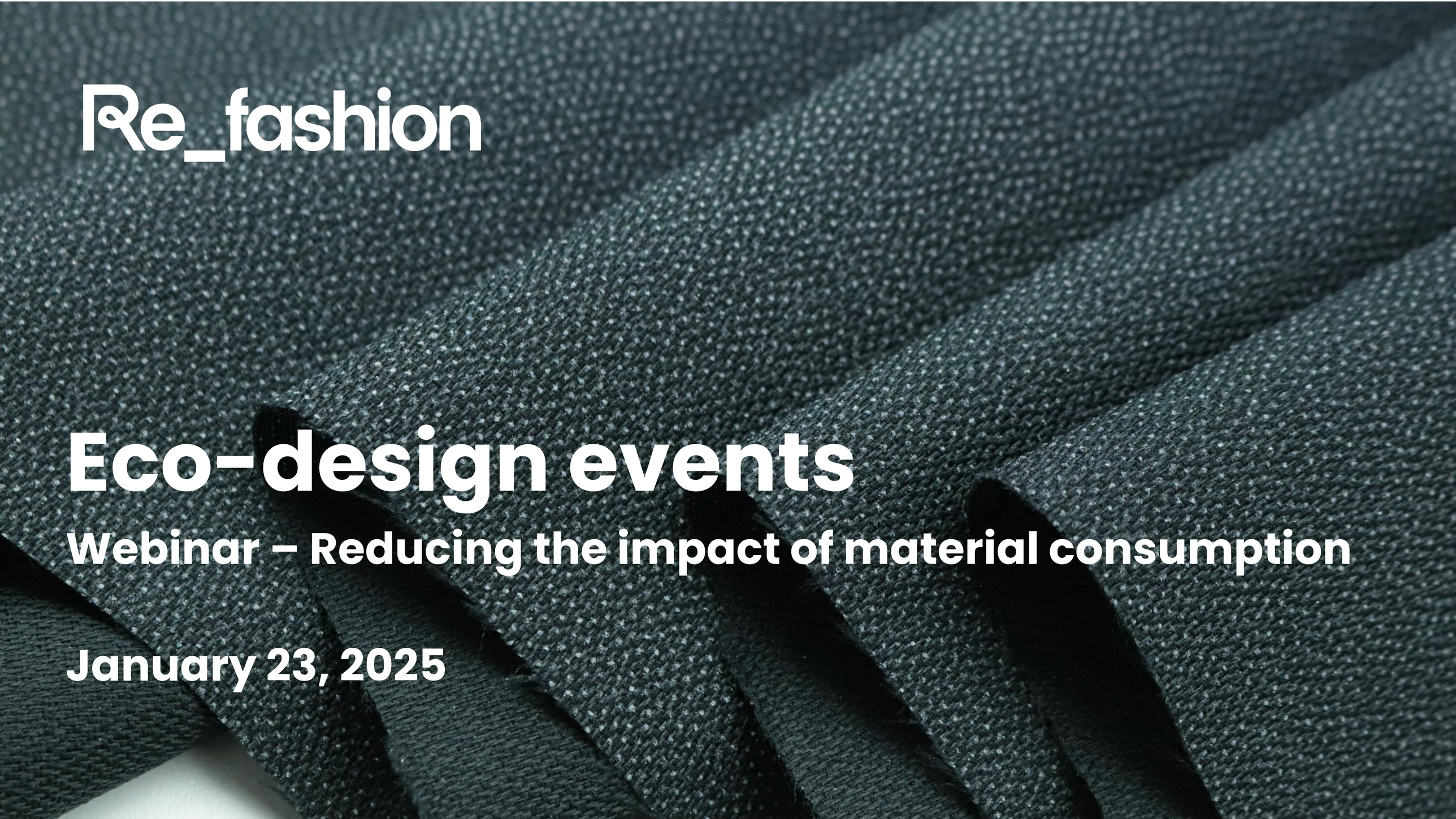


Re_fashion

Eco-design events

Webinar – Reducing the impact of material consumption

January 23, 2025

Agenda

Refashion presentation

Presentation by Manisha MARIVAL from CETI

Additional information

Satisfaction survey

What is Refashion?

- Created in 2008 in response to the Extended Producer Responsibility (EPR) law for clothing, household linen, and footwear.
- A private non-profit company approved by the French public authorities
- 100% funded by brands, distributors, and manufacturers—marketers—through eco-contributions.

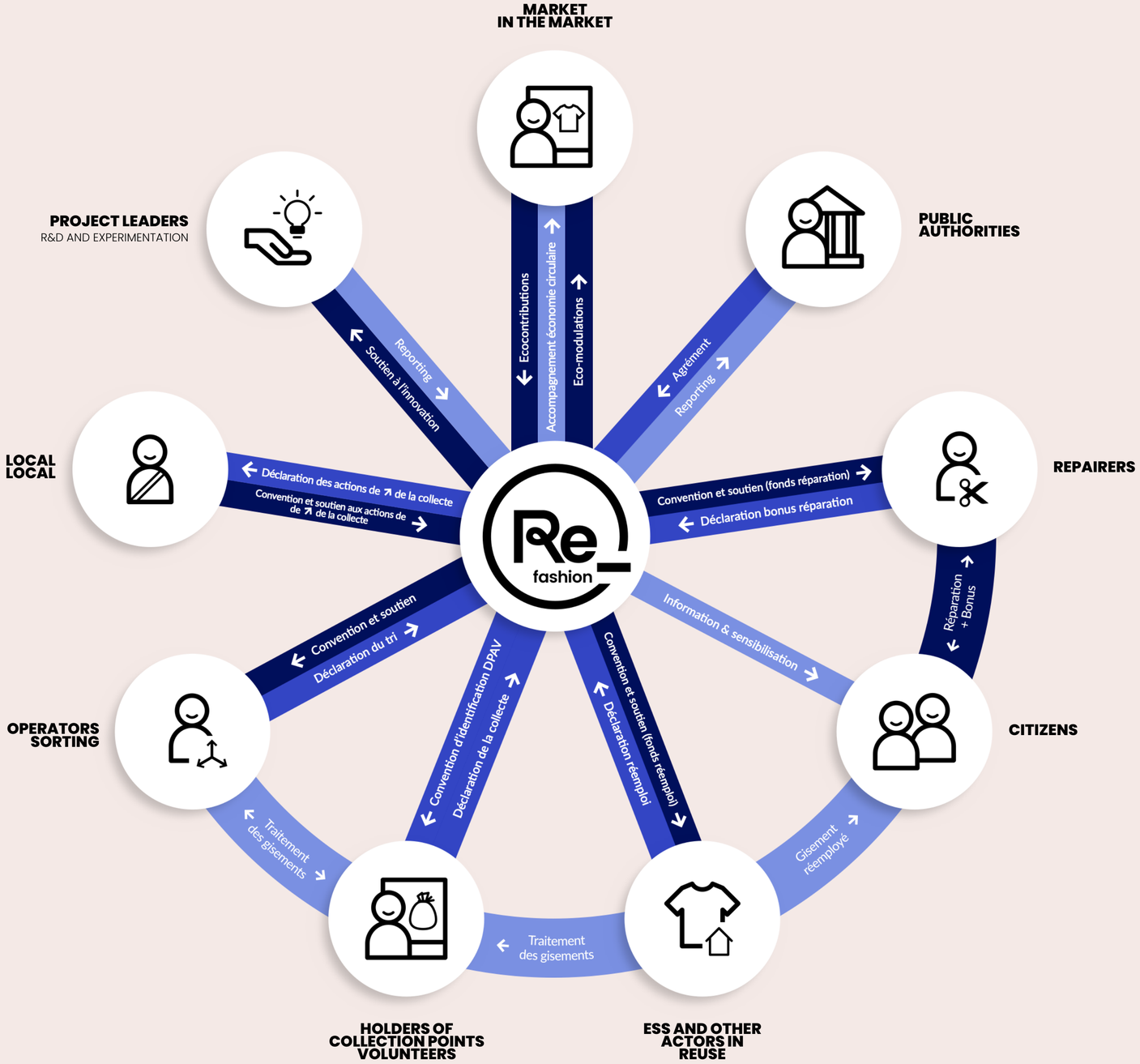
We are therefore responsible for the prevention and management of the end of life of products placed on the market
for private individuals, end destination in France.

Prevention, Repair, Reuse, Collection, Sorting, Recycling

Who are we?

The Refashion ecosystem

- ✓ We collect eco-contributions paid by brands.
- ✓ We encourage eco-design of products.
- ✓ We facilitate the co-construction of solutions for ecosystem stakeholders.
- ✓ We raise awareness among citizens.
- ✓ We support sorting operators (€/ton).
- ✓ We support local authorities in their communications to citizens (€/inhabitant).
- ✓ We support innovation (€/project).



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How can we minimize the impact of material consumption in clothing manufacturing?

Identifying and exploring different avenues

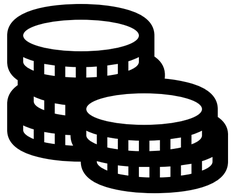
Ceti
TRANSFORMATIVE
TEXTILES

?

Reducing environmental impacts

Commitment to durability

Legislation



Economic optimization

AREAS FOR IMPROVEMENT

- Optimization of production quantities
- Standardization
- Digitization
- Zero waste/minimal waste design
- Optimization of pattern placement

Optimization of production quantities

OPTIMIZATION OF PRODUCTION VOLUMES

Key figures:

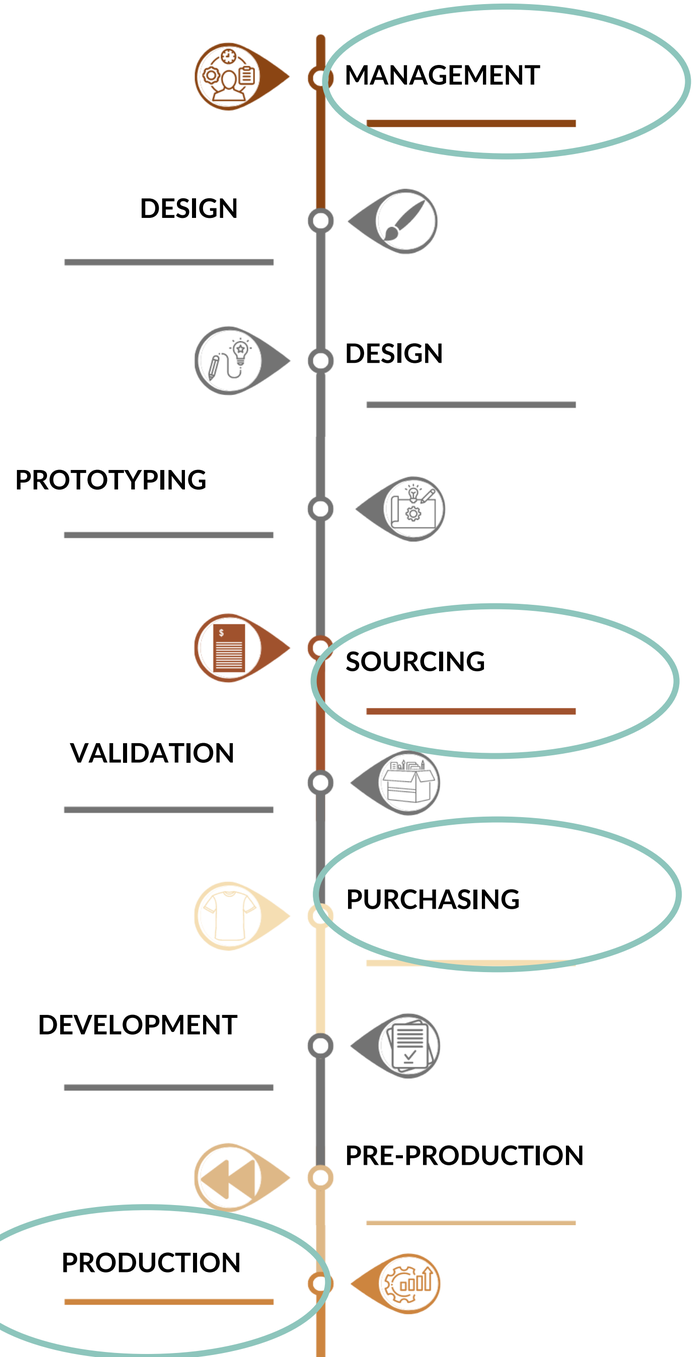
- Unsold clothing accounts for 4.1% of total turnover in the clothing and shoe sector in France (Source: ADEME)
- The average percentage of unsold textile items found in the literature is 21% (Source: European Environment Agency report)
- AI could reduce residual stock by 21% (Source: AI Expert Interview)

- **Minimization of unsold items**
- **Improved inventory management**
- **Minimization of price depreciation**
- **Increased responsiveness and production flexibility**

- **Higher costs for local or Euromed production**
- **Delivery times: an obstacle to on-demand production**

OPTIMIZATION OF PRODUCTION VOLUMES

Objectives:
- Increase production responsiveness and flexibility
- Minimize unsold items
- Improve inventory management



Increase the proportion of the permanent collection

Adjust quantities according to sales forecasts using artificial intelligence

Find on-demand production partners

Reduce material waste, plan for just-in-stream production and pre-orders

Stream production to reduce inventory.

Standardization

Key figures:

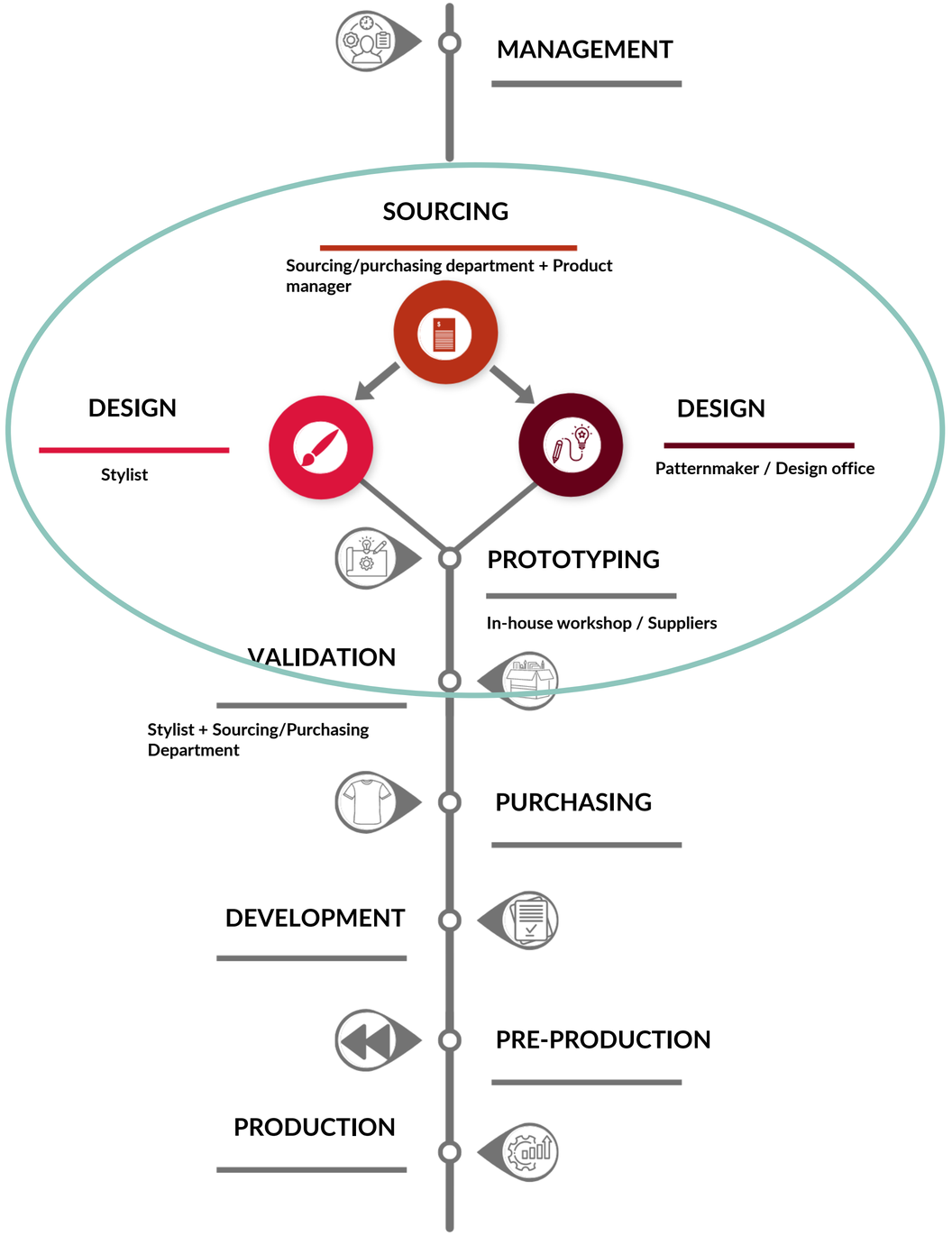
- Gender diversity was used to encourage consumption in the 1980s
- Reduction in additional material purchases (margin of error) from 5% to 2%

• Reduction in the development of material samples • Improved quality of the fabric production process and supplier responsiveness • Minimization of waste and excess inventory • Reduction in purchasing costs	• Can only be used for unadjusted cuts of unisex products • Restriction of customization

STANDARDIZATION

Collaborative and circular work between the design, conception, and sourcing departments

Goals:
Reduce the diversity of products brought to market each season
- Standardize materials within collections



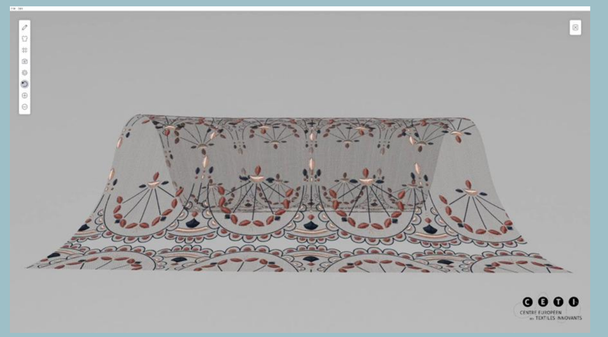
Digitization

Key figures:

- The estimated number of samples is between 13.5 and 27 million per year for France.
  (Source: Calculation based on strategy 2 interviews)
- 15% to 70% reduction in prototypes thanks to 3D
  (Source: Strategy 2 interview, CETI)
- Reduction in prototype development time: from 2 weeks to 8 hours (Source: CETI interview)

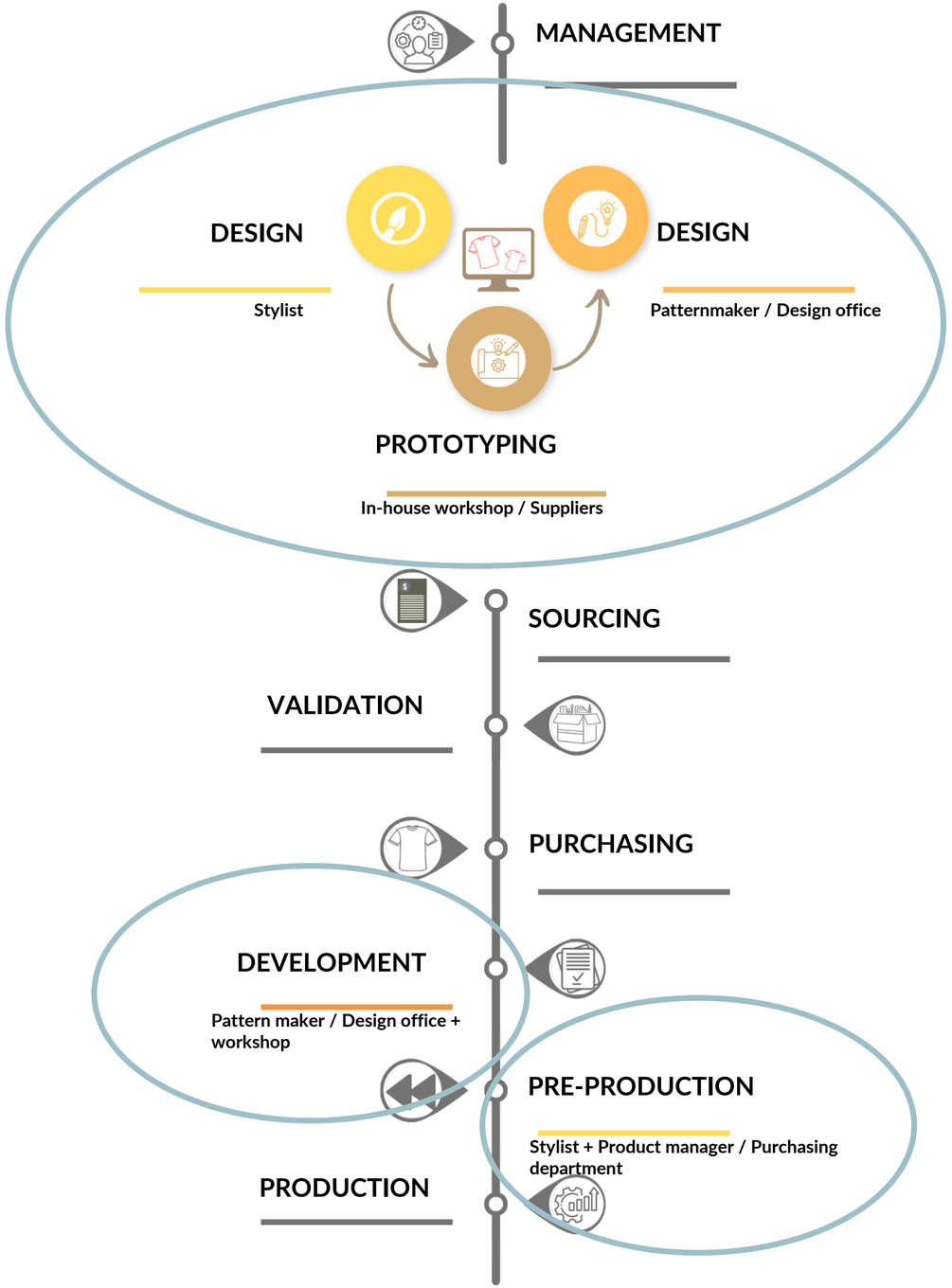
- **Reduction in the number of prototypes**
- **Time savings**
- **Creation of a shape library**

- **Forecasting training time**
- **Characterisation of materials to achieve realistic results**
- **Adaptation of computer equipment (investment)**
- **Suppliers with the necessary software**



DIGITIZATION

Goals:
- Reduce the number of prototypes
- Reduce material consumption
- Save time



Collaborative development

Virtual prototypes + physical

Virtual prototypes + physical

Zero waste/minimal waste design and Pattern placement optimization

ZERO WASTE / MINIMAL WASTE DESIGN

Key figures:

- Zero waste design: efficiency close to 100%
- Minimal waste: Efficiency target of at least 85%

Key figures: Example of a French sports brand

- 7.8% reduction in material consumption
- 35% reduction in production waste

• **Waste minimization** • **Minimization of material consumption**	• **Adaptation for certain product categories only** • **Overhaul of internal processes**

OPTIMIZATION OF PATTERN PLACEMENT

Key figures:

- Loss of 15 to 20% of material during the cutting process
- Increased material efficiency, up to 98% depending on the product type
- Head-to-head placement allows for efficiency gains of up to 7.9% (depending on the type) compared to strict placement

• **Reduction in material consumption**	• **Optimization is more difficult depending on complex fabric patterns and production constraints**
• **Minimization of cutting waste**	• **Initial investment in software, staff training, and process organization**
• **Time savings on cutting**	• **Adaptation of fabric widths: a challenge for material suppliers**

ZERO WASTE / MINIMAL WASTE DESIGN

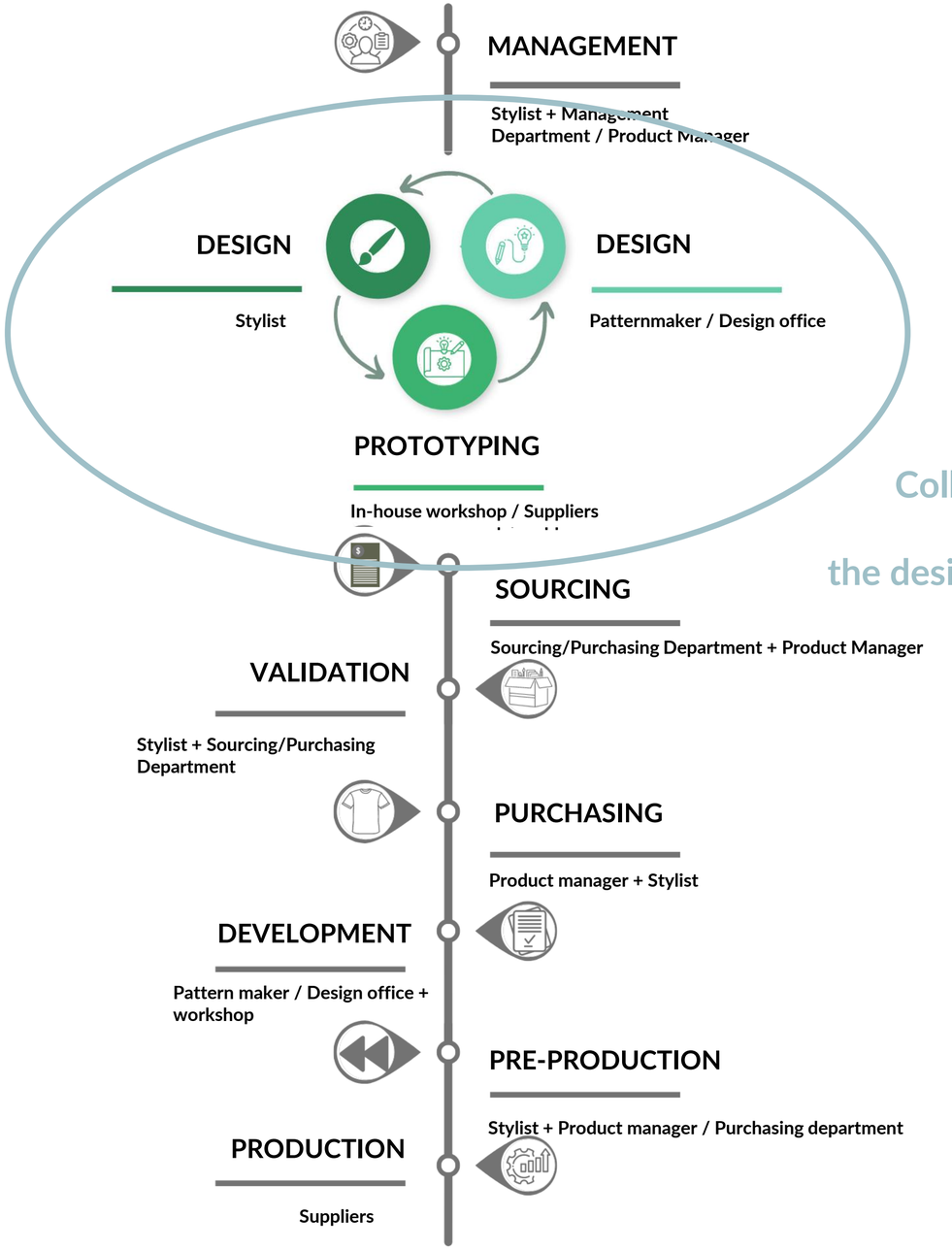
Collaborative and circular work between the design and engineering departments

Goals:
- Optimization of patterns and models
- Maximum material efficiency

OPTIMIZATION OF PATTERN PLACEMENT

Digital design and efficiency calculations

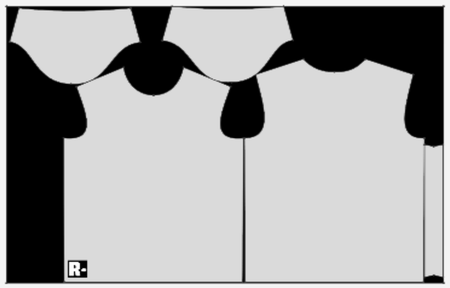
Goals:
- Optimization of piece placement
- Reduction of cutting waste



Collaborative and circular work between
the design and conception departments

Minimal Waste Design
=
Form - Efficiency - Material consumption

T-SHIRT
Conventionnel

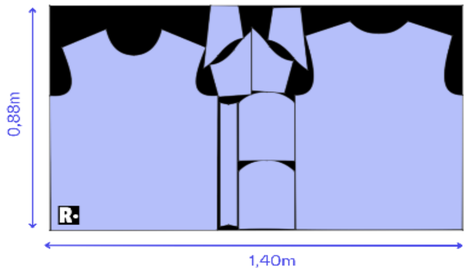


Conso tissu: 1.40m2
35% de chutes

MINIMAL WASTE DESIGN

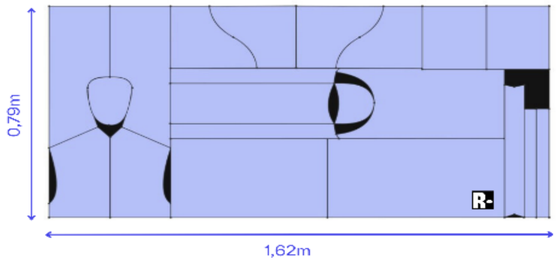
itération A

Conso tissu: 1.23m2 (-12%)
22% de chutes



itération B

Conso tissu: 1.28m2 (-8%)
3% de chutes



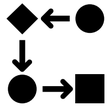
Minimal Waste Design approach
Mylène L'Orguilloux (2022)

CONCLUSION

Key takeaways

-Unsold items
-Waste during placement of patterns.

Teamwork



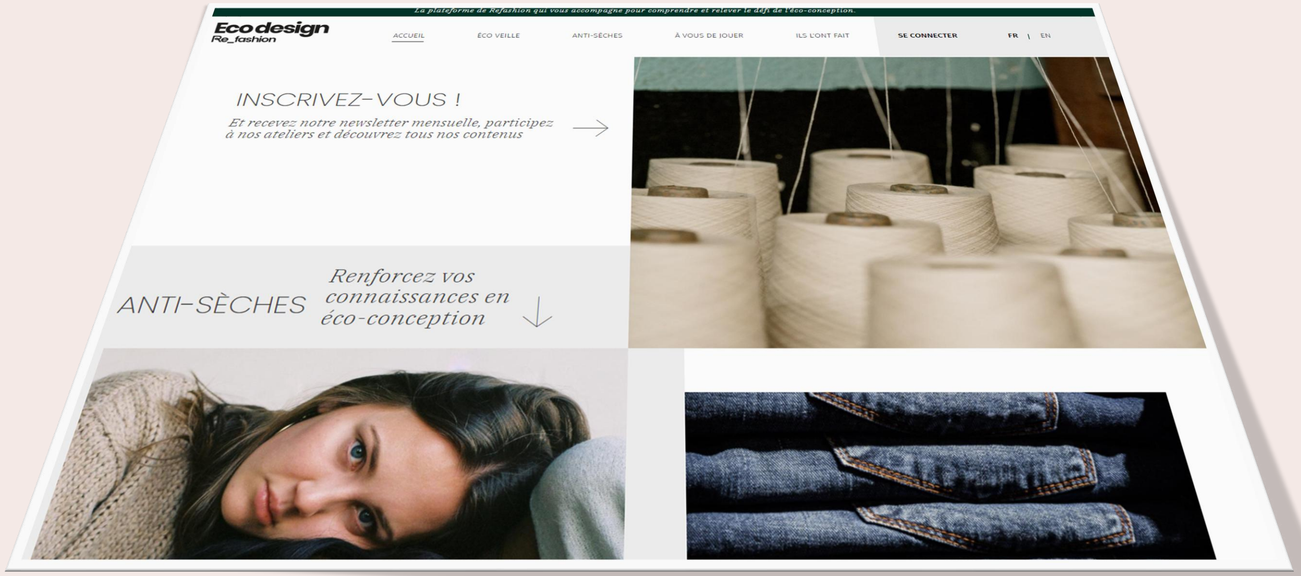
Iterative and step-by-step process

The Ecodesign Platform

A continuous source of information to learn about eco-design and get started!

Discover the platform

Ecodesign
Re_fashion



Agenda page: find past and upcoming events

Eco-watch: access documentation published by industry experts

Cheat sheets: become an expert on key concepts

Your turn: follow step-by-step guides to eco-design

They did it: get inspired by projects already launched by industry players

Eco-design platform

Useful resources

Discover the platform

Your turn: Reduce material losses during production

To review: Minimal/Zero Waste design

Re_fashion

Changemakers for a desirable future