



Magdata
GROUP



STRATOSFERA®

presentano

BEAUTY UNBOXED:

Comparative Study of Laminating Solutions for Premium Packaging

Towards More Informed Decision-Making





The Premium Packaging The Market The role of Lamination An Important Question





The Premium Packaging

In recent years, premium packaging has undergone a profound transformation.

It is no longer just about aesthetics.

Now it is:

- **brand perception**
- **environmental responsibility**
- **functionality**

👉 Today, these three elements must coexist



A Market that has changed

The market is facing increasing pressure on three fronts:

- **sustainability and regulations**
- **consumer expectations**
- **the technical complexity of materials**

👉 There is no longer a “one-size-fits-all” solution.



The role of Lamination

Lamination is more than just a finish.

It is:

- **protection for the printed material**
- **a way to enhance its appearance**
- **a functional element of the packaging**

👉 It is an integral part of the design, not just a detail.



An Important Question

When we choose a laminate, what are we really choosing?

- **An aesthetic effect?**
- **Technical performance?**
- **A sustainable solution?**

👉 The reality is that every choice involves balancing multiple factors.



The Key Question

The Objective of the Study

The Approach





The Key Question

The question on everyone's mind today is:

👉 **“Which material is the most sustainable?”**

The answer isn't simple:

- **materials aren't perfectly equivalent**
- **their performance varies**
- **and their end uses can differ**

👉 **Without the right tools, decisions are made “on a hunch.”**



The Objective of this Study

We wanted to set the record straight not with opinions, but with data.

👉 Goals:

- create transparency
- provide tools to the supply chain
- support informed decision-making



The Approach

Comparison of **6 different lamination solutions** on the same substrate, using objective criteria

The study was conducted in the following manner:

- **independent**
- **comparative**
- **non-commercial**

👉 The materials were evaluated based on their inherent qualities, not on the brand



Why is the case study important?

- 👉 **Sustainability** remains central to communication,
 - but the way it is communicated is changing radically.
 - It is no longer enough to simply “claim” sustainability; it must be **demonstrated**.

- 👉 Avoiding the **risk of greenwashing**:

- The study aims to provide clear, substantiated information to a market that is no longer satisfied with mere words (eco, green) or symbols (leaves, etc.) not backed by reliable data

- 👉 **Recyclability** is no longer just an environmental lever but a regulatory requirement

- with the entry into force of the European PPWR regulation

The Subject of the Study

Luxury Cosmetic Packaging

300 gsm Cardboard with UV Offset Printing

👉 A deliberately “challenging” case study

The lower paper weight allows for a clearer demonstration of the impact of the film component on the overall packaging structure.



The materials used

The boxes were produced using:

- Sappi Algro Design 300 gsm cardboard
- Colorgraf inks (4 Pantone® colours + varnish)
- Box-gluing adhesive – code 32070/65

Then laminated with 6 different types of film
(single variable)



👉 truly comparable results





The Film Genres analyzed

Traditional resins

BOPP WET – good versatility of application and functional performance

BOPP THERMAL (pre-coated with EVA)

BOPET METALLISED WET – high gloss, greater strength and excellent printability

Resins from renewable natural sources

PLA WET – excellent performance and usability combined with ‘bio’ credentials

CELLULOSE ACETATE WET – the top choice for its high gloss and silky feel

‘Transfer’ solutions

TRANSFER METALLIZED WET – an alternative to traditional laminating film, characterised by minimal transfer of coating onto the printed material and the recovery/recycling of the release liner.





The Evaluation Criteria

We have identified three levels of analysis for the cardboard/film laminate:

Recyclability as paper (CEPI-4evergreen)

LCA (life cycle environmental impact)

Durability and aesthetic appeal over time (accelerated aging study)

👉 All three factors influence the choice



An Evolving Project

This work represents a **starting point**, not an endpoint.

- **New materials will be gradually incorporated**
- **The analyses will be expanded and updated**
- **The results will evolve alongside the market**

👉 The goal is to build, over time, an increasingly comprehensive and **reliable tool for the entire supply chain.**



The results

Lab: INNOVHUB
Sperimental stations for industries

1. **RECYCLABILITY** – laboratory-scale assessment:
Aticelca method and CEPI method
2. **Accelerated aging** – qualitative assessment of any defects
3. **LCA** – Life Cycle Assessment – preliminary results





Recyclability Analysis: CEPI Method

Harmonised European laboratory test method to generate parameters enabling the assessment of the recyclability of paper and board products in recycling mills with conventional process (Part I)

Paper and Board – Recyclability Laboratory Test Method – Part I – Recycling mill with Conventional process

VERSION 3, FEBRUARY 2025

<https://www.cepi.org/cepi-recyclability-test-method-version-3/>

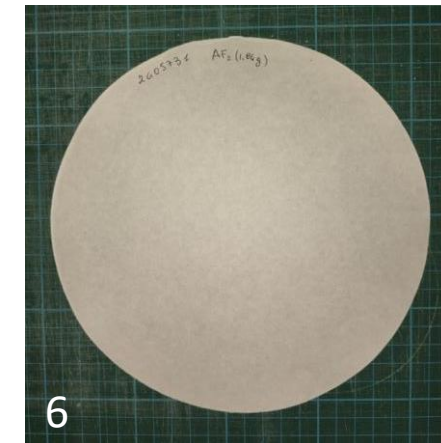
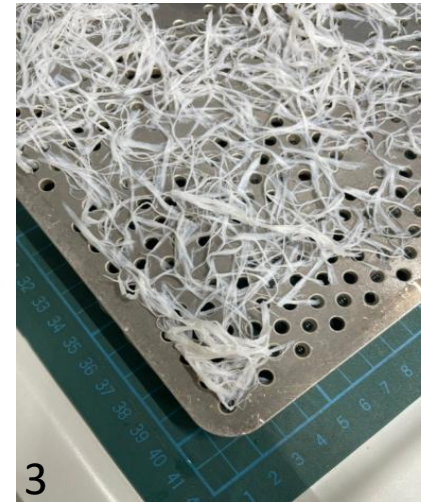
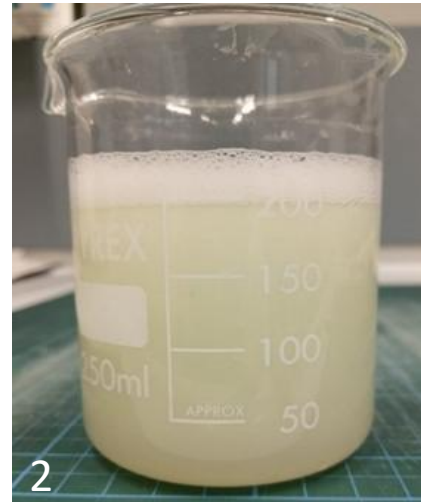


Assessment methods

1. Water pulping
2. Analysis of the filtrate (evaporation residue)
3. COARSE FRACTION
4. FINE FRACTION
5. Adhesive particles (MACROSTICKIES)

NB: The 'macrostickies' parameter is only included in the Aticelca assessment, not in the 4evergreen rating based on the CEPI method

6. Sheet formation (ADHESION AND VISUAL IMPERFECTIONS)



The results obtained relate solely to the specific facility analyzed



ACCELERATED AGEING TEST - method

- Treatment in a climate-controlled chamber at a temperature of 80°C and a relative humidity of 65% for 72 hours.
 - UNI ISO 5630-3:2005
- Approximate simulation of natural ageing over a period of years.
- Interim inspection of the cases after 24–48 hours.
- Visual assessment of macroscopic quality defects:
 - colour/whiteness
 - deformation/warping

LCA STUDY

Lamination process:

UF: production of **1000 boxes**

System limits: *gate-to-gate*

Film:

➤ UF: production of **1 kg of Film**

➤ System limits: *gate-to-gate*

➤ Impact evaluations:

➤ Method EF 3.1

➤ Characterisation and single score for assessing the categories with the greatest impact

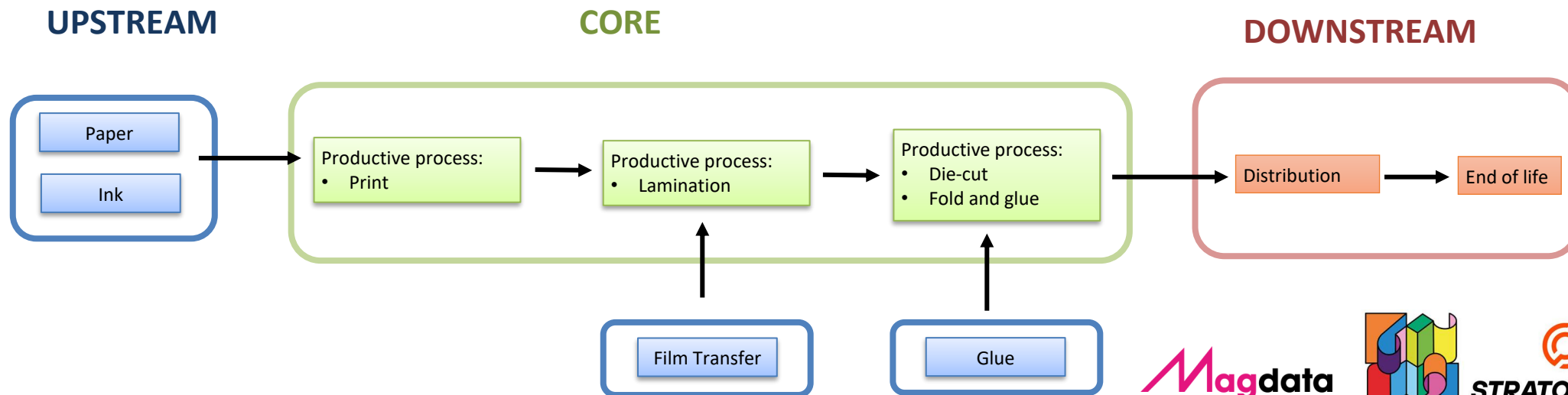
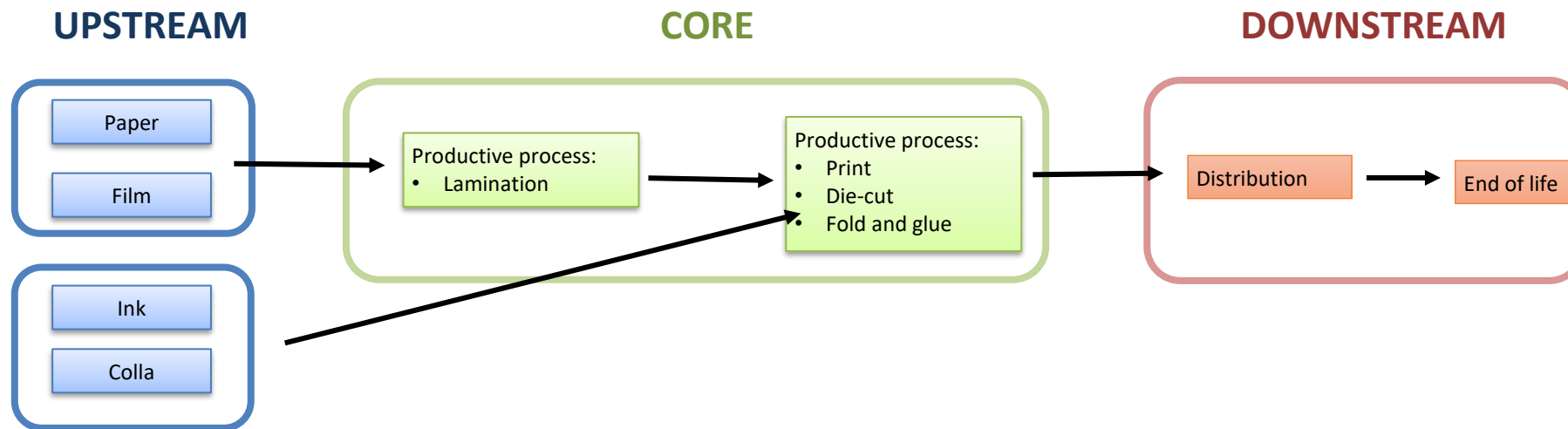


Next steps:

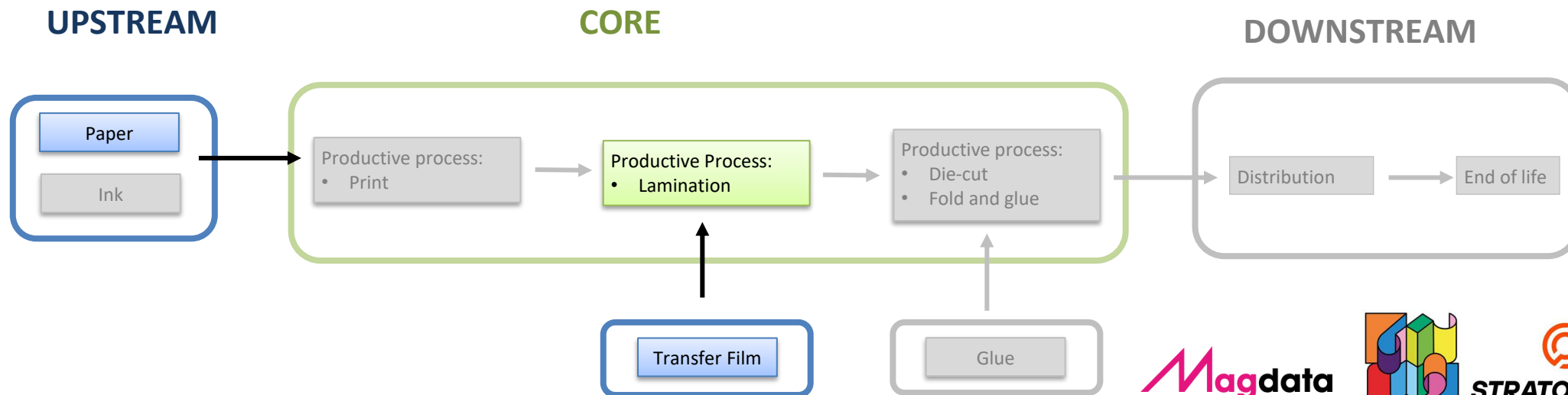
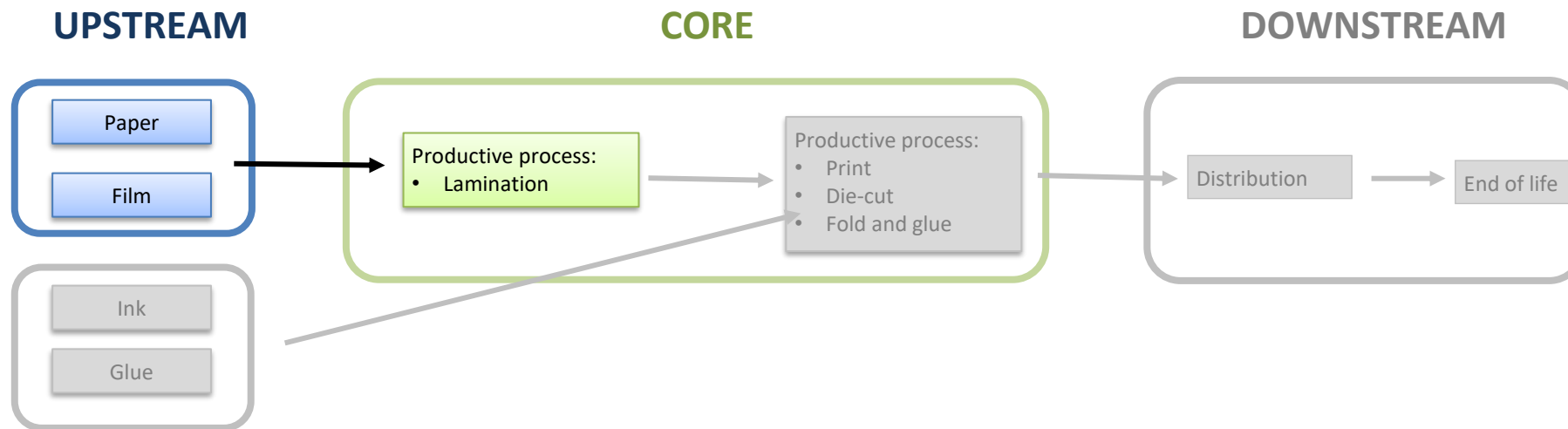
➤ Completion of the study

➤ Inclusion of end-of-life outcomes in the study

LCA STUDY – SYSTEM LIMITS



LCA STUDY – PHASES CONSIDERED





Results and conclusions available on request:
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