Implementation of remanufacturing at Neopost: Key success factors and insight into the measurements of its economic, social and environmental benefits

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Implementation of remanufacturing at Neopost
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2. Case study: Neopost
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4. Measuring the economic, social and environmental impacts and benefits
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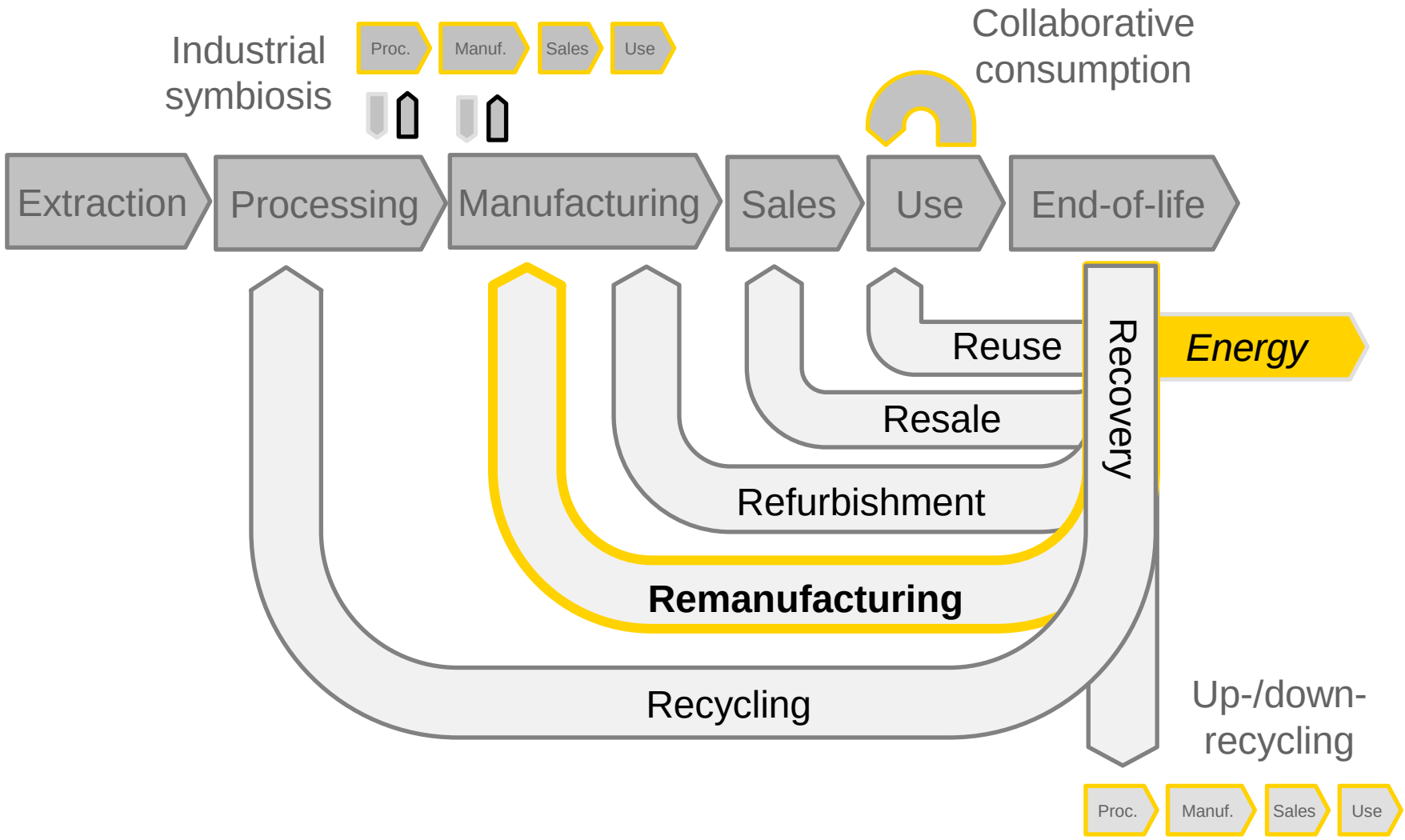
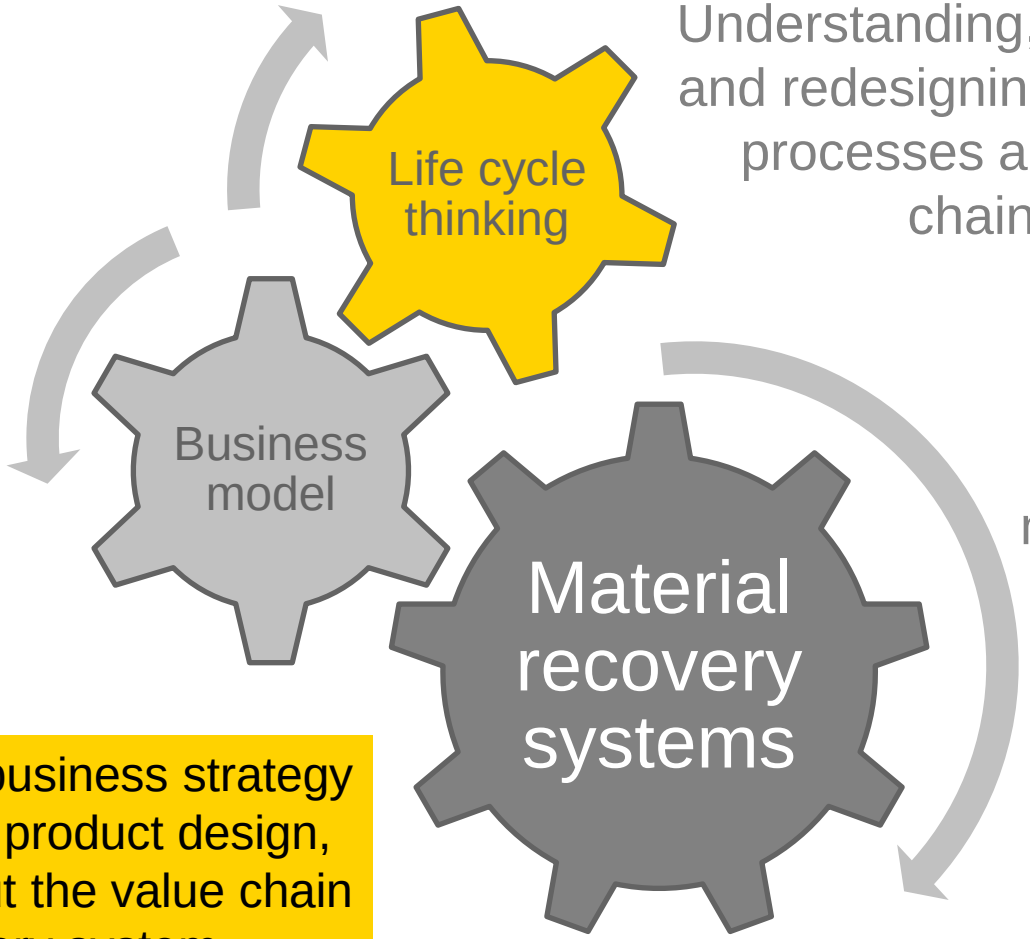
Remanufacturing
Part of the circular economy



Circular economy

Three elements that have to work together



Understanding, optimising and redesigning products, processes and value chains

Getting incentives right and reinforcing value chain collaboration

Closing material loops and optimising reverse logistics

A circular economy business strategy must be linked with product design, incentives throughout the value chain and the recovery system

Remanufacturing
Introduction

- Remanufactured products
  - Used products
  - Same performance specifications as a new product
  - Warranty equal to new product

  - Product life can be extended
  - Products can have multiple useful lives

  - Part of the circular economy and resource efficiency
    - Reducing the amount of raw material required (saves also energy)
      - *Up to 25% - 90% material savings*
    - Generating less waste (reduces emissions associated with waste)
      - *Up to 35% - 88% waste reduction*

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Introduction to Neopost

NEOPOST
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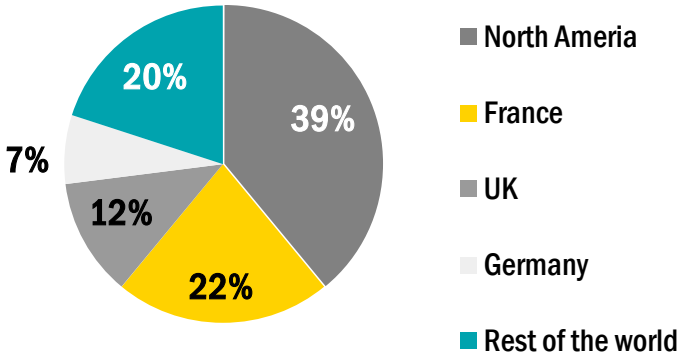
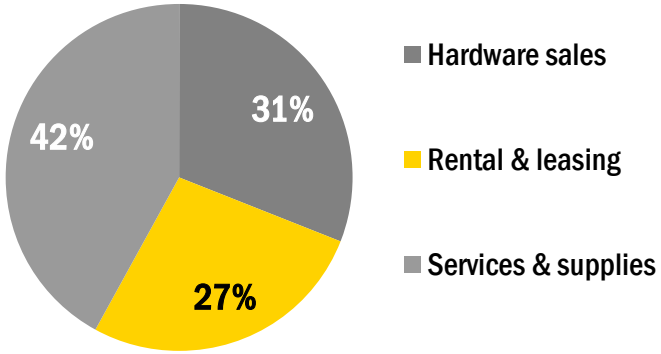
- Global leader in mailing solutions for companies and mail centres and a major player in shipping services and digital communications
  - Founded in 1924
  - **€1.1 billion** sales
  - **800,000** customers
  - **5900** employees
  - Presence in **29** countries

Revenue by country



Revenue by activity



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Postal (franking) machines

New product

2/3 of sales

- All parts are new
- Produced in Asia

100% of the product is new

Same functions

Same quality

Same aesthetic

Same certification

Remanufactured product

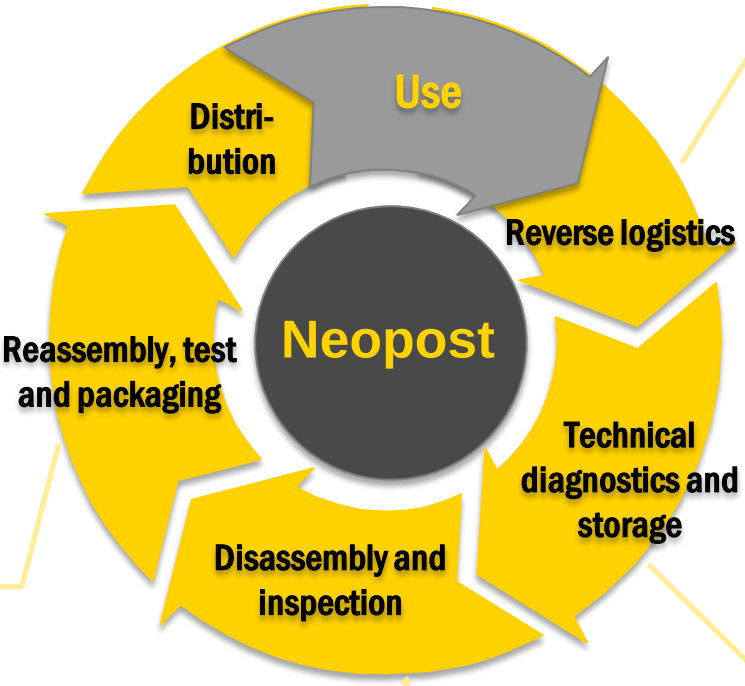
1/3 of sales

- Recovery of machines that have been used by clients
- Change of visible parts that are damaged or no longer up to date:
  - Hood
  - Certain electronic cards
  - Worn out parts
- Software update
- Remanufacturing in France

Between 50% and 75% of the product (in weight) are from reused parts

Implementation of remanufacturing at Neopost

Remanufacturing process



Collection of machines and dispatch to logistics centre or remanufacturing centre

Changing worn out parts and visible parts.
After reassembly, test to guarantee the functionality of the machine. Then packaging and storage before delivery.

Technical diagnostic technique allows to assess the product and its potential for reuse. Storage depending on the result of the diagnostic.

Disassembly of all parts for inspection. Sorting parts to keep, to change or to recycle.

Implementation of remanufacturing at Neopost
History

Integration of ecodesign at Neopost

2004	*2006*	*2007 - 2009*	*2010*	*2011*
First ecodesign working group and ISO 14 001	State of play First LCA Sentisitization Project ECO'DEEE	Integration of ecodesign Guidelines Integration in the processes Energy Star **Disassembly / Recyclability**	Strategy Integration of ecodesign in the strategy	Communication Ecolabel

Existing reverse logistics system → **Launch of refurbishment**

Refurbishment of products from reverse logistics sold at a low cost on certain markets

- Negative impact of the value of the product
- Weak market

Remanufacturing Strategy

Implementation of remanufacturing at Neopost
Remanufacturing strategy (1/2)

- Pricing strategy based on functionality and features
  - A remanufactured product is equivalent to a new product in terms of functionality, aesthetics, certification and warranty – no difference
  - Price differentiation is only based on the features available
- Buyback to maximise product recovery
  - Take back recovery system was already in place due to postal regulations
  - Buyback scheme provided financial motivation for operating companies to collect, organise and send back used products to the remanufacturing centre
- Reverse supply chain
  - Asset management
  - Parts of used products can be used interchangeably
  - All leasing and rental contracts state that the product could contain some remanufactured parts

Implementation of remanufacturing at Neopost
Remanufacturing strategy (2/2)

- Align remanufacturing with new products and features
  - Rationalise the business processes in an industrial way to be cost-efficient
  - Able to adapt to the evolution of new products over time
  - Different levels of remanufacturing were defined to ensure the standardised remanufacturing operations with systematic replacement of parts – guarantees that the remanufactured product is equivalent to the new product

- Take back forecast
  - Reverse logistics = supply of parts for remanufacturing
  - The ability to determine the return flow defines the whole process and overall strategy, particularly procurement
  - Leasing or a rental contracts stop after a predefined period - the service life of each product is well known and 90% of products return from customers after 4 or 5 years of use
  - Visibility and predictability is a key success factor for planning factories' workload, predicting the mix between new and remanufactured machines and forecasting production

Implementation of remanufacturing at Neopost

Measuring economic, social and environmental impacts

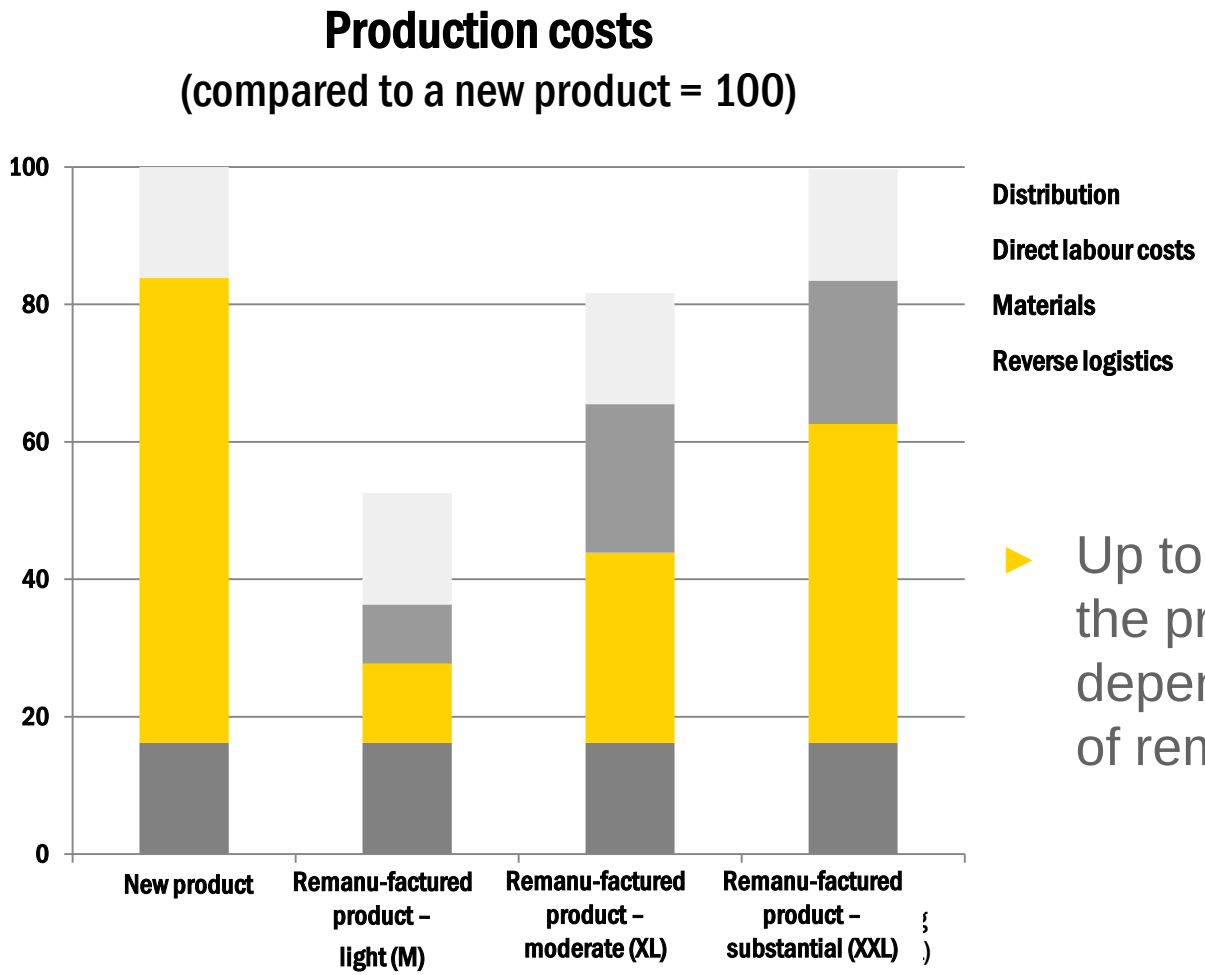
- Methodology
  - Economic impacts: Cost-based Price method
  - Local employment impacts: Input Output Analysis (IOA)
  - Environmental impacts: Life Cycle Assessment (LCA)

- **Neopost's IS-420 mailing system**
- Remanufacturing centre in Le Lude, France

- Typical use franking around 80 letters per day.
- Product usage consists of two cycles of five years each
- The functional unit for each cycle is to frank 105 000 mail items over five years.

- *Assembly was considered insignificant, excl. the supplies used during the use*

Implementation of remanufacturing at Neopost
Economic results



- Up to 50% reduction of the product costs, depending on the level of remanufacturing

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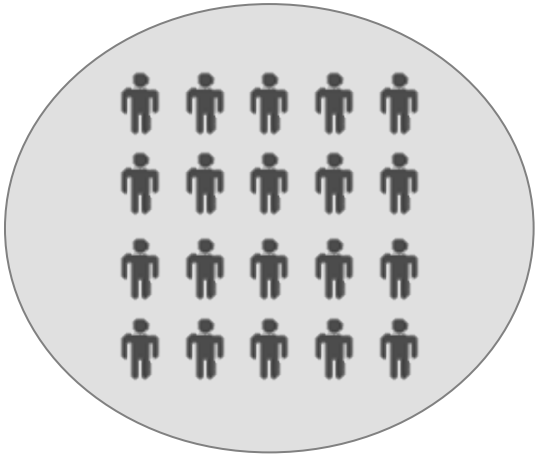
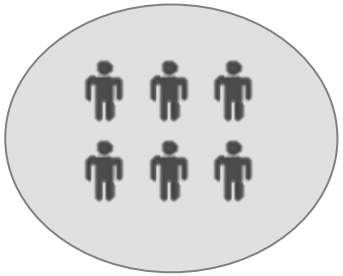
Employment results

20 direct jobs Maintained in the region at Le Lude production site



6 indirect jobs Supported in France through suppliers of Le Lude site



Less jobs in Asia

- Related to reduction in new machines to produce
- Difficult to quantify

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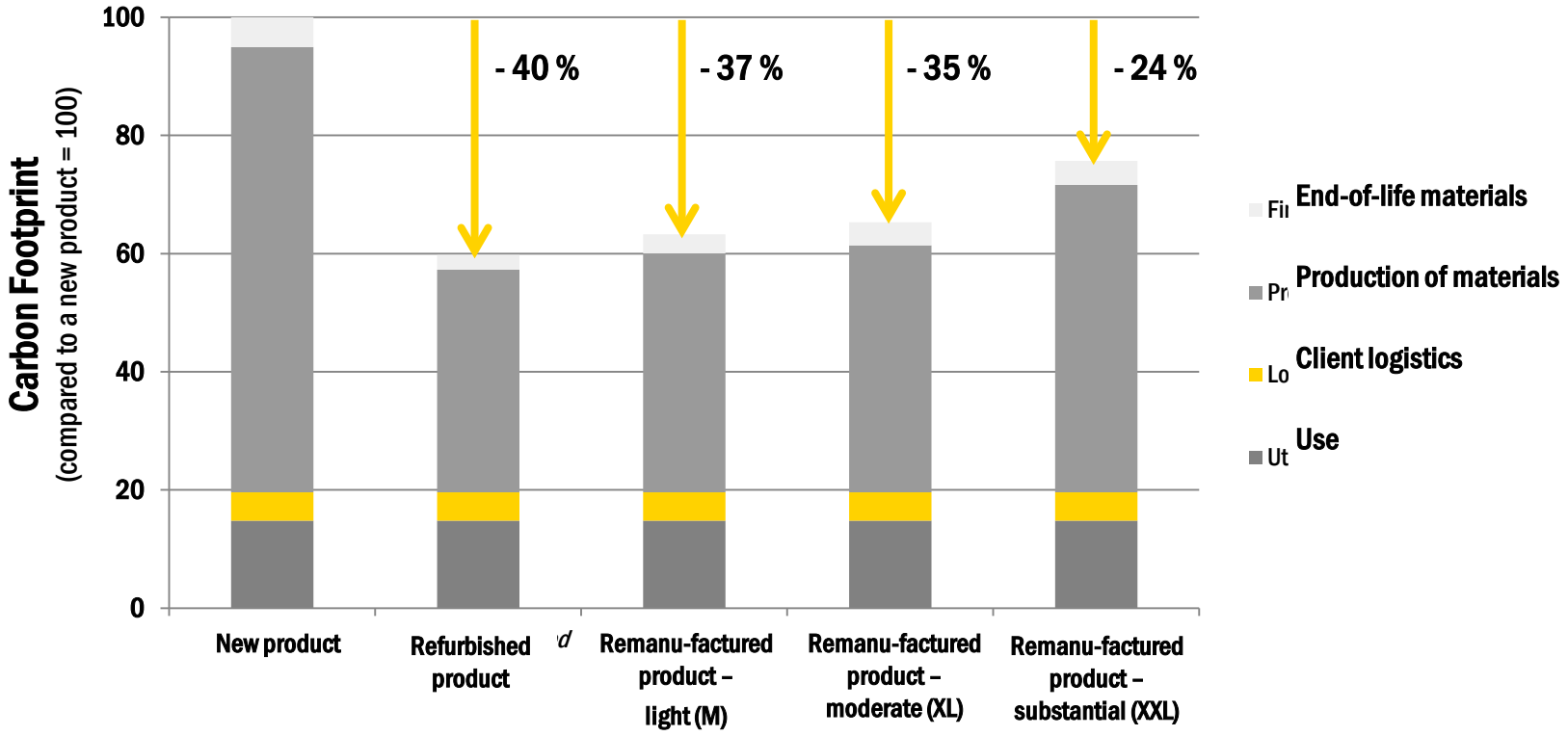
Environmental results



- High impact of raw materials, low impact of use phase (15%)
- Up to 40% reduction of GHG emissions, depending on the level of remanufacturing

Implementation of remanufacturing at Neopost
Conclusion

- Product characteristics
  - Long life product in a limited market
  - High product value at end-of-life

- Factors of success
  - High maturity of ecodesign in the company (disassembly & recycling)
  - Products were leased not sold
  - Reverse supply chain already in place
  - Convincing the entire value chain from the sales force to clients;
  - Providing incentives for optimising reverse logistic system to recover used products;
  - Rationalising business processes for remanufacturing and new product development.

  - A change of business model requires all of the company's main functions to also adapt - particularly in sales, production and procurement.
  - Combining a strategic business strategy with a pragmatic and flexible response to each of the key success factors.

Any questions?

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