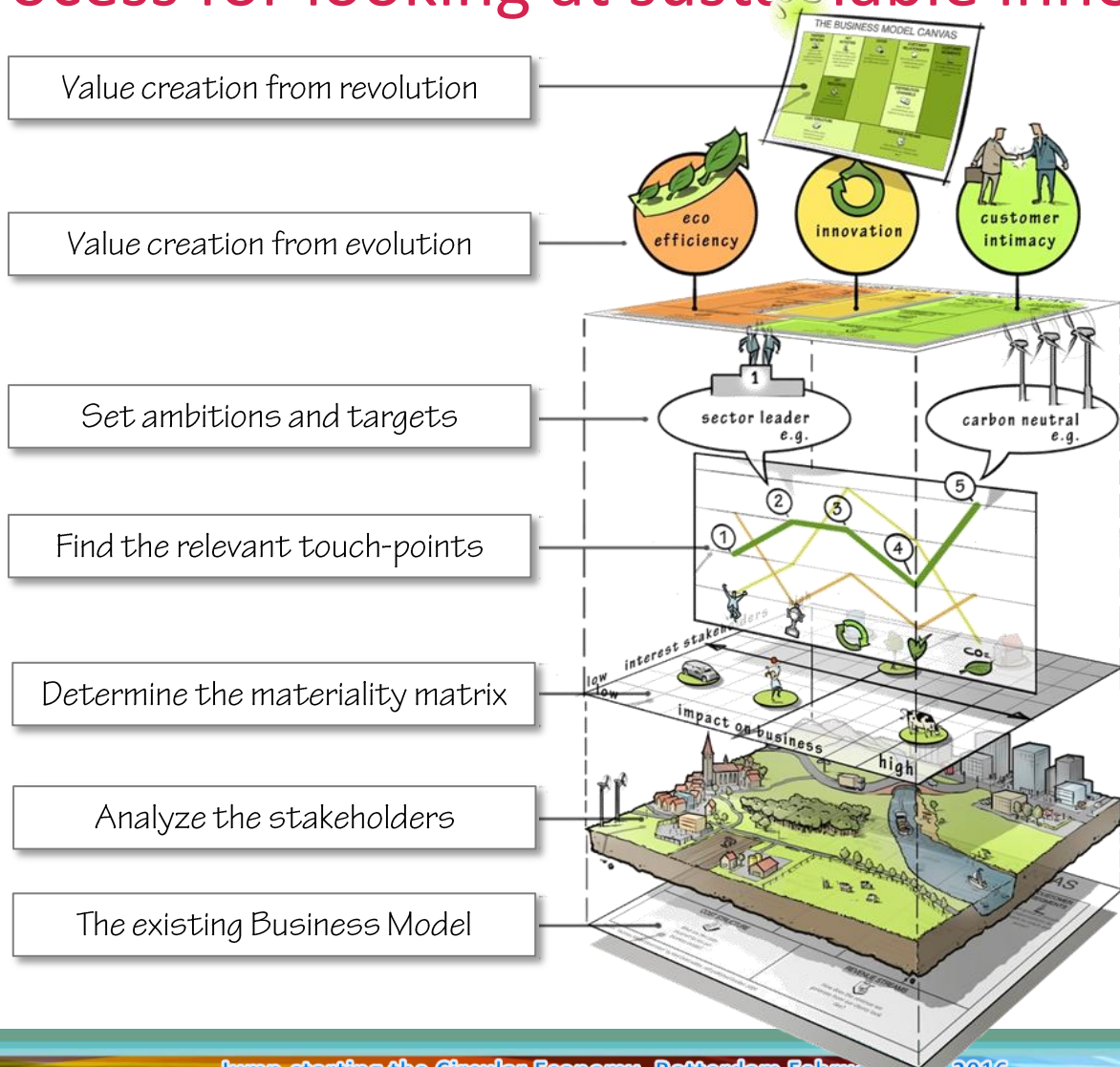
Opportunities

3. Map in a matrix to identify opportunities for innovation

INNOVATION OPPORTUNITY MATRIX































Our process for looking at sustainable innovation






5 directions for circular business model design

- **Circular Supplies:** supply fully renewable recyclable, or biodegradable resource inputs that support circular production and consumption systems.
- **Resource Recovery:** eliminate material leakage and maximize economic value of product return flows.
- **Product Life Extension:** extend the current lifecycle of a product by means of repairing, upgrading, and reselling.
- **Sharing Platforms:** stimulating collaboration among product users.
- **Product as a Service:** products are used by one or many customers by means of a lease or pay-for-use arrangement.

What objectives: choosing open methods to innovate

	Innovation	Culture	New Markets	Platform
Events				
Support Services				
Startup programs				
Accelerator /Incubator				
Spin-offs				
Investments				
Mergers & Acquisitions				

-  Least recommended
-  Recommended
-  Most recommended

Source INSEAD Business School, Adapted, February 2016

Thank you for your attention

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Combining the strengths of the Circular Economy with Life Cycle Assessment (LCA)

How to (help) make Circular Economy happen

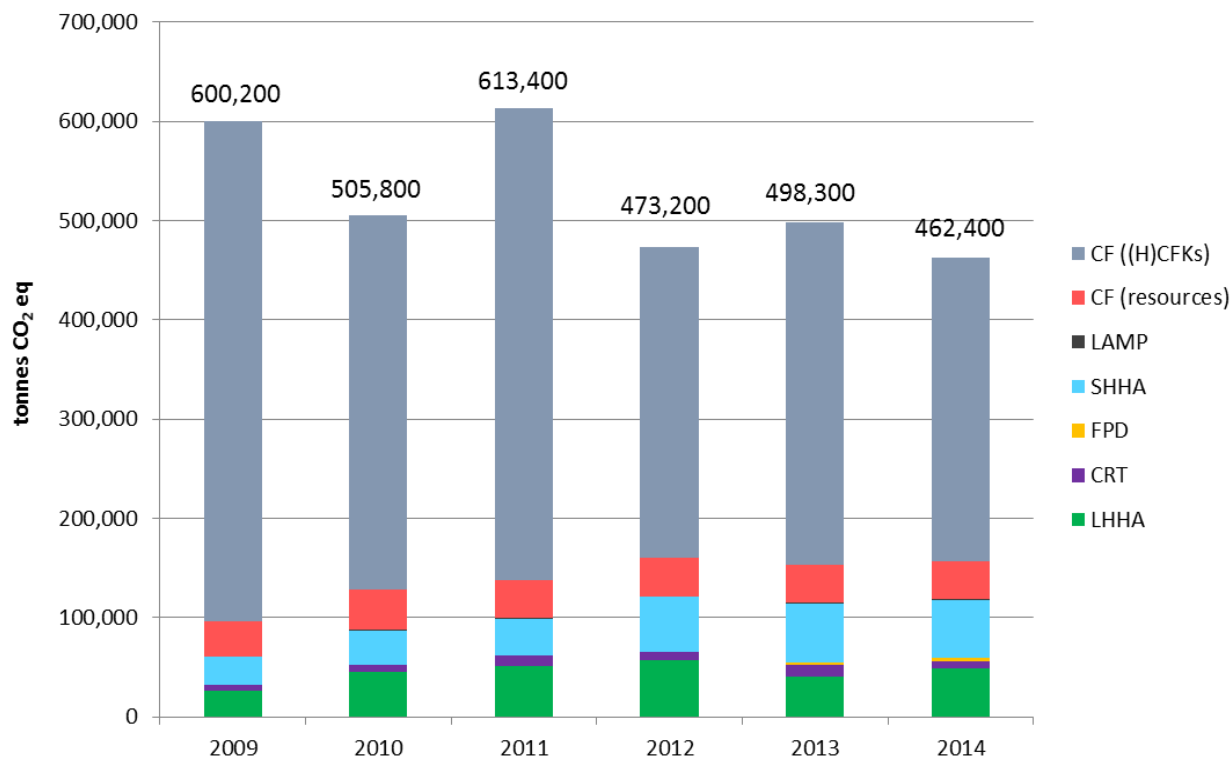
Eric Mieras, PRé Consultants

Circularity has been discussed for decades ...



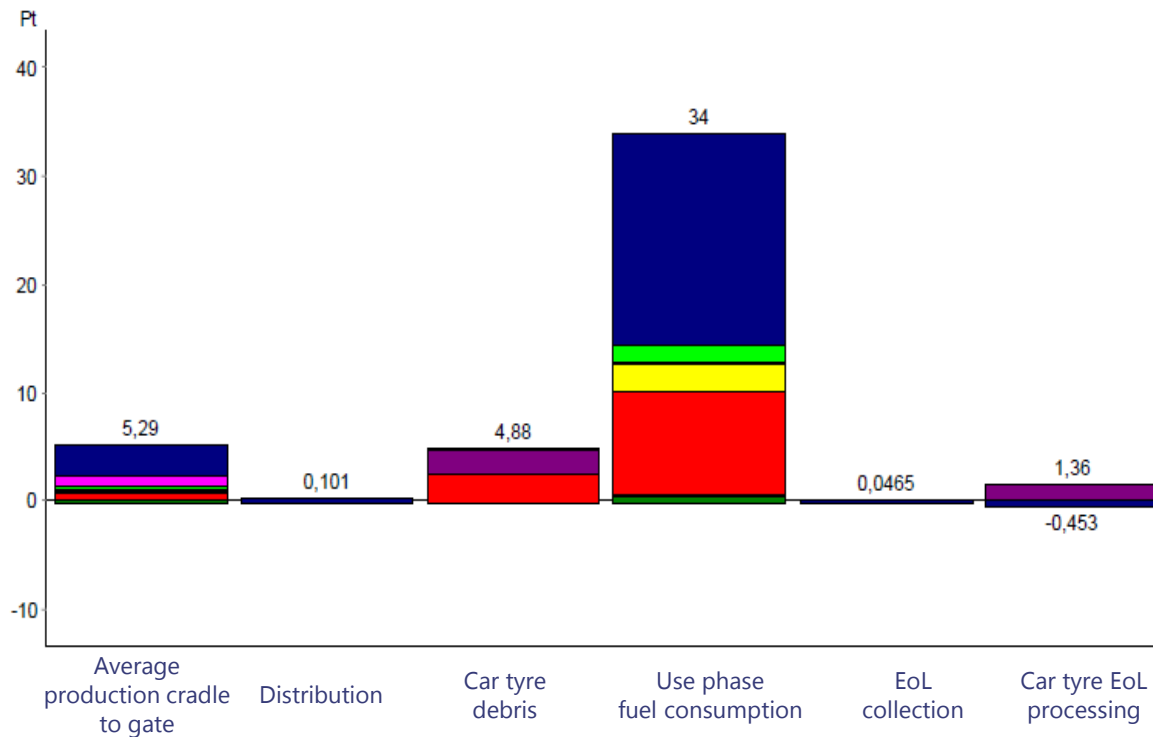
What can happen if your perspective is too narrow?

Recycling e-waste in the Netherlands



- **Positive** impact closing loops
- Avoidance of about **500,000 Tons CO₂ eq.** and **100,000 Tons material** per year
- Insight in processes allowing **improvements in efficiency**

Car Tires Recycling (*recycled content in new tires*)



- Closing loops **doesn't bring a positive impact**
- **Negative impact in rolling resistance, therefore fuel use**
- Positive impact for **energy recovery and other uses for the material recovered**

How can we accelerate Circular Economy innovations?

Combining strengths of Circular Economy and LCA



Inspiring Vision

Minimize environmental and social impacts

Mobilize People



Accountancy Approach

Show impacts from Life Cycle Perspective

Robust Science Based Method

How do we do that?

How to identify opportunities for your product?

Inside out

1. Use LCA to identify hotspots

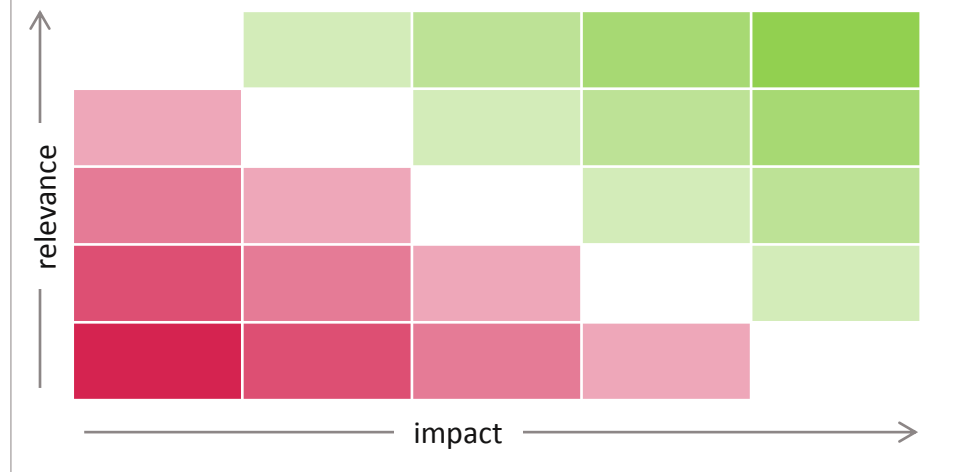
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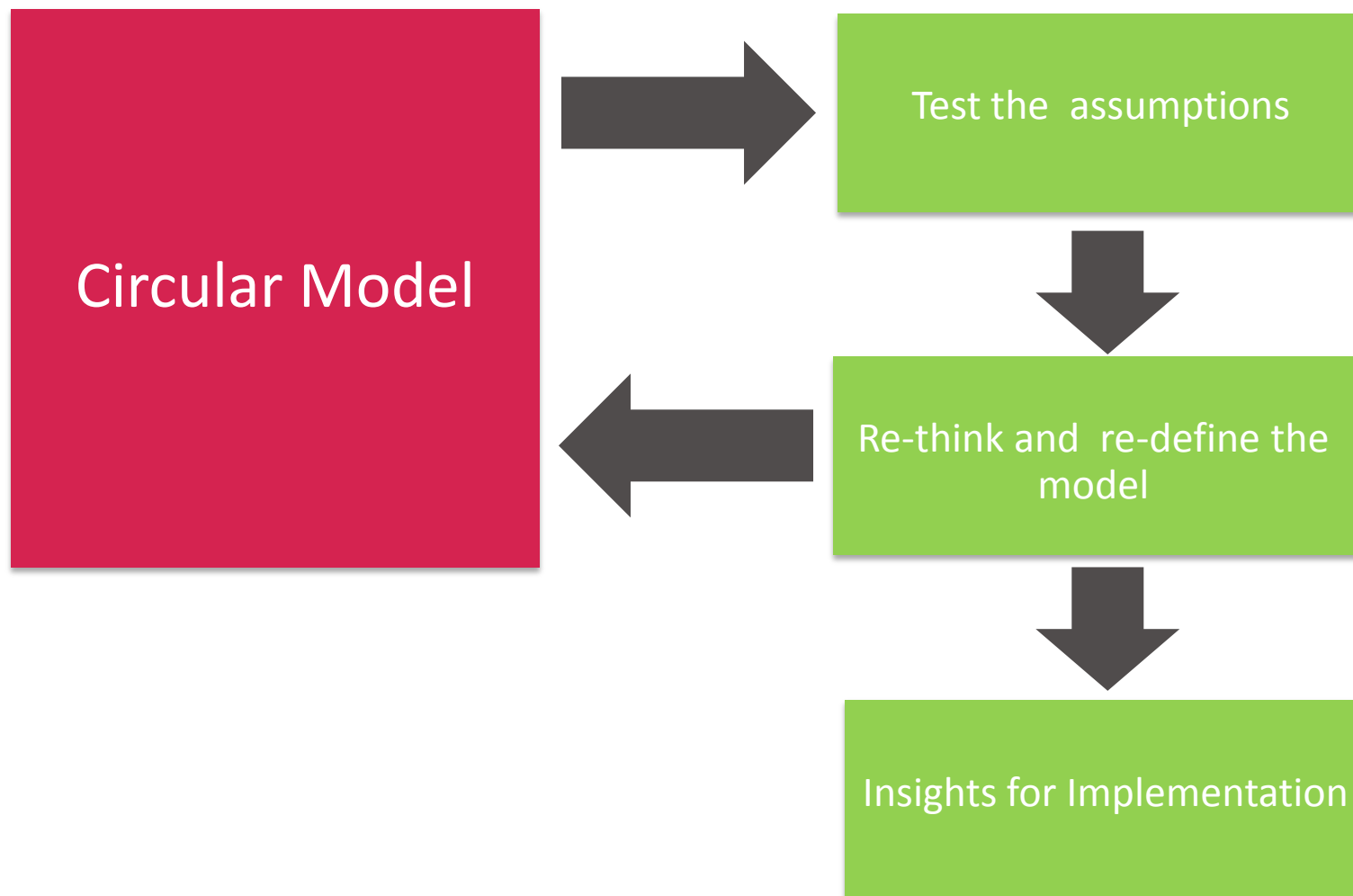
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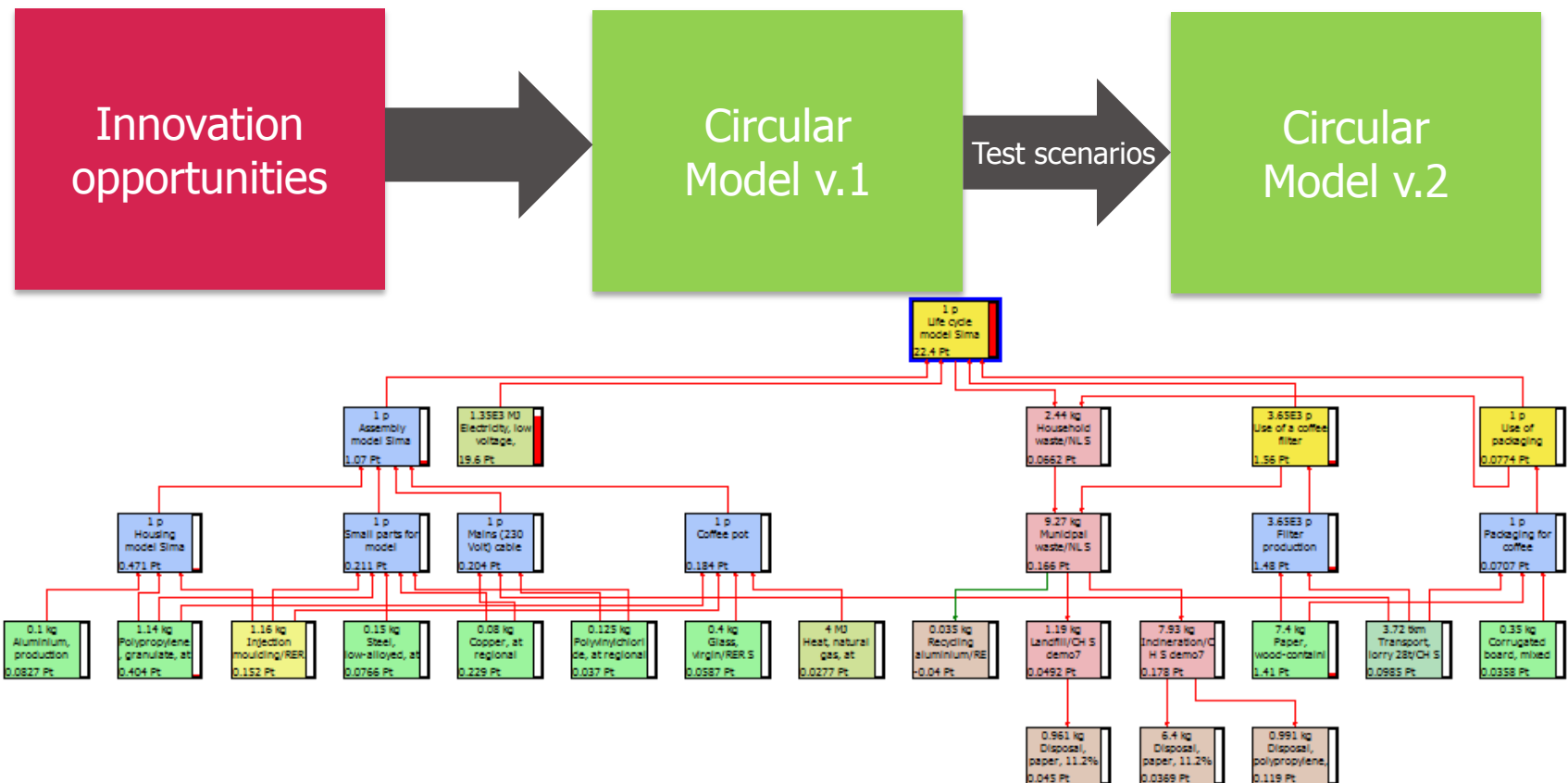


LCA use for Circular Economy



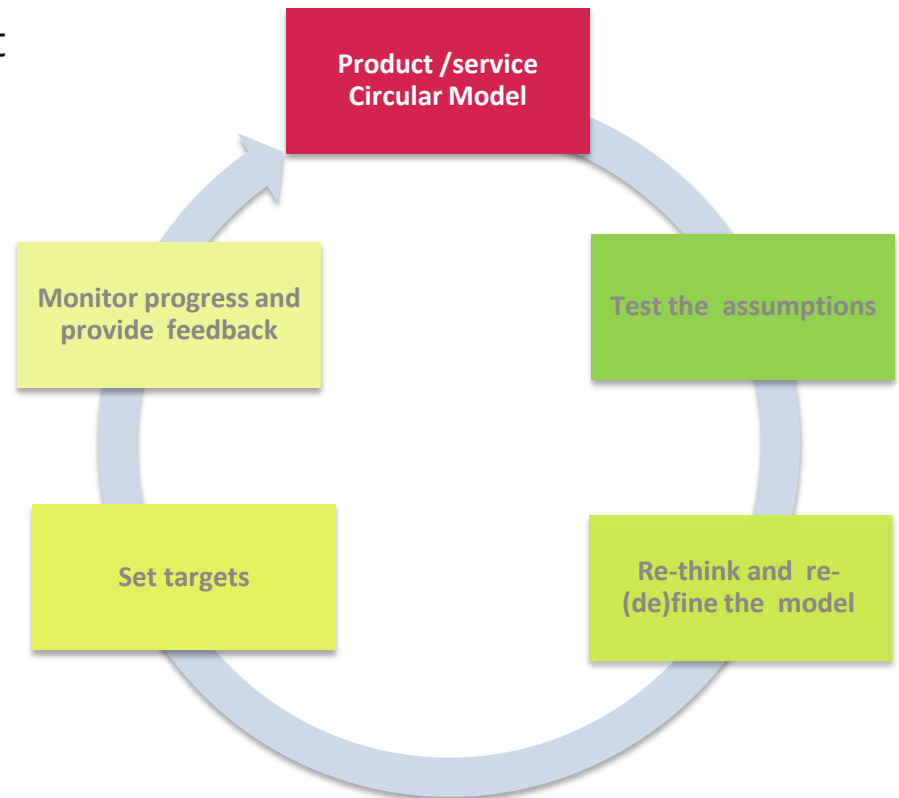
Rethink and re(de)fine the models

Explore alternative approaches



Route to circularity is a continuous process

- Starts with the Circular Business Model at a **product/operational** level
- **Test the assumptions** to know the impact
- Re-(de)fine the model
- Set **targets** and measure progress over time
- Monitor **progress**
- **Feed back** the Business Model





Live case work out

Dairy scores highly on the food waste ranking



Evidently, dairy is responding to customer demand

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March 10, 2015 6:46 am

Fonterra scrambles to reassure after milk powder threat

Jamie Smyth in Sydney

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New Zealand's dairy industry scrambled to reassure customers about the safety of its products after police revealed an anonymous blackmail threat to poison the world's biggest milk producer, Fonterra. The company has taken immediate and decisive steps to reassure customers following the receipt of threatening

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By Mark Astley+ | 01-May-2015
Last updated on 01-May-2015 at 17:06 GMT



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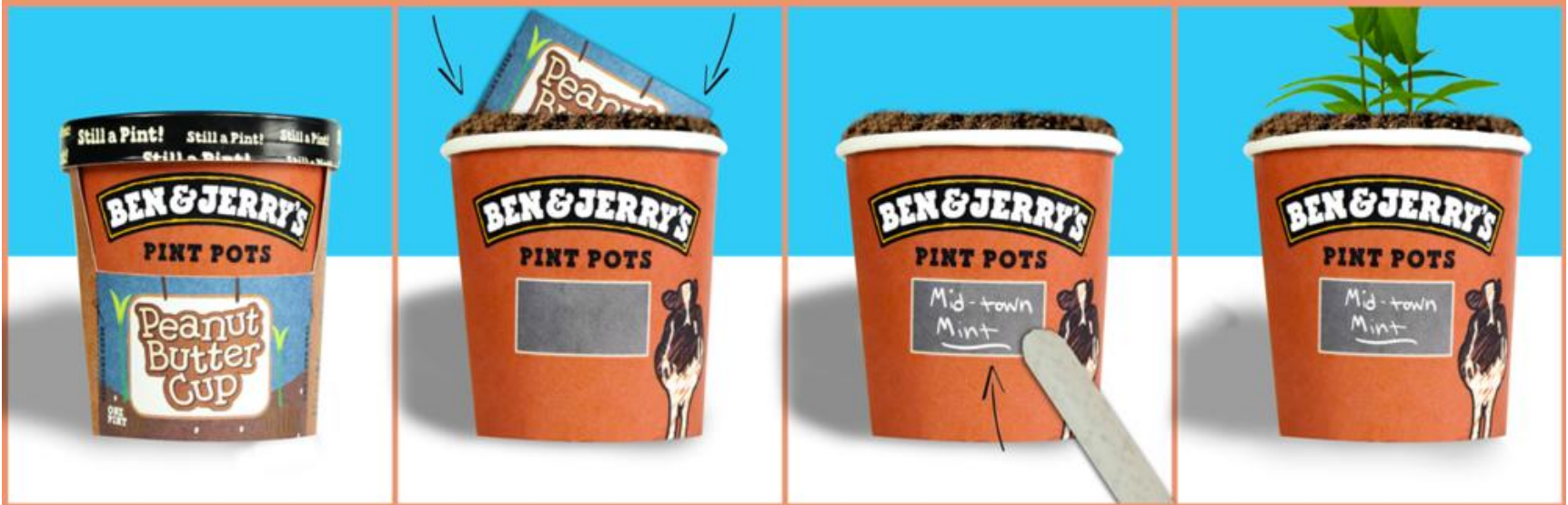
Dairy industry is making huge efforts to reduce its environmental impact

By Leek Post and Times | Posted: January 14, 2016



So what happens when Ben & Jerry's go circular...

THE 'PINT POT' CYCLE OF GOODNESS



Enjoy your Ben and Jerry's Ice Cream.

Tear off the seed paper sleeve and combine it with soil inside your pint.

Name your new pal & don't forget to give him water!

Watch your edible plant grow into a deliciously lean, green carbon killing machine.

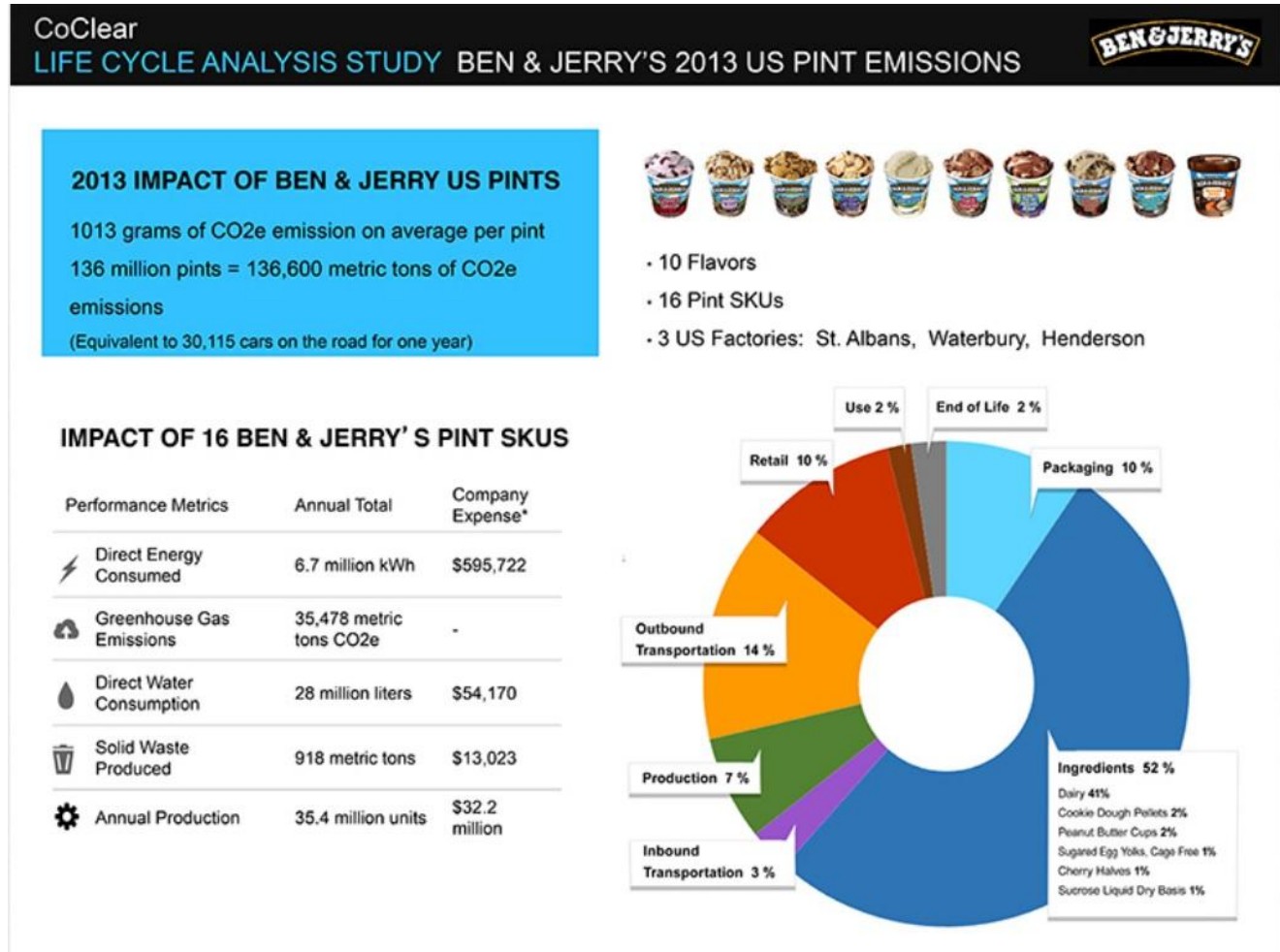


QUESTION:

Identify your top 3 innovation opportunities on the basis of hotspot- and materiality analysis

The Ben & Jerry's case work out (1/2) – data sheet

Inside out



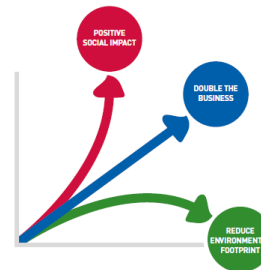
The Ben & Jerry's case work out (2/2) – data sheet

Outside in

The Dairy Sustainability Framework

- Local community involvement
- Human Capital Development
- Packaging
- Raw Material Sourcing
- Health & Nutrition
- Strategic Focus
- Innovation Management

OUR VISION IS TO DOUBLE THE SIZE OF THE BUSINESS, WHILST REDUCING OUR ENVIRONMENTAL FOOTPRINT AND INCREASING OUR POSITIVE SOCIAL IMPACT



UNILEVER SUSTAINABLE LIVING PLAN

In an uncertain and volatile world, we cannot achieve our vision to double our size unless we find new ways to operate that do not just take from society and the environment.

Launched in 2010, the Unilever Sustainable Living Plan is our blueprint for sustainable growth.

The Plan is helping to drive profitable growth, reduce costs and fuel innovation.

Our Plan sets out three big goals. Underpinning these goals are nine commitments supported by targets spanning our social, environmental and economic performance.

IMPROVING HEALTH AND WELL-BEING FOR MORE THAN 1 BILLION

By 2020 we will help more than a billion people take action to improve their health and well-being.

REDUCING ENVIRONMENTAL IMPACT BY 1/2

By 2020 our goal is to halve the environmental footprint of the making and use of our products as we grow our business.

ENHANCING LIVELIHOODS FOR MILLIONS

By 2020 we will enhance the livelihoods of millions of people as we grow our business.

Our plan is distinctive in three ways. It spans our entire portfolio of brands and all countries in which we sell our products.

Secondly, it has a social and economic dimension – our products make a difference to health and well-being and our business supports the livelihoods of many people.

Finally, when it comes to the environment, we work across the whole value chain – from the sourcing of raw materials to our factories and the way consumers use our products.



Unilever's Greenhouse Gas Footprint

Thank you for your attention

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