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an introduction to the circular economy
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OBJECTIF: HAPPINESS

OBJECTIF: MANAGING CAPITALS

QUALITATIVE WORLD

ECOLOGIC
natural capital

SOCIAL
human & cultural capital

SUSTAINABILITY

CIRCULAR ECONOMY

ECONOMIC
manufactured & financial capital

PHYSICAL WORLD

SITUATING SOCIETY, SUSTAINABILITY AND CIRCULAR ECONOMY
Objective: Celebrating Christmas and building a circular economy together:

- preventing waste (*all waste is man-made*)
- maintaining value
- managing resource stocks

• *Let us look at Christmas trees*
Waste management solution: incineration.

- small labour input,
- economic value lost,
- resources lost,
- some waste produced (ashes and heat)

If burnt in a co-gen heat and power plant, some energy may be recovered.
Value preservation solution: reuse of goods and materials

Christmas tree dismantled for ‘reuse’

• labour intensive,
• highest value preservation,
• zero waste, high resource security.

whose decision? whose investment? whose liability? whose risk? whose profit?
Sharing economy

rent-a-tree
serial economy

Photo Rent-a-Christmas-tree San Francisco
Sharing society

sharing the
- event,
- trees,
- candles,
- people,
- emotions,
- music

Photo cvjm hochdorf.de
Who takes the decision?
The Circular Economy is local, low key

Warehouse on wheels, trucks at the Brenner

Delivery drones? 

Logistics and Shopping Centers

little global distribution logistics necessary in the CE

little packaging, little publicity

Container ports, ships, trains
## Societal benefits of the Circular Economy (macro-economic) in comparison to the present economy

**I/O Study by Skanberg-Wijkman 2016, France (7 countries)**

<table>
<thead>
<tr>
<th></th>
<th>circular scenario</th>
<th>energy efficiency</th>
<th>material scenario</th>
<th>combined scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>reduced GHG</strong></td>
<td>— 50,1%</td>
<td>— 28%</td>
<td>— 5%</td>
<td>— 66%</td>
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<tr>
<td><strong>additional jobs</strong></td>
<td>+ 100’000</td>
<td>+ 200’000</td>
<td>+&gt;300’000</td>
<td>+ 4%</td>
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<tr>
<td><strong>impact on trade balance</strong></td>
<td>+ 0.4% of GDP</td>
<td>+ 0.4% of GDP</td>
<td>+ 0.2% of GDP</td>
<td>+ 0.25% of GDP</td>
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**Source:** [http://www.clubofrome.org/](http://www.clubofrome.org/)

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Societal benefits of the Circular Economy (micro-eco): product-life extension is a strategy to create local jobs, substitute manpower for energy & material and prevent waste.

Analysis of the running costs of a 30 year old automobile: Toyota Corona Mk II 1969

Source: Stahel, Walter 1982
In 1995, the 59 trains of German Rail had been in service for 15 years, covering 15 million km each.

- Redesign costs were €3 million per train, versus €25 million for a similar new train.
- Redesign preserved 80% of resources -- 16,500 tons of steel, 1180 tons of copper -- prevented 35,000 tons of CO₂ emissions & 500,000 tons of mining waste per train.

The Redesign included a technological upgrading of the rolling stock, and allowed to add more seats.
Performance Economy Business Models

Retained ownership

Goods as services
Molecules as services
Selling performance
Function guarantees

Thank you for listening

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