Welcome to the BLUEPRINT Circular Economy Roadshow

The session will begin soon

projectblueprint.eu

Fostering a reuse and repair culture

Tuesday 10 May, 14:00-15:20

Housekeeping

This session will be recorded

Use the chat/Q&A box for your questions

Please leave feedback

Fostering a reuse and repair culture

Chair's welcome

Cat Fletcher, Freegle

Fostering a reuse and repair culture

1. Becky Baines, The Ink Bin
2. Gabriella Asara, Essex County Council
3. Luisa Deragon, Reuse2Go
4. Dr Tung Dao, Nottingham Trent University

Fostering a reuse and repair culture

Speaker slides...

theinkbin

keeping the world colourful

EMBEDDING A REUSE AND REPAIR CULTURE WITHIN BUSINESSES

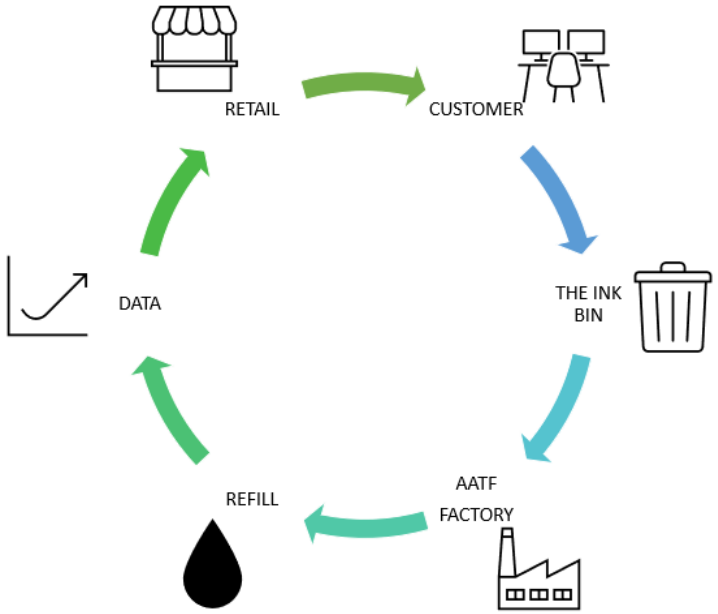
theinkbin

keeping the world colourful

CLOSED LOOP RECYCLING OF HOME-USE PRINTER CONSUMABLES

Background: Our Mission and Goals

- To use independent research and data to prove we are the **most environmentally ethical ink cartridge recycling company within the UK**



theinkbin

keeping the world colourful

Data and Accountability

KEY OBJECTIVES OF OUR CURRENT RESEARCH AND DEVELOPMENT PROJECTS:

How are our processes more carbon efficient than the rest of the marketplace?

What is the data for the virgin materials we are saving from extraction?

How can we further develop new processes to improve our environmental impacts?

How can we share these findings to inform others?

Innovate UK

Innovate UK
Knowledge Transfer Network

Materials Processing Institute

NZIN

kn-i knownow

University of East London

Buy the Correct Products

- Use less
- Buy higher quality
- Buy remanufactured

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TOP PRINTING TIPS...

- Do you really need to print this?
- Use PRINT PREVIEW before you print so you don't print any mistakes and have to reprint
- Reduce the size of your font
- Choose a less chunky / ink heavy font such as Arial
- Print in draft and grayscale wherever possible to save ink
- Print double sided to save paper
- Turn your printer off when it's not in use
- Buy refilled ink cartridges
- Do not buy cheap compatible ink cartridges- they often do not work and they cannot be refilled after use
- Drop your ink cartridges into an Ink Bin near you!

Use Less Energy

Reduce journeys for the products in

Reduce journeys for products out

Work as locally as possible

Rely less on importing and exporting

Rely less on foreign energy use

Localise heating and lighting within premises

Inventory of energy and electricity

Holistic reduce, reuse and repair culture

Sharing and inspiring as widely as possible

Repair and Reuse

- What's coming onto our premises?
- Can we alleviate the need for this?
- Can we find it second hand?
- Can we find it locally?
- Where can we gift or sell it if it is no longer needed?
- How can we share to inspire?

Own It, Be Proud of It!

- In the United Kingdom, approximately 5 billion corrugated boxes are used per year, amounting to around 83 per person.

Source- cardboardbalers.org

- It is estimated that around 2 billion pallets are in service right now and that up to 450 million pallets are produced every year from fresh wood.

Source- associated-pallets.co.uk

The Final Option: Recycle

- Where is our recycling going? Don't be afraid to ask questions!
- Be prepared to pay a little more.

- Share your wins with your customers and other businesses.
- Share your knowledge with others.

Challenges

TEAM ENGAGEMENT

EXTRA TIME INCURRED

EXTRA COSTS INCURRED

PREMISES LIMITATIONS

www.theinkbin.co.uk

Becky Baines

Circular Economy Advocate- Environmental Education Specialist- Ink Recycling

Interreg
EUROPEAN UNION
France (Channel Manche) England
European Regional Development Fund

BLUEPRINT
to a Circular Economy

EUROPEAN UNION

Essex Library of Things

Our place to reuse, borrow and share

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to a Circular Economy

In this session

- Why a Library of Things in Essex
- What makes it different
- How we promoted it
- What we have learnt

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Why a Library of Things in Essex

- Build on foundations towards reuse and the sharing economy
- Waste reduction and climate change
- Levelling up agenda
- Support existing libraries

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What makes it different

- Close relatives
- Collaboration with the Library Service
- Five locations and the mobile libraries
- Free service
- Brand new items
- Find Your Active stock

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How we promoted it

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What we have learnt - users

Age group different from library users

Women

Families

Comfortable income

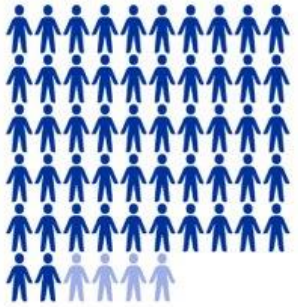
Motivations

1. To save money
2. To borrow infrequently used items
3. To help the environment

Preferred locations

1. Chelmsford
2. Witham
3. Clacton

Barrier for residents outside these areas



93% of users said they would continue to use the service

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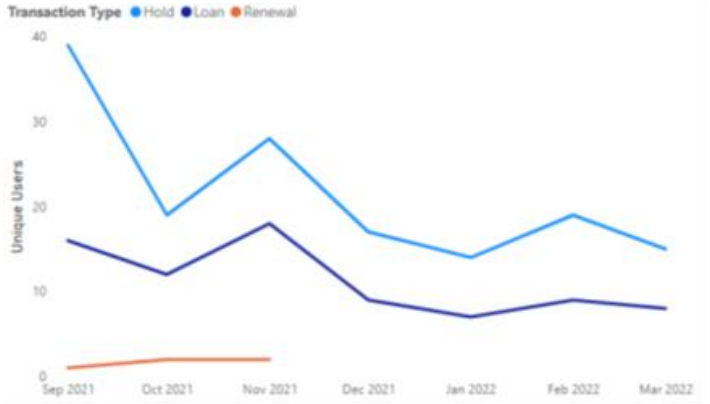
What we have learnt- stock

Most popular items



Limited stock

Process time

PAT testing

Repair service

0.5 t saved from landfill*

Features requiring attention

- Risk
- Heavy/bulky items
- Multiple parts
- Water

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What we have learnt – general residents

68% already positive attitude towards borrowing

Motivations:

1. Saves money
2. Saves landfill space
3. Reduces the need for raw materials
4. Reduces carbon footprint

24% respondents had heard of ELoT
<1% respondents had used it
54% would like to try the service
22% would recommend it

Locations
Covid
Fear of damaging items
Preference to own or use family network

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Conclusions

- Ambitious project
- Long way to go
- Foundations for reuse and sharing economy
- Essex residents (and beyond) are ready

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gabriella.asara@essex.gov.uk

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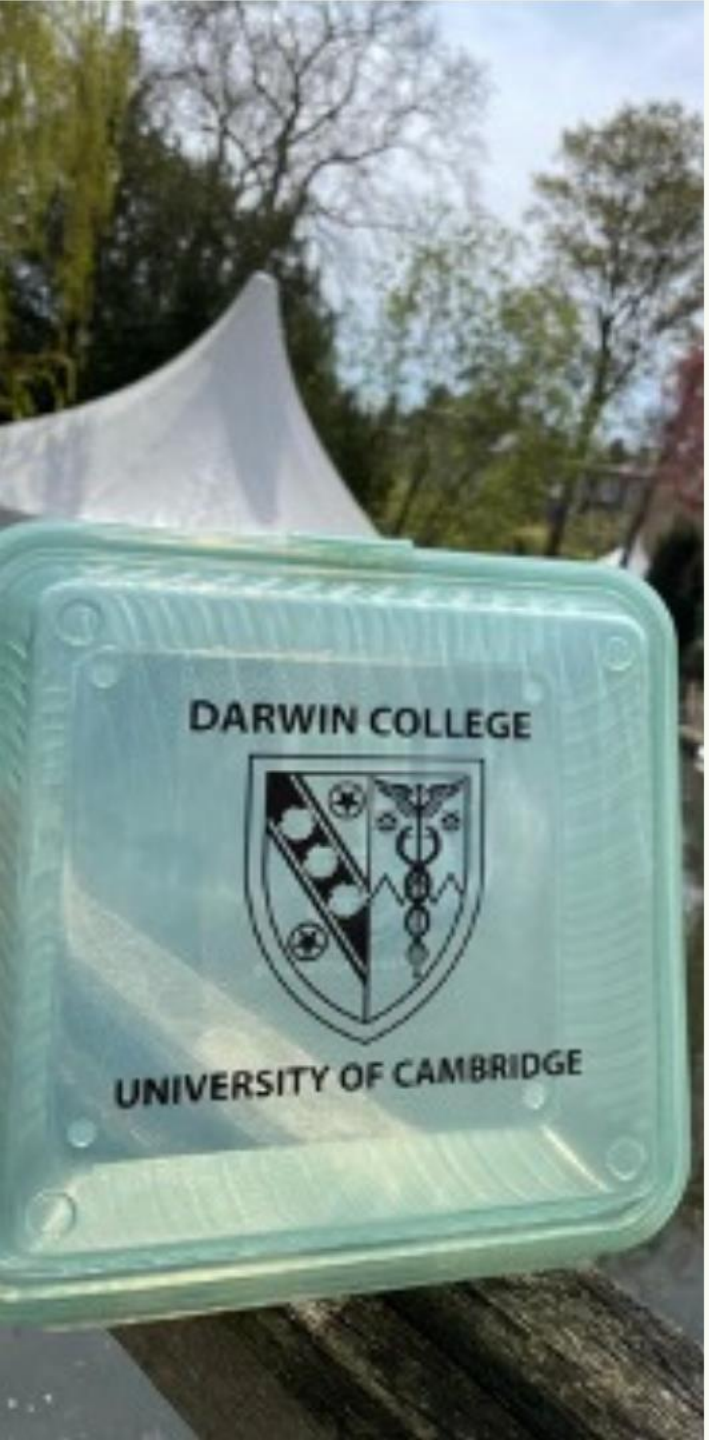


REUSE 2GO

A "return and reuse" logistics system for takeaway food and drink containers

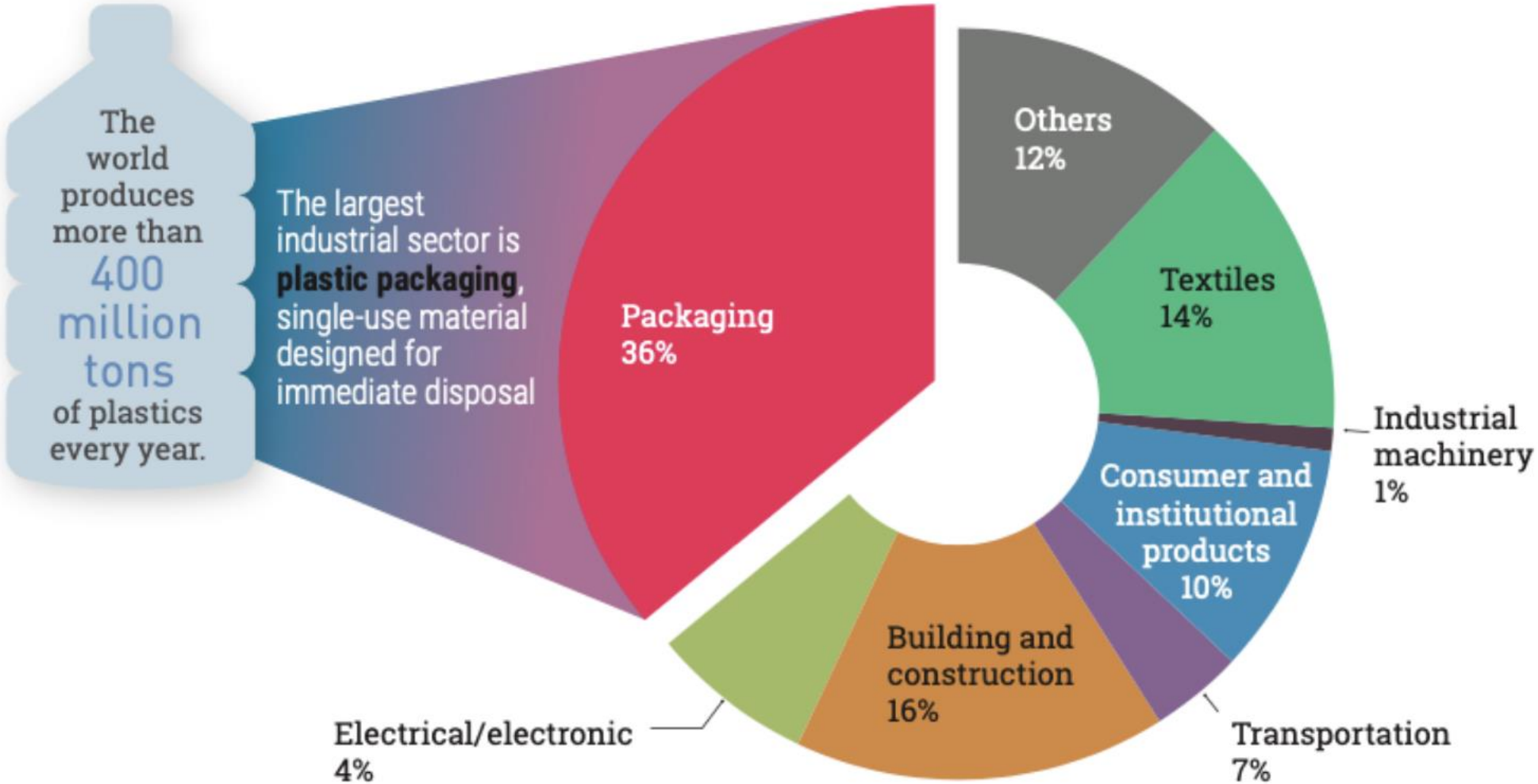
Outline

- Global plastic pollution crisis
  - Plastic production and waste management
  - Takeaway industry
  - The false promise of biodegradables and compostables
- A solution in circular economy
  - Reusable packaging systems
  - A reusable revolution
- REUSE2GO
  - Who we are
  - How it works

Plastics by the numbers

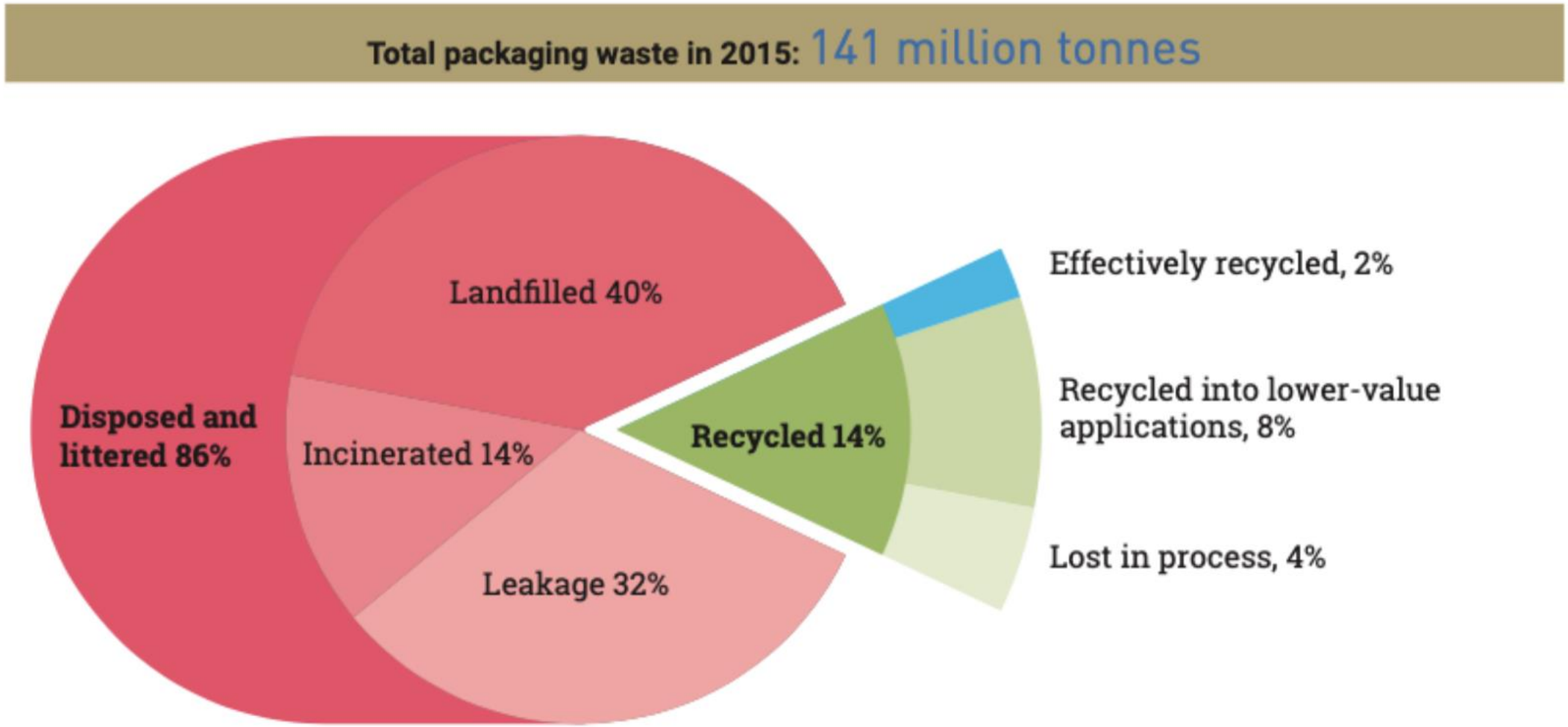
- Half of all plastics were manufactured in last 15 years
- Production is exponential
  - 1950: 2.3 million tons
  - 2015: 448 million tons
- 8 million tons escape into the oceans each year
- Plastics additives can extend the life of products
  - At least 400 years to break down

Global plastic production by sectors



Source: Adapted from Geyer, Jambeck, and Law (2017)

Global plastic packaging waste management

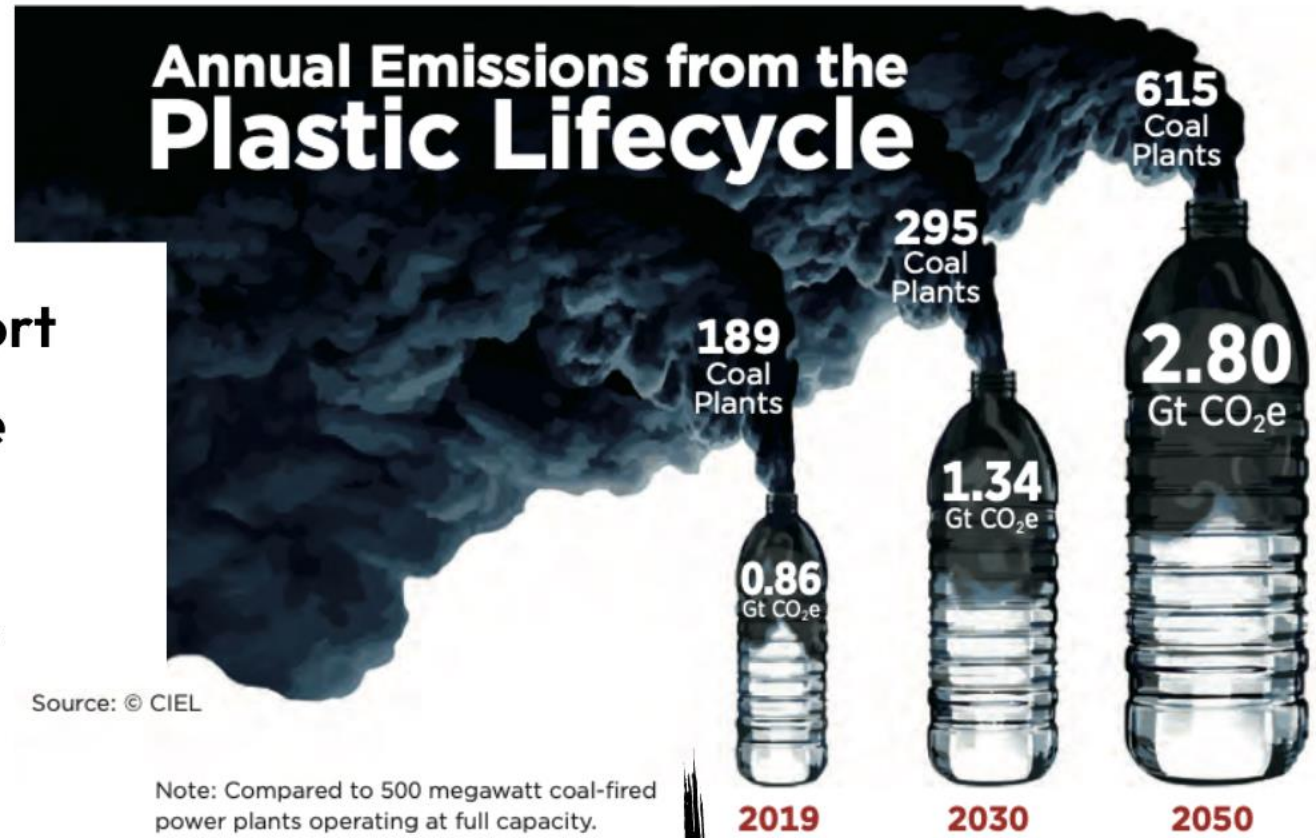


Source: Plastic & Climate: World Economic Forum report (2016)

Global emissions from plastic lifecycle

Plastic lifecycle:

1) Fossil fuel extraction and transport
2) Plastic refining and manufacture
3) Managing plastic waste, and
4) Its ongoing impact in our oceans, waterways, and landscape



29% of emissions come from packaging sector

Source: Plastic & Climate: The Hidden Costs of a Plastic Planet (2019)

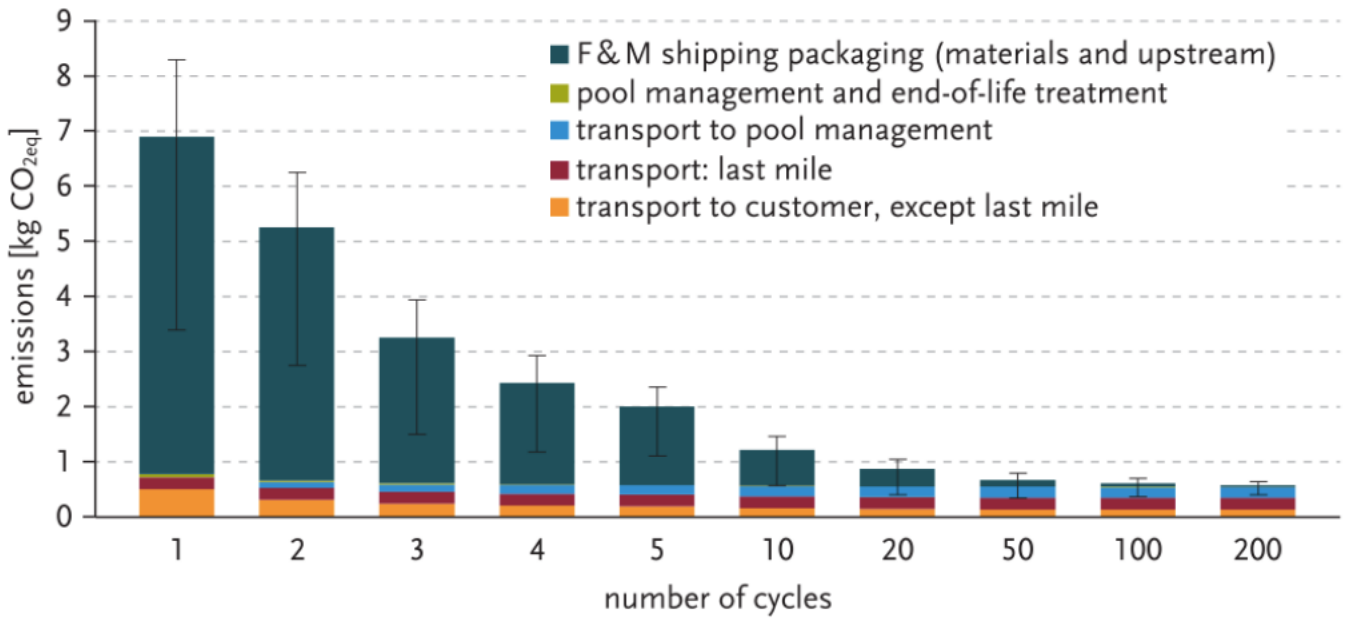
Takeaway industry

- Over 2B takeaway food containers used in the EU annually
  - GHG emissions = 55,000 cars
- Recycling or reusing could help reduce emissions
  - Commonly used containers are single-use and have low recyclability potential
- Research shows if reused enough times, reusable containers are the more sustainable option

Source: Environmental impacts of takeaway food containers (2019)

Reusable takeaway food containers

- Tupperware containers vs styrofoam
  - Lower CO2 footprint if reused 18+ times
- Reductions of emissions per cycle
  - Emissions from manufacturing are distributed over number of reuses



Source: Environmental impacts of takeaway food containers (2019); Single-use vs. reusable packaging in e-commerce: comparing carbon footprints and identifying break-even points (2020)

Biodegradable and compostables: not so green after all

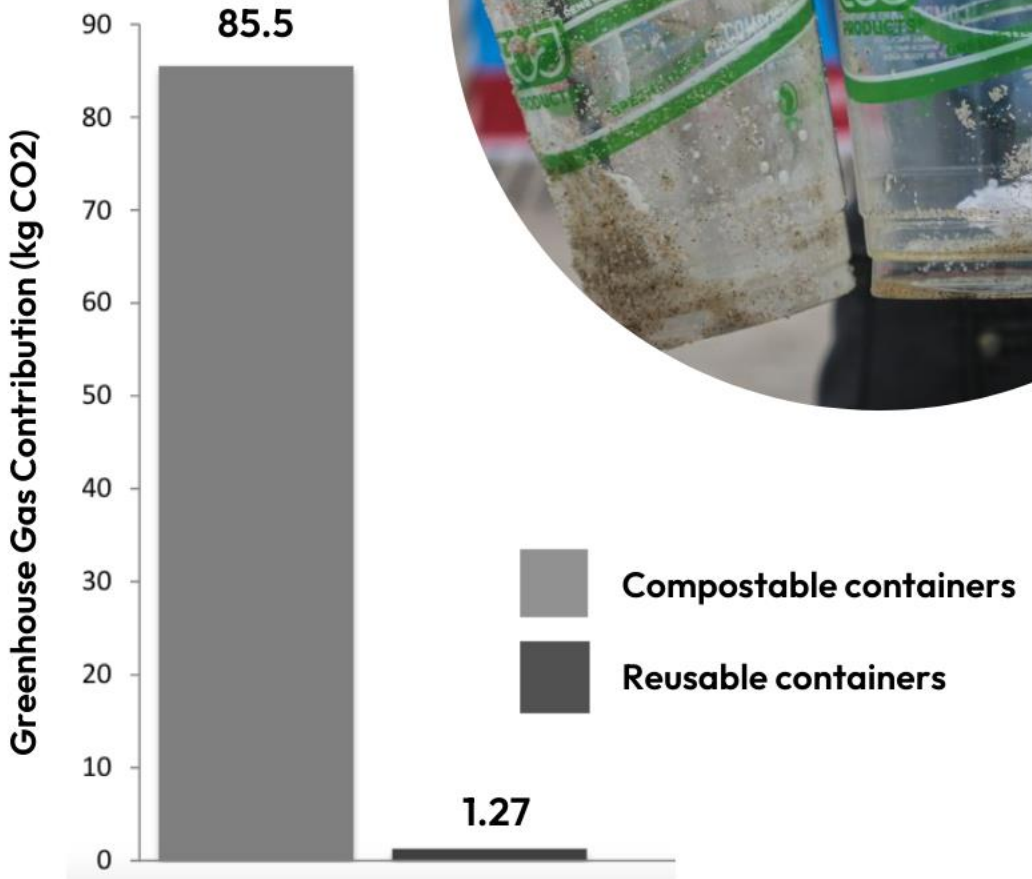
Environmental impacts:

1) Higher global warming impact

2) More land and resource exploitation

3) Need to be industrially composted

4) Greater ecological and human toxicity and aquatic impacts



GHG contribution of reusable and compostable takeaway containers

Source: Harnoto, M (2013); Oregon Department of Environmental Quality Report (2018)

A solution based on circular economy

"Reusable takeaway food packaging, if reused enough times, has a **better overall environmental performance** than single-use"

UN environment

Source: United Nations Environment Programme (2020). Single-use plastic take-away food packaging and its alternatives

REUSE 2GO

Reusable packaging systems...

Refill at home
users refill their reusable container at home (e.g. with refills delivered through a subscription service)

Return from home
packaging is picked up from home by a pick-up service (e.g. by a logistics company)

Refill on the go
users refill their reusable container away from home (e.g. at an in-store dispensing system)

Return on the go
users return the packaging at a store or drop-off point (e.g. in a deposit return machine or imailbox)

Source: Reuse: Rethinking Packaging report (2017)

… and their benefits

Cut costs

Build brand loyalty

Adapt to individual needs

Improve user experience

Optimise operations

Gather intelligence

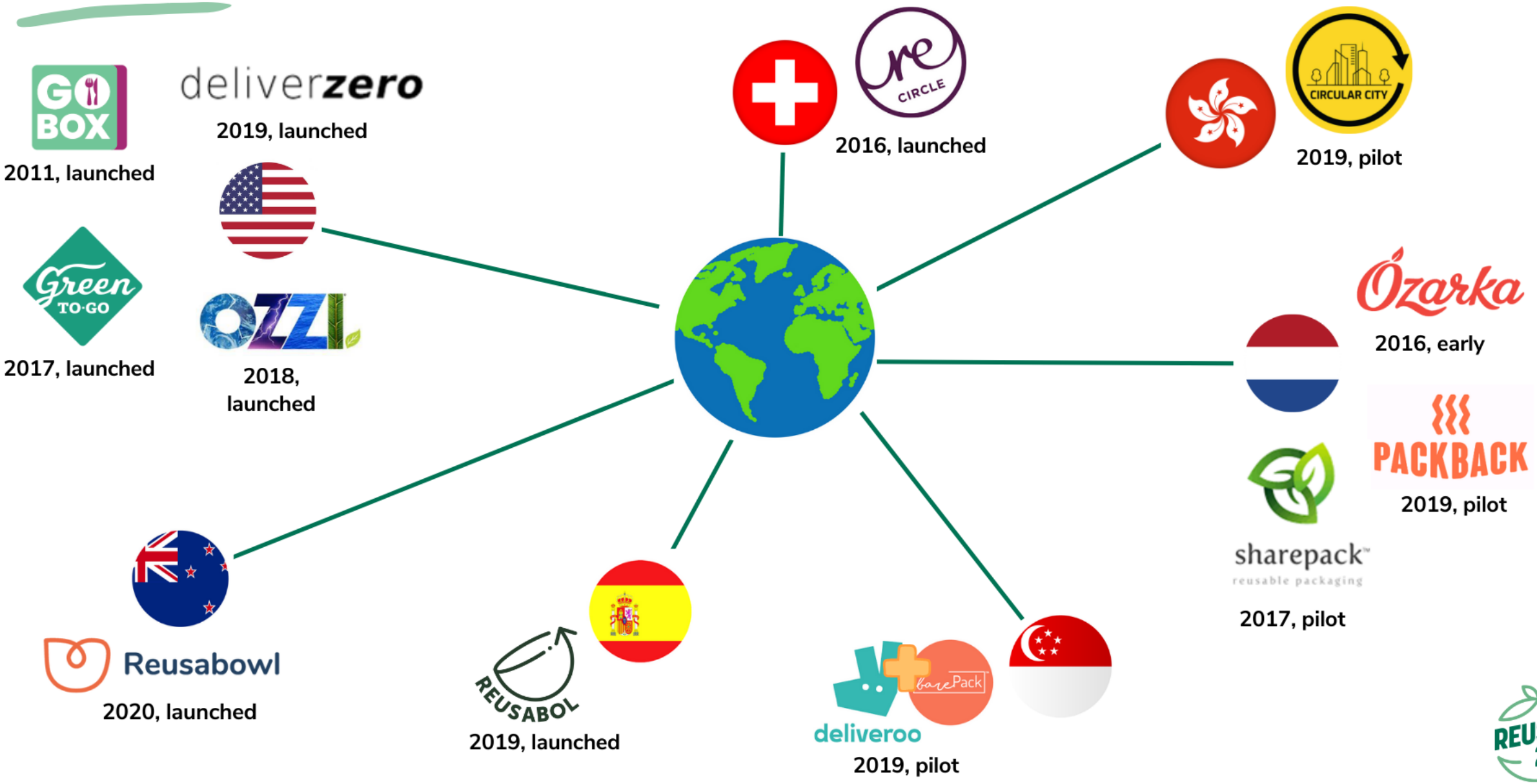
Source: Reuse: Rethinking Packaging report (2017)

Change is here

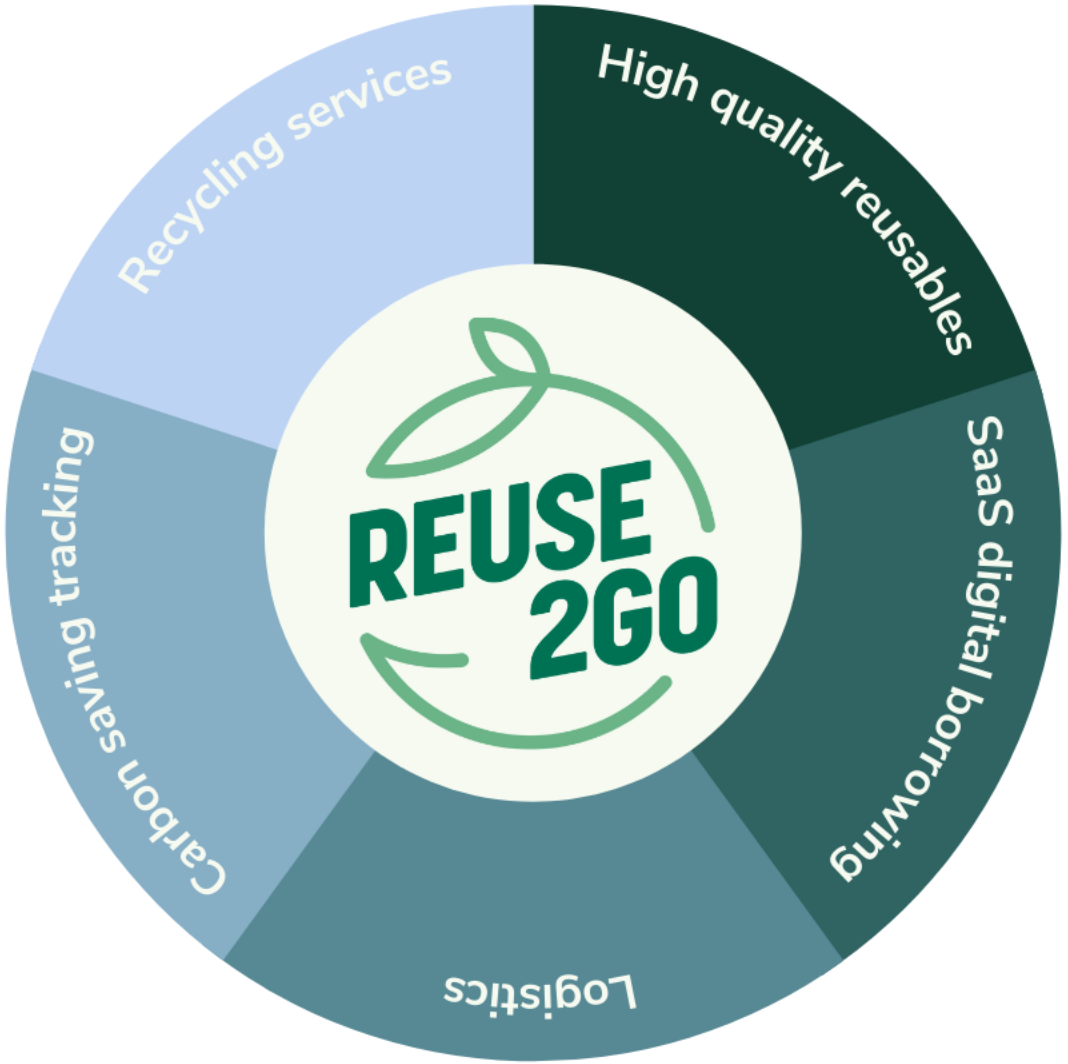
Large corporations shifting to reusables

REUSE 2GO

'Return on the go' around the world



REUSE2GO's digital zero-waste solution



RaaS (reusables as a service) model

A one-stop platform for any food and drink business

REUSE2GO's digital zero-waste solution

Consumers

Display QR code

Enjoy

Earn rewards

Return

Benefits

For consumers

- ✓ Collect points for rewards
- ✓ No washing!
- ✓ Make more sustainable choices with ease

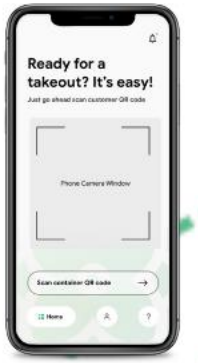
For businesses

- ✓ Reduce waste generation & pollution
- ✓ Track carbon saving
- ✓ Save money
- ✓ Boost public image

REUSE2GO's digital zero-waste solution

Businesses

Scan



Serve

REUSE2GO recycles into new containers

REUSE 2GO

1,000 x

Wash

Collect

Benefits

For consumers

- ✓ Collect points for rewards
- ✓ No washing!
- ✓ Make more sustainable choices with ease

For businesses

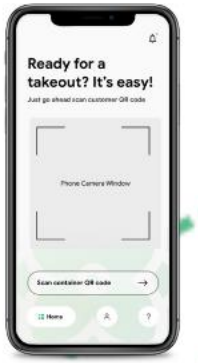
- ✓ Reduce waste generation & pollution
- ✓ Track carbon saving
- ✓ Save money
- ✓ Boost public image

REUSE 2GO

REUSE2GO's digital zero-waste solution

Businesses

Scan



Serve

REUSE2GO recycles into new containers

REUSE 2GO

1,000 x

Was

Receive washed containers

Collect

Benefits

For consumers

- ✓ Collect points for rewards
- ✓ No washing!
- ✓ Make more sustainable choices with ease

For businesses

- ✓ Reduce waste generation & pollution
- ✓ Track carbon saving
- ✓ Save money
- ✓ Boost public image

REUSE 2GO

REUSE2GO's reusables

35+ products currently

- 100% recyclable
- Made from BPA-free PP
- Highly durable (1,000 x)
- HACCP-certified
- Leak-resistant
- Dishwasher-safe
- Microwave-safe
- Stackable
- Customisable

...

Business model

Closed-loop model

Now

Revenue

Container sales

Customers

CAMBRIDGE UNIVERSITY PRESS & ASSESSMENT

Partners

Container supplier ✓

Short-mid-term

Revenue

Container sales, software subscription, return station sales; advertising; app monetisation

Customers

10+ Cambridge Colleges
2 Cambridge schools
2 NHS hospitals

Partners

Container supplier ✓
Return station supplier ✓
Software company ✓

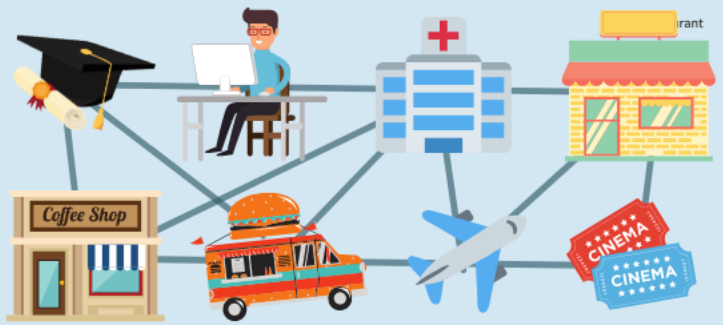
Interconnected city model

Long-term

Revenue

Platform subscription (software, logistical service, containers); advertising; app monetisation

Customers



Partners

Container supplier ✓
Recycling service
Return station supplier ✓
Washing facilities
Councils
Food delivery service
Logistics

Software dev./maintainence to be brought in-house

✓ Established/initiated partnership

Co-founding team

DR. LISA KENT
CEO

Strategy consulting

PhD Biochemistry

LUISA DERAGON
COO

Entrepreneurship & Sustainability

PhD Biological Sciences
Final year

Traction

Customers

4-5K end users

GIRTON COLLEGE CAMBRIDGE

Corpus Christi College University of Cambridge

CAMBRIDGE UNIVERSITY PRESS & ASSESSMENT

DARWIN COLLEGE CAMBRIDGE

10+ interested customers

Awards

greenimpact

Green Gown Awards 2021 FINALIST

Media

Greenlines

CAM

BBC RADIO Cambridgeshire

Cambridge Independent

Collaborators

CAMBRIDGE FOOD HUB

i-Teams Commercialising Creativity

cambridgebid loving cambridge...

uniware

CUECS

Support

CJBS Accelerate Cambridge

Ailia FUTURE BUSINESS CENTRE

NATIONAL NETWORK BIPC CAMBRIDGESHIRE AND PETERBOROUGH LIBRARIES

Santander Universities

UKRI Innovate UK EDGE

engage for change

Selected events

Pitching events

RAISE!

IfM

NATIONAL NETWORK BIPC CAMBRIDGESHIRE AND PETERBOROUGH LIBRARIES

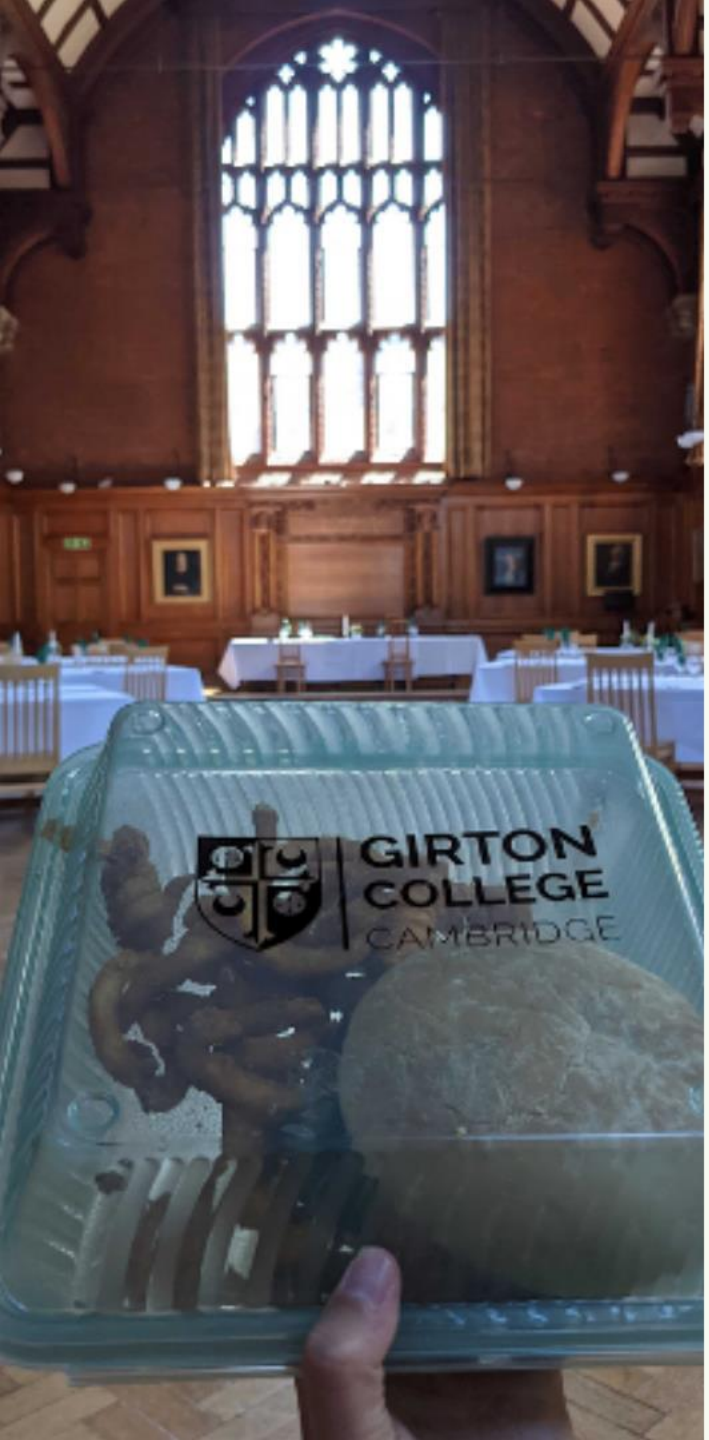
hub CCSF 2021

EAST OF ENGLAND PLASTICS COALITION

greenimpact

Selected speakers

REUSE 2GO



REUSE 2GO

www.reuse2go.co.uk

hello@reuse2go.co.uk

@reuse2go

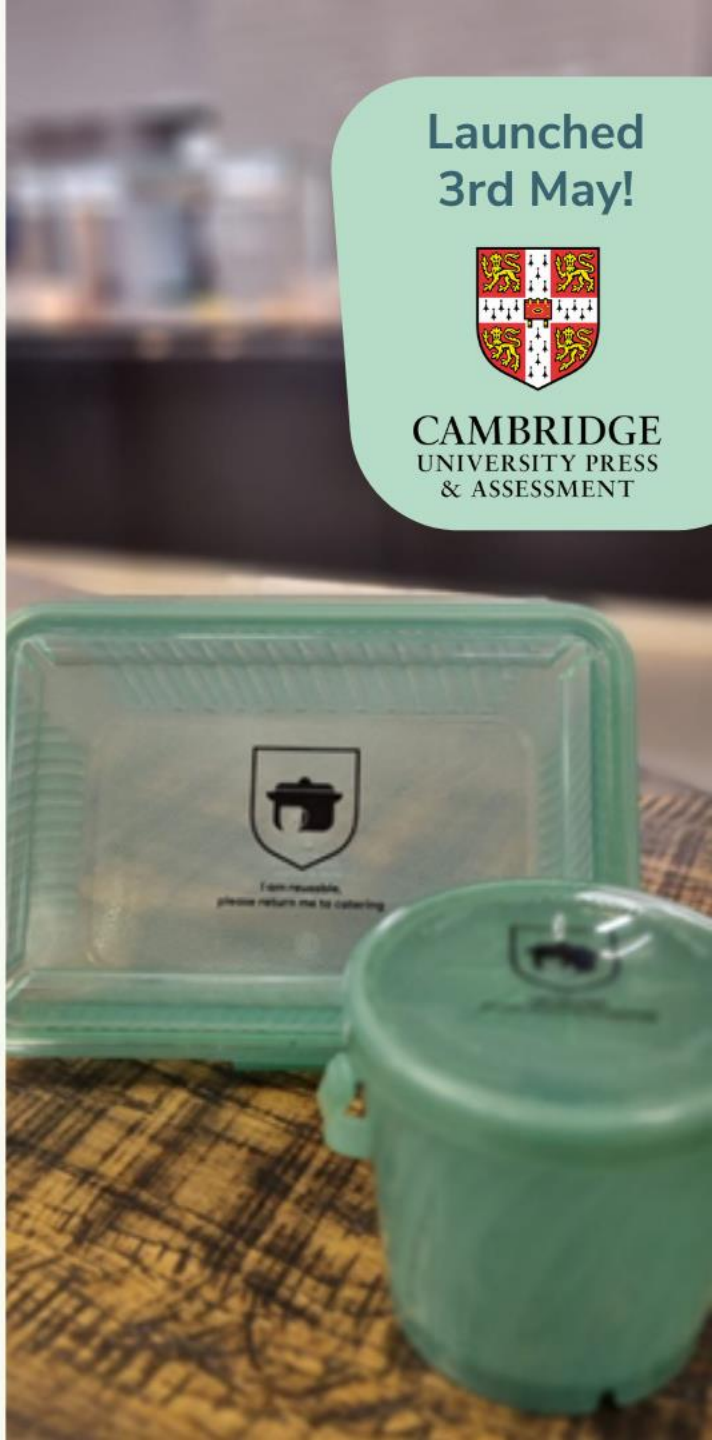
REUSE2GO

Special Award in Student Leadership Winner 2021

greenimpact

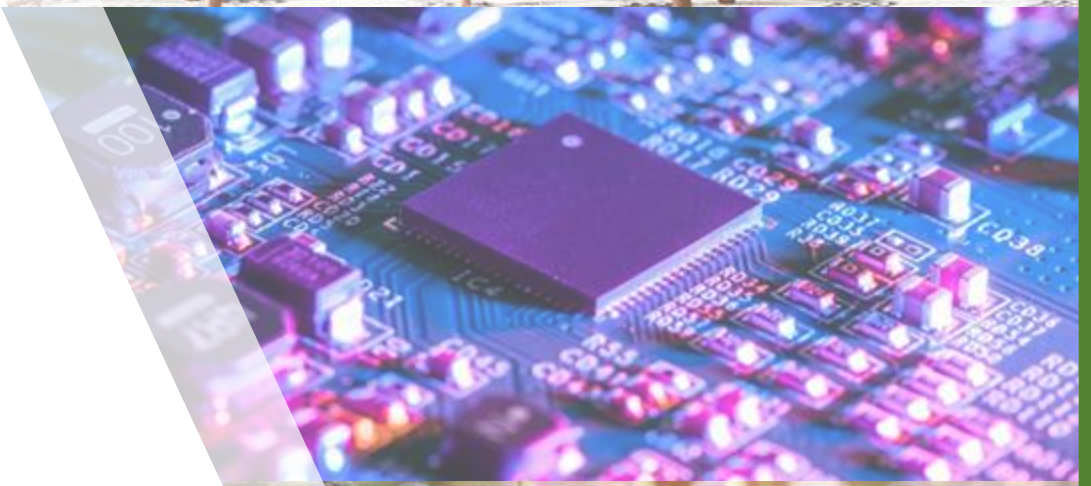
UK & Ireland Finalists (2 categories)

Green Gown Awards 2021



Launched 3rd May!

CAMBRIDGE UNIVERSITY PRESS & ASSESSMENT



BLUEPRINT CIRCULAR ECONOMY ROADSHOW

Enhancing product repairability through sustainable business innovation

Tung Dao

Sustainability Researcher

Sustainable Innovation Manager

NOTTINGHAM TRENT UNIVERSITY

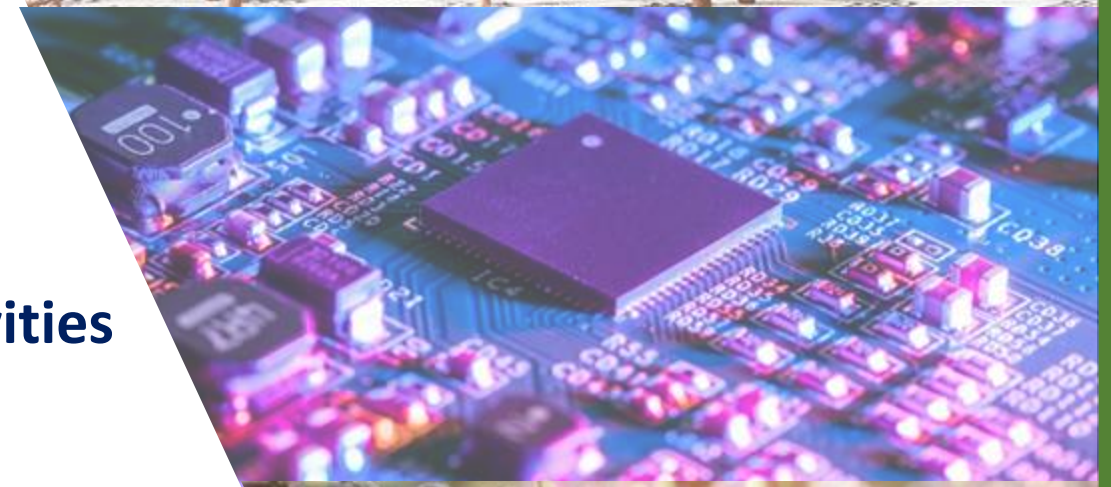
LASER 24

10/05/2022

http://www.linkedin.com/in/dao-tung

Outline

1. Knowledge gaps & research aims
2. Research method
3. Key findings
    - 3.1. Innovative strategies and operational activities
    - 3.2. Business management implications
    - 3.3. Future policies



1. Knowledge gaps & research aims

Knowledge gaps

Unclear commercial viability and consumer understanding of recommendations for business innovation

Contemporary contexts

The introduction of RIGHT TO REPAIR and A New Circular Economy Action Plan (The European Green Deal)

Research aims:

to identify what determines…

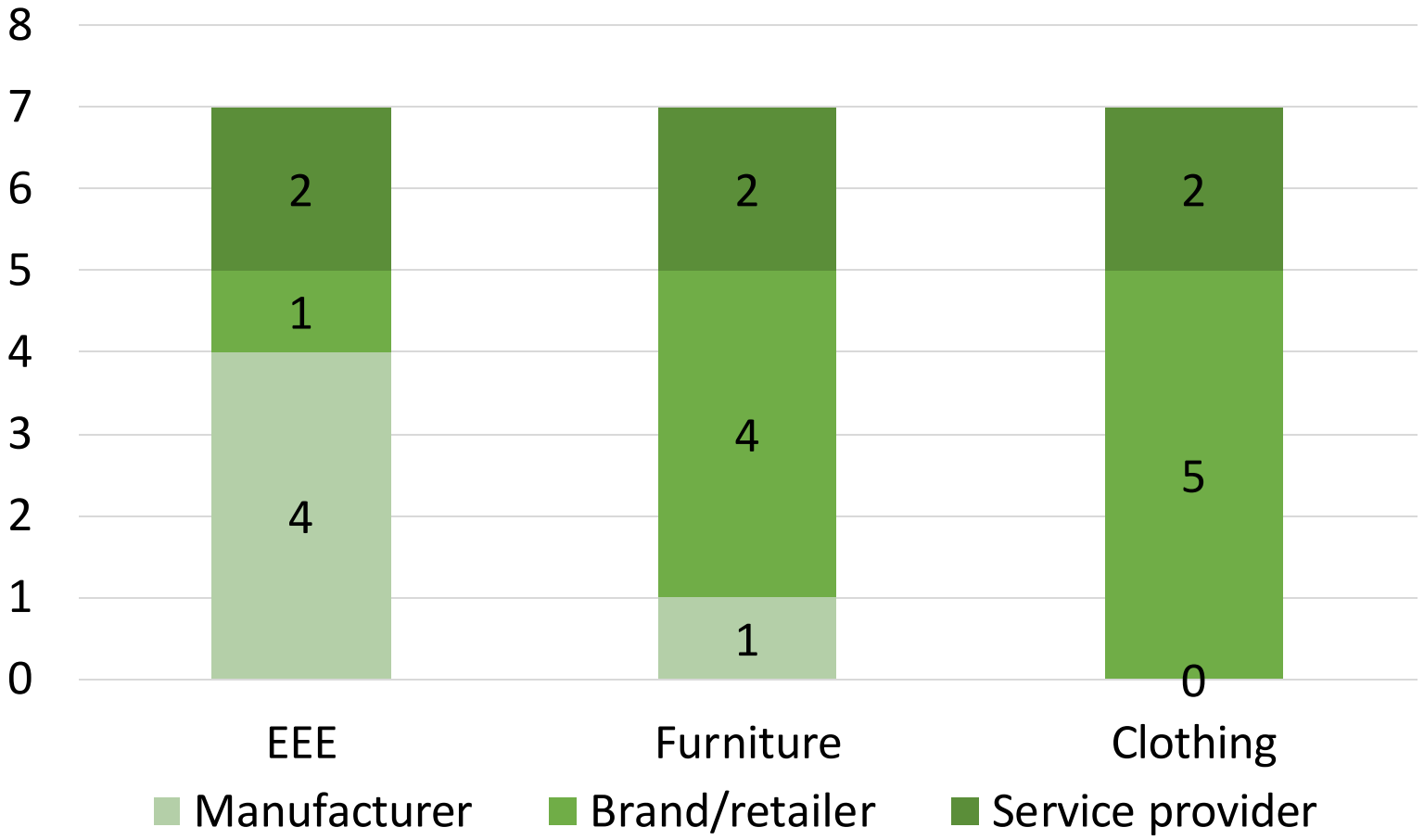
i. sustainable business activities

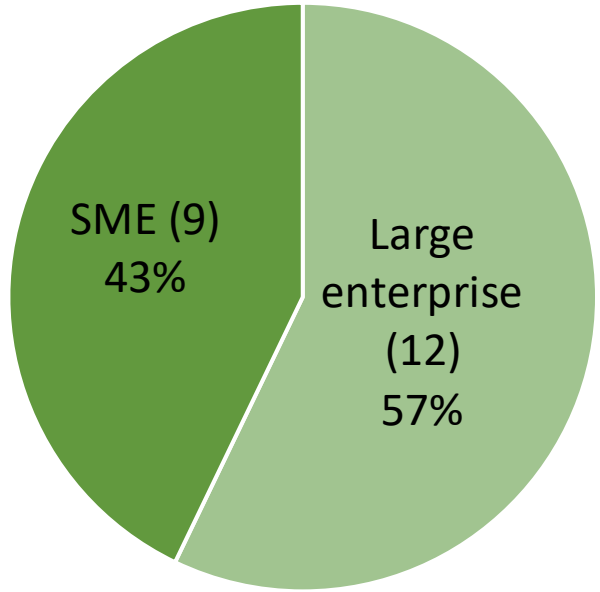
ii. government's initiatives

…to support DIY and commercial repair activity.

2. Research method

- Semi-structured interviews with 21 multinationals, national and local businesses
- Interviewees: CEOs, Customer Service Directors and Sustainability Managers.





3. Key findings

3.1. Enhancing product repairability through innovative strategies and operational activities

Group	Innovative strategies	Innovation in operational activities
Product feature & design strategies	1. Design for repair and codesign	• Standardisation, simplification, design for safe repair, disassembly and upgradability • Product teardowns • Common spare parts • Product scorecards
Repair information	2. Provision of diagnostic and repair manuals, and instructional support	• Communication methods and channels • Information packages: diagnostics, repair and maintenance instructions and recommendations for repair service providers
	3. Promotion of repair benefits and repairable products	• Customised messages • Repair tours/ workshops

3.1. Enhancing product repairability through innovative strategies and operational activities (cont.)

Group	Innovative strategies	Innovation in operational activities
Services during the use of products	4. Choosing repair over replacement within warranties	• Repair services offered at local shops or customers' homes • Spare parts posted to customers or collected at local dealers
	5. Integration of repair and reuse	• Collect broken items for repair, then resell • Harvest parts for future repair
	6. The exchange model and temporary replacement model	• Rental services
	7. Fixed-cost model and fixed lead-time return model	• Lead-time & quality management • ERP-CRM integration
	8. Localised repair service network	• Improved efficiency of spare parts supply, staff training and shared data
	9. A transparent spare parts and tools supply chain	• Just-in-time logistics • Multi-stakeholder collaboration

Repair service providers were also claimed to benefit from reselling repaired items or providing relative logistics solutions for manufacturers, brands and retailers (EE01, FN02, FN07)

3.2. Benefits of Business Innovation for product repairability

Reduced operational costs	Improved brand awareness, trust & loyalty	New revenues
• Repair operations • Production of standardised components	• Supportive aftersales services for word-of-mouth • Sustainable positioning/ development	• Aftersales services • Resales of repaired items • Reuse of unwanted parts

"Simplification of components… reduces costs of production whilst making the product easier to service."
Swedish multinational appliance manufacturer

"Repair service providers could benefit from reselling repaired items or providing relative logistics solutions for manufacturers, brands & retailers."
British brand of electrical appliances, American office furniture manufacturer & British multinational clothing, footwear and furniture retailer

3.3. Challenges to Business Innovation for product repairability

Trade-offs

- Product lifetime extension vs sales-driven business goals
- High cost of R&D innovation vs price sensitivity
- Limited resources but unclear ROI (e.g. repair facilities, staff training, spare parts logistics and CRM system)

Collabora-tion

- Lack of collaboration between business stakeholders

Demand

- Preference for fashion & newly updated technology products
- Lack of repair skills and experience
- Repair risks

"You must have a support service internally, which is another big cost."
British manufacturer of cleaning appliances

"We would need to invest in much more staff."
Swedish multinational fashion brand

3.2. Implications for business management

Collaboration between business stakeholders

- Tackle issues that extend beyond business boundaries (e.g. co-design of products & manuals, spare parts supply)
- Diversify services
- Offer consensus alignments

Value creating logic & contributions

Consumer-focused innovation

- Generate value to consumers and society
- Support purchase and repair decisions

Value creating logic
Consumer repair journey

ktn Innovation Canvas

1 Use the questions on the back of the canvas to find strengths and weaknesses in your innovation.

2 Mark yourself from 1 to 5 on how well you can answer the questions. Make a note of specific issues. [!]=Needs work [S]= Sorted

3 Use low scores to identify your top challenges; decide actions to solve them. Focus on what you need to do now and next.

Offer

Approach
- [ ] Description
- [ ] User gains
- [ ] Usp

Experience
- [ ] Discovery
- [ ] Transaction
- [ ] User experience

Impact
- [ ] Economic
- [ ] Social
- [ ] Environmental

IP
- [ ] New intellectual property
- [ ] Existing ip
- [ ] Licensing

Opportunity

Needs
- [ ] User needs
- [ ] Pain points
- [ ] Customer

Market
- [ ] Size & trends
- [ ] Barriers to entry
- [ ] Competition

Rules
- [ ] Freedom to operate
- [ ] Legislation
- [ ] Standards

Risk
- [ ] Identify
- [ ] Assess
- [ ] Mitigate

Top challenges:
Review the topics where you've given yourself a low score. List specific challenges which you need to work on to move your project forward. Focus on the two or three most important.

Action points:
Make a note of what you can do to address each challenge. Be realistic and give yourself deadlines for action. You may find it helpful to discuss options with a colleague or advisor.

LASER 24

University of Essex

Capability

Leadership
- [ ] Champions
- [ ] Management
- [ ] Strategy

Finance
- [ ] Cost
- [ ] Funding
- [ ] Cashflow

Operation
- [ ] Skills & people
- [ ] Equipment & materials
- [ ] Collaboration

R&D
- [ ] Ideas
- [ ] Design
- [ ] Technology

Organisation | Project | Created by | Date

INNOVATION CANVAS

Opportunity

Rules
- Freedom to operate
- Legislation
- Standards

Needs
- User needs
- Pain points
- Customer

Market
- Size & Trends
- Barriers to entry
- Competition

Risk
- Identify
- Assess
- Mitigate

Offer

IP
- New intellectual property
- Existing IP
- Licensing

Experience
- Discovery
- Transaction
- User experience

Impact
- Economic
- Social
- Environmental

Approach
- Description
- User Gains
- USP

Capability

Finance
- Cost
- Funding
- Cashflow

Leadership
- Champions
- Management
- Strategy

R&D
- Ideas
- Design
- Technology

Operations
- Skills & People
- Equipment & Materials
- Collaboration

3.3. Evidence and implications for future policies

Two key future policies supporting business innovation for product repairability

RECONSIDERATION OF TECHNICAL STANDARDS

FINANCIAL INCENTIVES

aligned with the Right to Repair and the EU's Circular Economy Action Plan

Encourage

- consumers' preference for extending product lifetimes through repair
- collaboration and contributions to overcome business constraints

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THANK YOU

Tung Dao

Sustainability Researcher

Sustainable Innovation Manager

NOTTINGHAM TRENT UNIVERSITY

LASER 24

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http://www.linkedin.com/in/dao-tung

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