

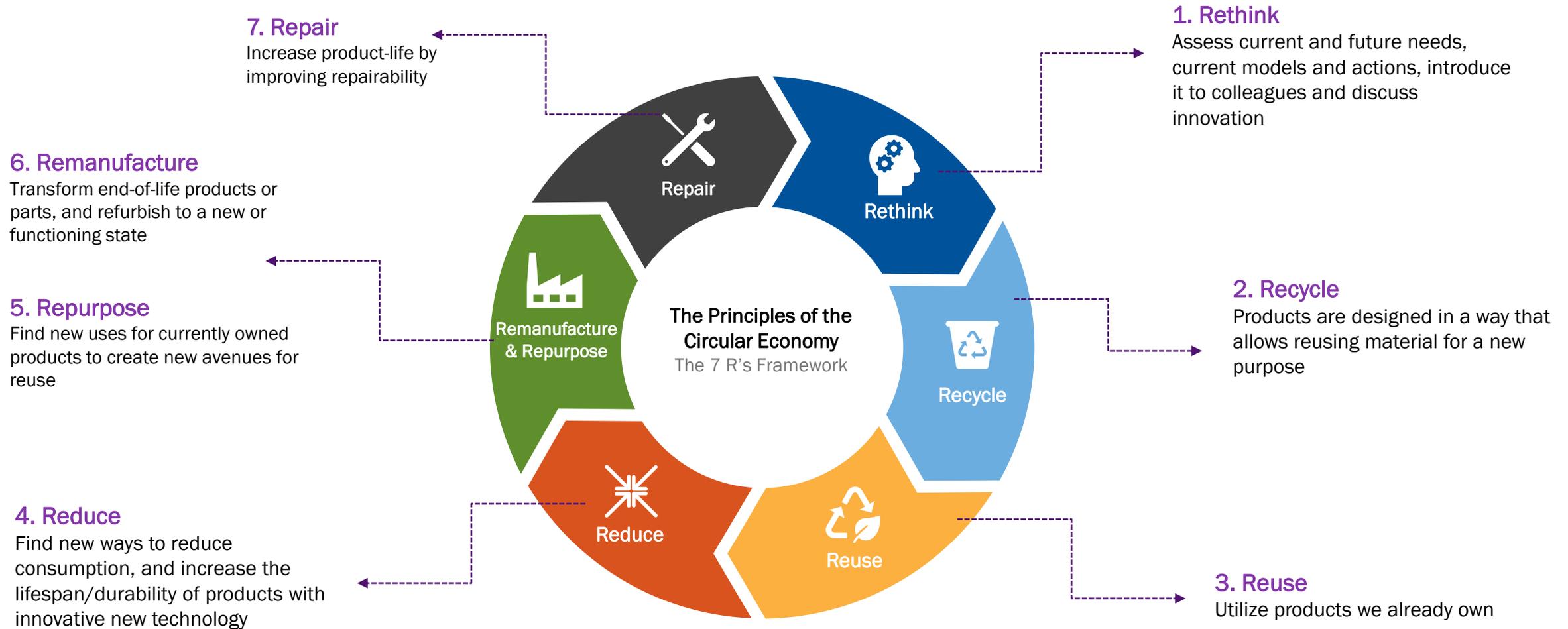
The Black Box Institute

## THE CIRCULAR ECONOMY

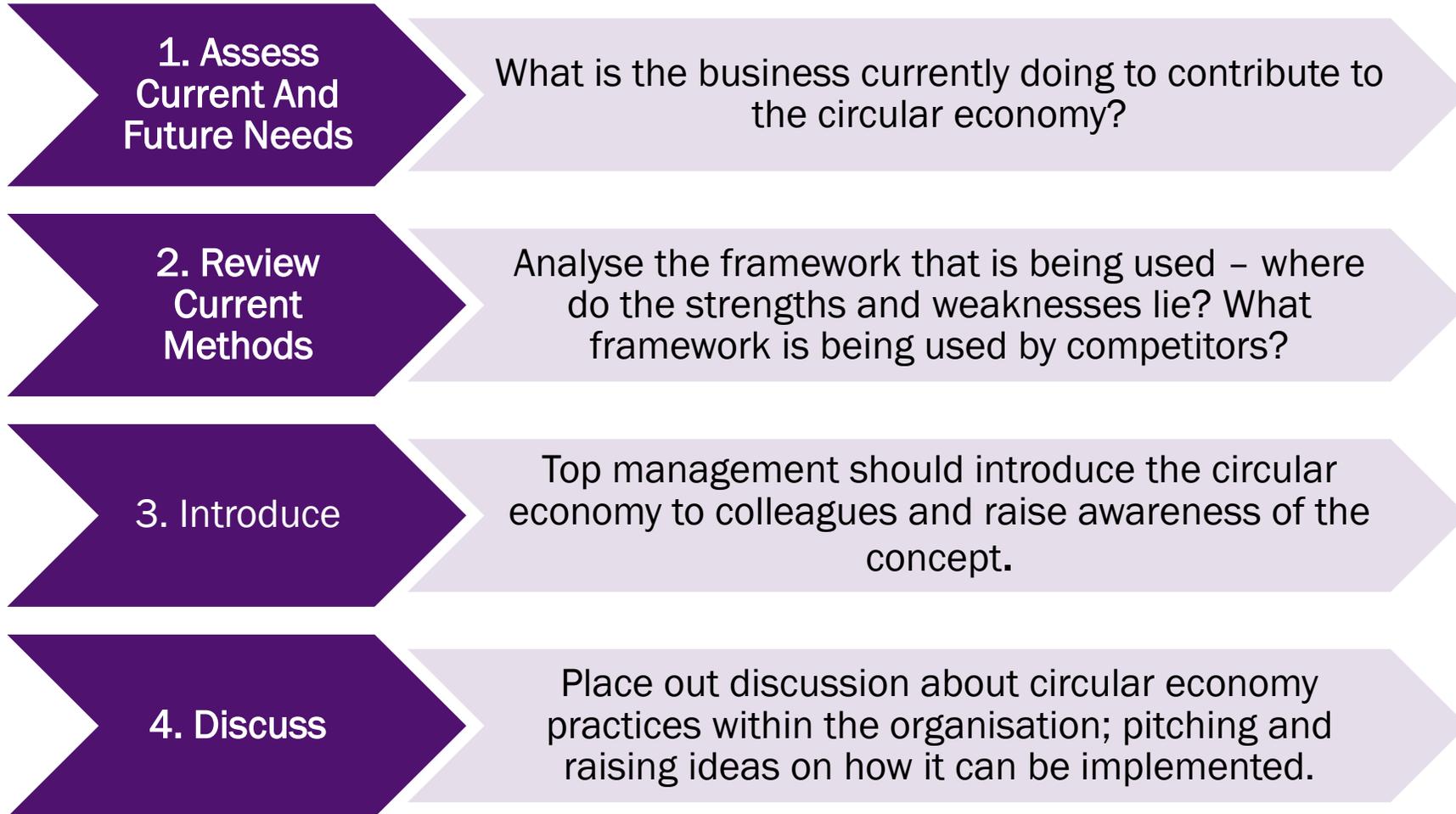
### Part 2: Frameworks for Implementation

October 12, 2021

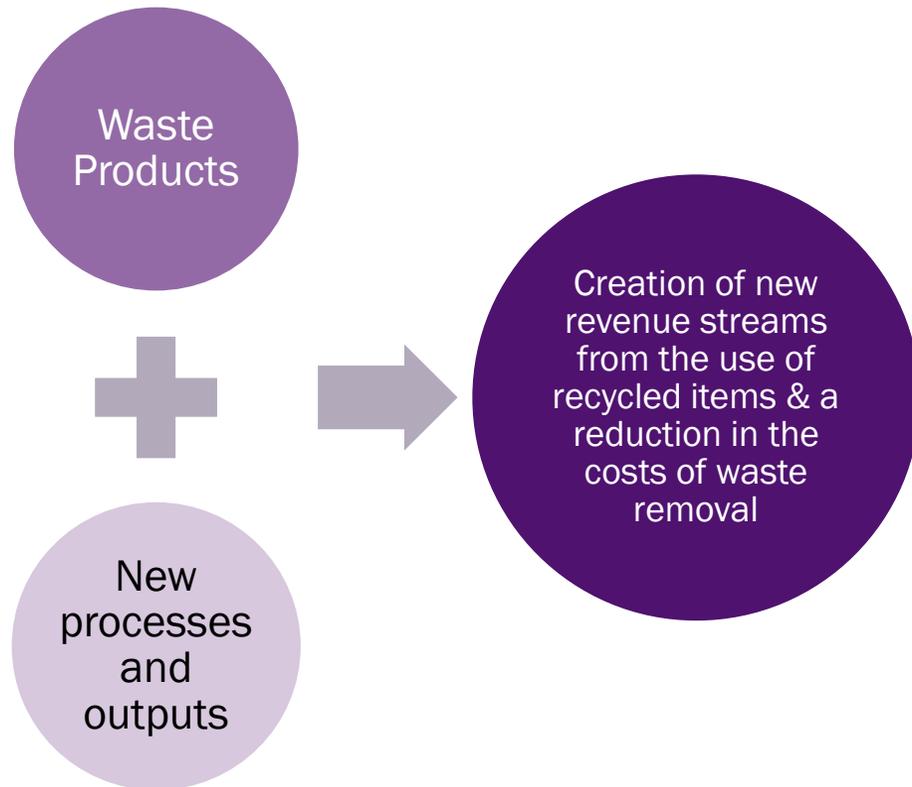
Authors: Mei Kwan Ho  
Yuvi Aravindan  
Khushnoor Dhot  
Mykhaylo Rozhkov



Key Steps To Rethinking



### Recycle



### Case Study: Royal FloraHolland Auctions



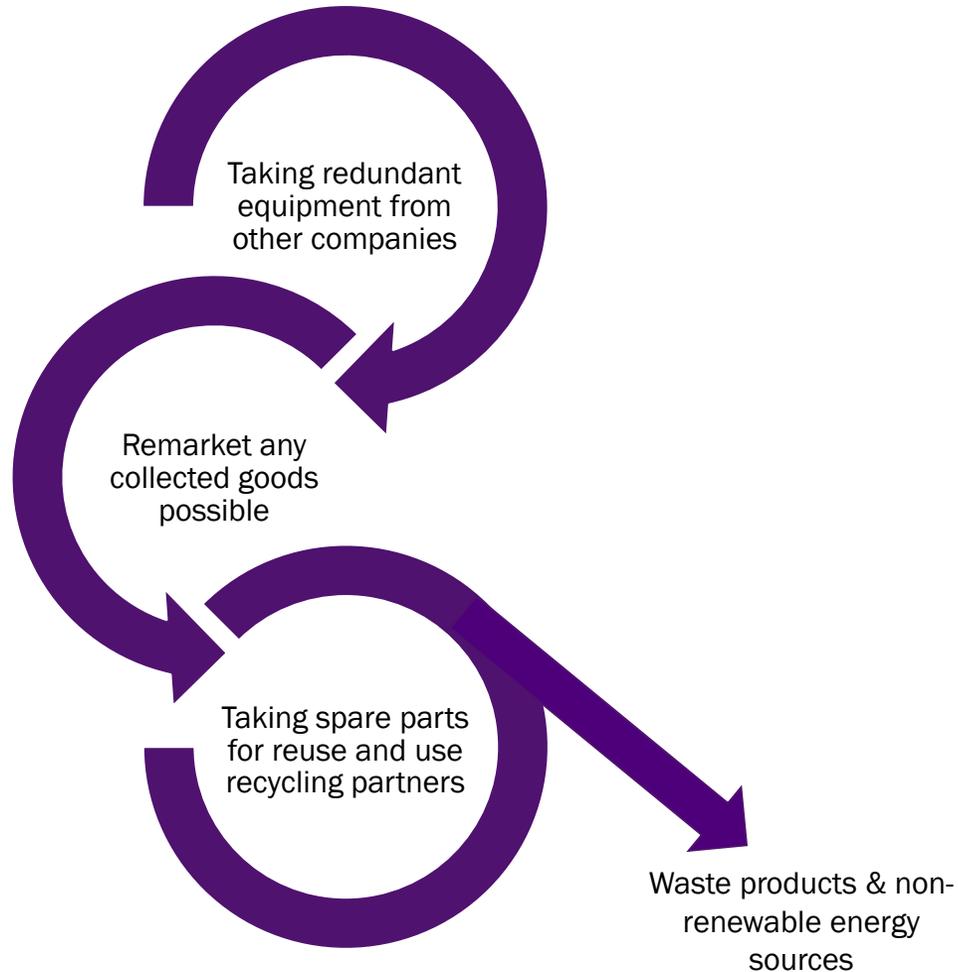
The auction trades 12 billion flowers and plants, generating large waste streams (cardboard, plastic, foils and green waste). Initially, the waste was collected and incinerated in an unorganized manner. Now the unsold flowers are processed separately so that dyes can be extracted from them. Resulting in a cost item becoming a revenue model.

- With natural resources becoming scarcer and the demand for raw materials increasing, businesses are finding buyers who can convert their waste into new revenue streams
- The resale or buyback of products is encouraged, supporting the continuation of the functionality and increasing the usable life span

#### Result:

- Moving to a minimum of 20% recyclable packaging

## Reuse



## Case Study: ReTek

re-tek



20,000 ICT items



26,000ft Facility



Powered by 80% renewables

- Re-Tek (A B2B Company) collects redundant IT equipment for medium to large organizations in the UK and Europe. They can remarket 80% of collected goods, enabling them to share revenue with the equipment's previous owners.
- This revenue allows them to harvest spare parts and work with recycling partners to address the 20% remaining obsolete goods.

### Result:

- 99% of electronic systems they collect are diverted from landfill

### Reduce

#### Cost Optimisation

Core process justified on a cost savings basis, compliant with local restrictions

#### Valuation Study

Proposal including overall cost estimates and success criteria

#### Continuing Cost Analysis

Reduction in water and any costs/benefits therein are calculated to justify the project

#### Equipment For Water Reuse After Reduction

Assess water reuse potential- the cost of reuse equipment was **vastly discounted due to reduced volume**

### Case Study:



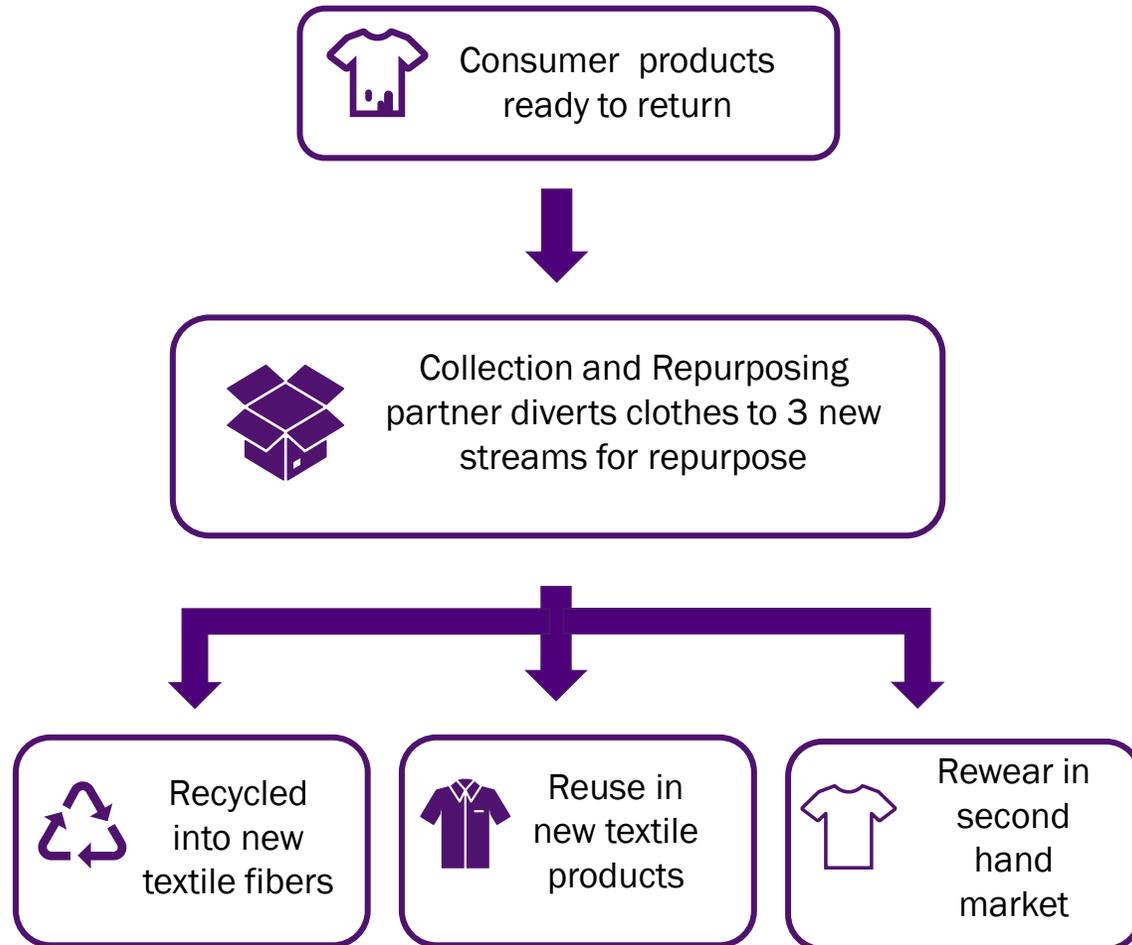
- Procter & Gamble aimed to increase sustainability through reduction of energy and water consumption through a new production site in Taicang, close to Shanghai, China.
- Inspired by a Chinese water garden, It was essential for the site to not only comply with the strict legal requirements, but to also ensure the longevity of operations in a water-stressed area. The facility operates within stringent permit requirements and exceeds P&G sustainability and water reduction targets

#### Result:

Major cost savings, mainly from reduction on:

- Cost of purified water;
- Cost of heating water and purchasing steam;
- Cost of C&S water treatment;
- Cost of concentrated water disposal (via trucks).

### Repurpose



### Case Study: H&M

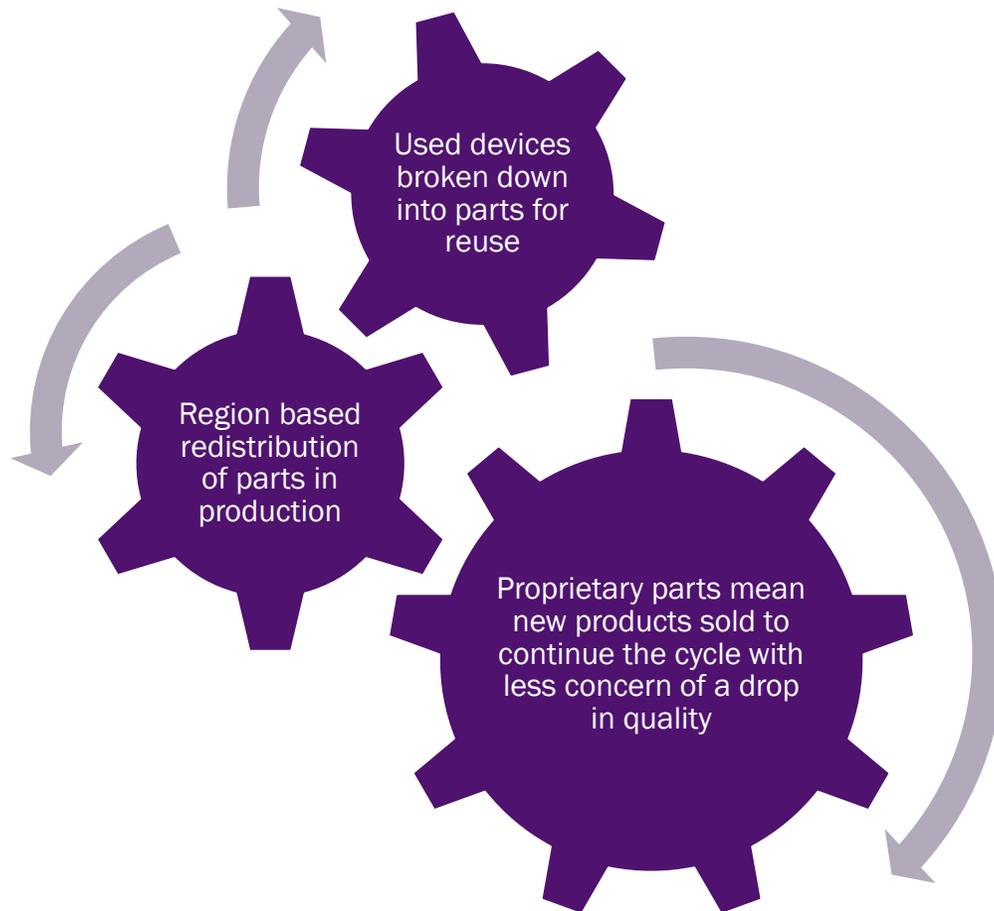


- H&M partnered with I:CO\* to collect 29,005 tonnes of textiles for reuse and recycling. H&M's customers return used clothing to the stores, receiving a discount voucher for future purchases at H&M.
- I:CO\* collects the clothing and sorts it into three categories:
  - **rewear** (sold on the second-hand market),
  - **reuse** (turned into other textile products like cleaning cloths),
  - **recycle** (turned into textile fibers for things like insulation).
- Although not disclosed by H&M, we assume each collected textile category creates revenue streams for I:CO\*.

#### Result:

- Several new revenue streams are created purely by creating a repurposing model

### Remanufacture



Source: Canon

### Case Study: Canon

**Canon**



Canon has five sites conducting recycling in four regions around the world.



Collect used devices and break them down into parts, which are washed and cleaned.



Circulate these resources within the same regions where they are consumed, so that they can be reused in the production process.

#### Result:

- High quality manufacture is incentivized to retain value
- Parts used in reconstruction are cycled to increase their lifespan past 200%

## Repair



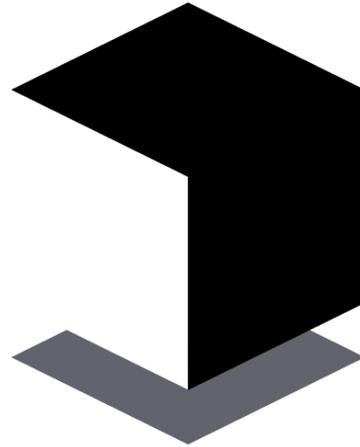
## Case Study: Patagonia



- Worn Wear initiative, provides consumers with step-by-step guides to repairing common wear and tear for apparel life extension
- The brand also sponsors events around the U.S. where customers can bring their products in person to be repaired
- Designing products to have extended life spans by providing repair services
- Shift to the trend of the “right to repair”, which demands affordable repair solutions and better product manufacture

### Result:

- Increased customer retention
- Increased brand trust



# The Black Box Institute

200 King Street West, Suite 1301, Toronto, Canada

[www.theblackboxinstitute.com](http://www.theblackboxinstitute.com)

+1.416.862.5487

- <https://www.worldbank.org/en/news/press-release/2018/09/20/global-waste-to-grow-by-70-percent-by-2050-unless-urgent-action-is-taken-world-bank-report>
- <https://www.crcresearch.org/solutions-agenda/waste#:~:text=A%20recent%20study%20states%20that,kg%20of%20garbage%20each%20day.>
- <https://sensoneo.com/sensoneo-global-waste-index-2019/#:~:text=Humankind%20currently%20produces%20two%20billion,led%20to%20this%20environmental%20catastrophe.>
- <https://youmatter.world/en/definition/definitions-circular-economy-meaning-definition-benefits-barriers/>
- <https://www.nielsen.com/eu/en/insights/article/2018/global-consumers-look-for-companies-that-care-about-environmental-issues/>
- <https://www.newswire.ca/news-releases/more-canadian-consumers-seeking-green-products-and-services-in-current-economy-515057131.html>
- <https://beta-i.com/2019/02/15/7-rs-circular-economy/>
- <https://www.circle-economy.com/news/arming-the-workforce-for-a-circular-revolution-skills-and-labour-in-a-circular-economy>
- <https://www.bbc.com/future/bespoke/made-on-earth/the-new-roots-of-the-flower-trade?ocid=fbmadeonearth>
- <https://www.royalfloraholland.com/en/about-floraholland/who-we-are-what-we-do/facts-and-figures>
- <https://www.re-tek.co.uk/shaping-the-future/>
- [https://www.zerowastescotland.org.uk/sites/default/files/Retek\\_CaseStudy.PDF](https://www.zerowastescotland.org.uk/sites/default/files/Retek_CaseStudy.PDF)
- <https://global.canon/en/csr/report/index.html>
- <https://global.canon/en/sustainability/>
- <https://thecsrjournal.in/global-sustainability-report-2020-canon-philosophy-of-kyosei/>
- <https://www.patagonia.com/our-footprint/>
- [https://www.patagonia.com/on/demandware.static/-/Library-Sites-PatagoniaShared/default/dwf14ad70c/PDF-US/PAT\\_2019\\_BCorp\\_Report.pdf](https://www.patagonia.com/on/demandware.static/-/Library-Sites-PatagoniaShared/default/dwf14ad70c/PDF-US/PAT_2019_BCorp_Report.pdf)
- <https://eu.patagonia.com/gb/en/our-footprint/corporate-social-responsibility-history.html>
- <https://ecoalf.com/es/>
- <https://www.plasticethics.com/home/2018/10/18/ecoalf-pioneer-is-sustainable-fashion-from-plastic-waste-collected-in-seas-since-2009>
- <https://is.upc.edu/ca/seminaris-i-jornades/seminaris/std-2014/reports-2014/group-3>
- <https://medium.com/circulatenews/a-circular-economy-for-food-5-case-studies-5722728c9f1e>
- <https://pacecircular.org/action-agenda/food>
- <https://www.annies.com/regenerative-agriculture/>
- <https://www.billerudkorsnas.com/managed-packaging/knowledge-center/articles/how-to-perform-a-life-cycle-assessment-of-packaging>
- <https://circlesolutions.com/circular-packaging/#:~:text=In%20a%20circular%20economy%2C%20products,integrate%20seamlessly%20into%20sustainability%20efforts.>
- <https://goodnaturedproducts.com/pages/compostable-biodegradable-packaging>
- [https://www.accenture.com/\\_acnmedia/PDF-146/Accenture-and-WEF-Raising-Ambitions-PoV.pdf#zoom=50](https://www.accenture.com/_acnmedia/PDF-146/Accenture-and-WEF-Raising-Ambitions-PoV.pdf#zoom=50)
- <https://articles.cruxinvestor.com/tesla-battery-recycling>
- <https://www.raylo.com/blog/reusing-smartphones-and-the-circular-economy>
- <https://www.livingcircular.veolia.com/en/industry/lego-lays-bricks-tomorrows-circular-economy>
- <https://www.ellenmacarthurfoundation.org/our-story/our-network/strategic-partners>
- <https://p4gpartnerships.org/pioneering-green-partnerships/all-p4g-partnerships/circular-fashion-partnership>
- <https://www.climateworks.org/wp-content/uploads/2016/12/CE-political-economy.pdf>