

The future in flexible paper packaging

H. Kirchberger / DELSCI GmbH

R&D partner of delfort AG paper group



Two Sides Webinar
“The evolution of paper packaging”
July 18th, 2024



FUNCTIONAL BARRIERS
FOR PAPER



RENEWABLE & RECYCLABLE
MATERIALS



DESIGNED FOR
EXCELLENT RUNNABILITY



PROTECTION AND SAFETY
OF PACKED GOODS



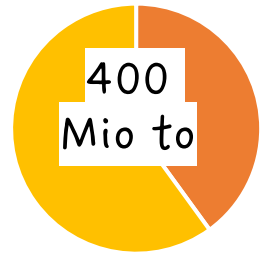
LIGHTWEIGHT DESIGN &
CONSTRUCTION



FULL-SCALE PRODUCTION
AT DELFORT

Why fibre-based packaging is on the rise

Plastic Production



■ Packaging ■ Rest



190 kg/a

Paper Production



■ Packaging ■ Rest

40%
recycling rate
in the EU (60%
PET bottles)

400 years
to decompose
(microplastic??)
200 mio. tons

Fossil
bioplastics
difficult to
compost/recycle

2-4 kg
CO_{2e} per kg plastic
produced



80%
recycling rate in
the EU



< 1year to
decompose



cellulose
most abundant
biopolymer on
earth



0,7-2 kg
CO_{2e} per kg paper
produced

Regulation, Regulation, Regulation

EUROPEAN GREEN DEAL

Click on the title link to view the law



ENERGY TRANSPORTATION CLIMATE & EMISSIONS LAND & ANIMALS WATER CHEMICALS & POLLUTANTS **WASTE** PRODUCTS & MATERIALS CONSUMER GOODS REPORTING FUNDING & SUPPORT

Paperization

- Directive > Regulation
- (Single-Use) Packaging Minimization
- Recyclability Targets (for < 95% and > 5% content)
- Plastic Recycled Content
- Bans, Re-Use, Labeling etc.

**2026
PPWR**

Packaging Directive

no. 94/62/EG

[Meer over Nederlandse implementatie](#)

© CircuLaw

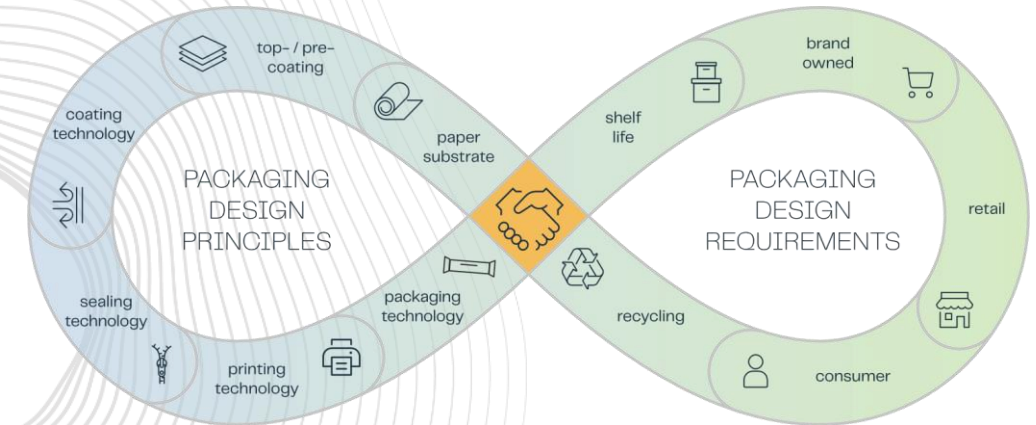
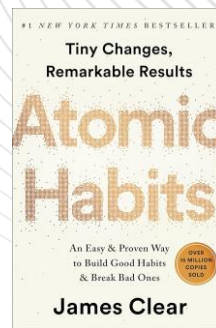
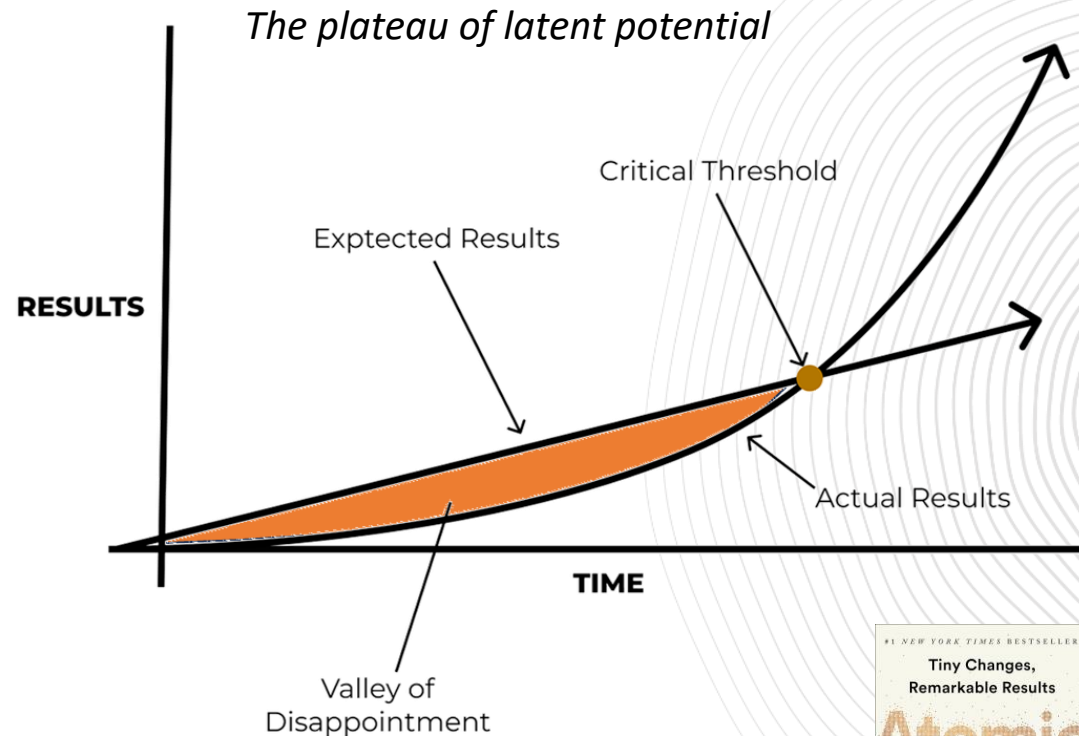


Other trends we see (besides regulation ;-)



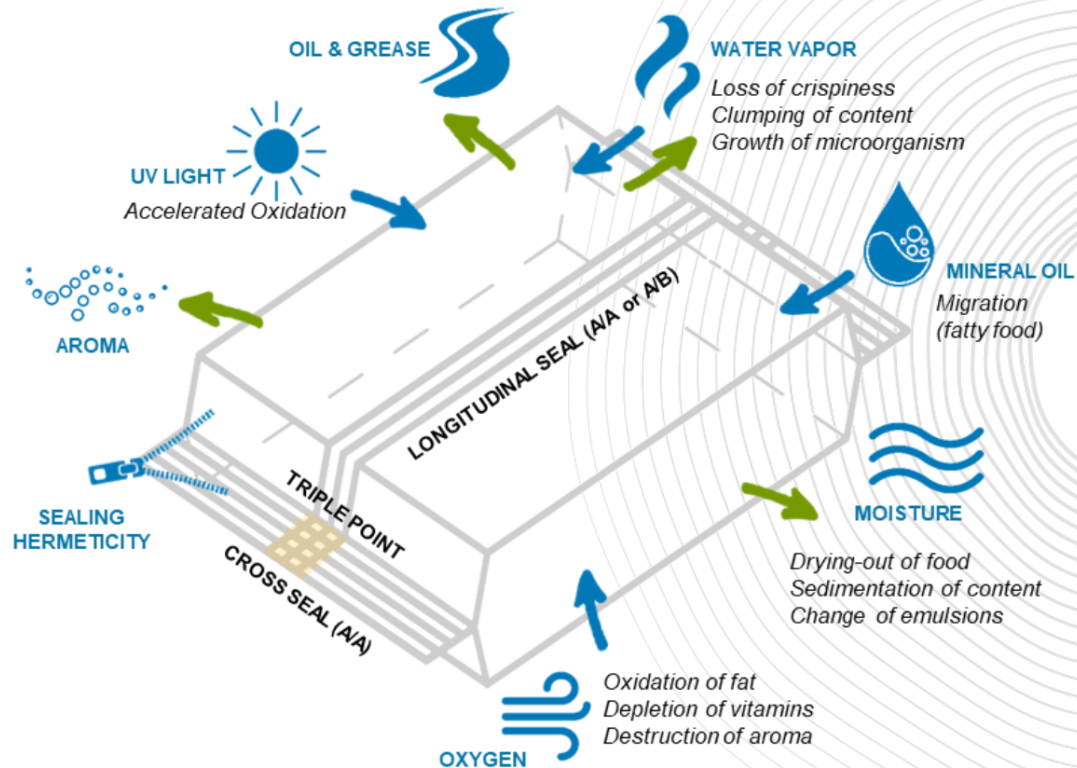
- Sustainable (lightweight & recyclable)
- Reduced complexity (mono)
- Convenient (on the go)
- Smart & Active (digitalization)
- Customized / modular
- E-commerce compatible
- Transparent biomaterials

Why many brands are still hesitant to change



- PPWR creates uncertainty (delegated acts etc.)!
- Packaging transformation is a marathon!
- Paper packaging is more than a material change!

And technical challenges we need to address



- Barriers against grease, water vapor, oxygen & gas, aroma, mineral oils etc.
- Hermetic sealing of different packaging designs
- Recyclability (CEPI etc.), fiber yield, compostability etc.
- Food contact compliance (FDA, BfR)
- Packaging & filling runnability at high speeds (HFFS, VFFS)
- Printability (gravure/flexo etc.)
- Supply chain fitness (puncture resistance etc.)
- Shelf life testing
- Cost of materials & production

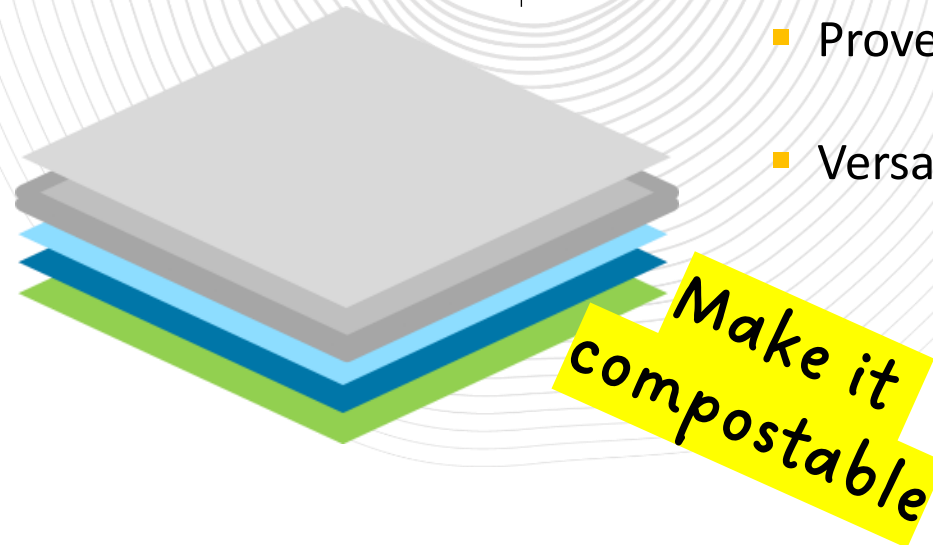
Can paper do the job on its own?

High sustainable paper

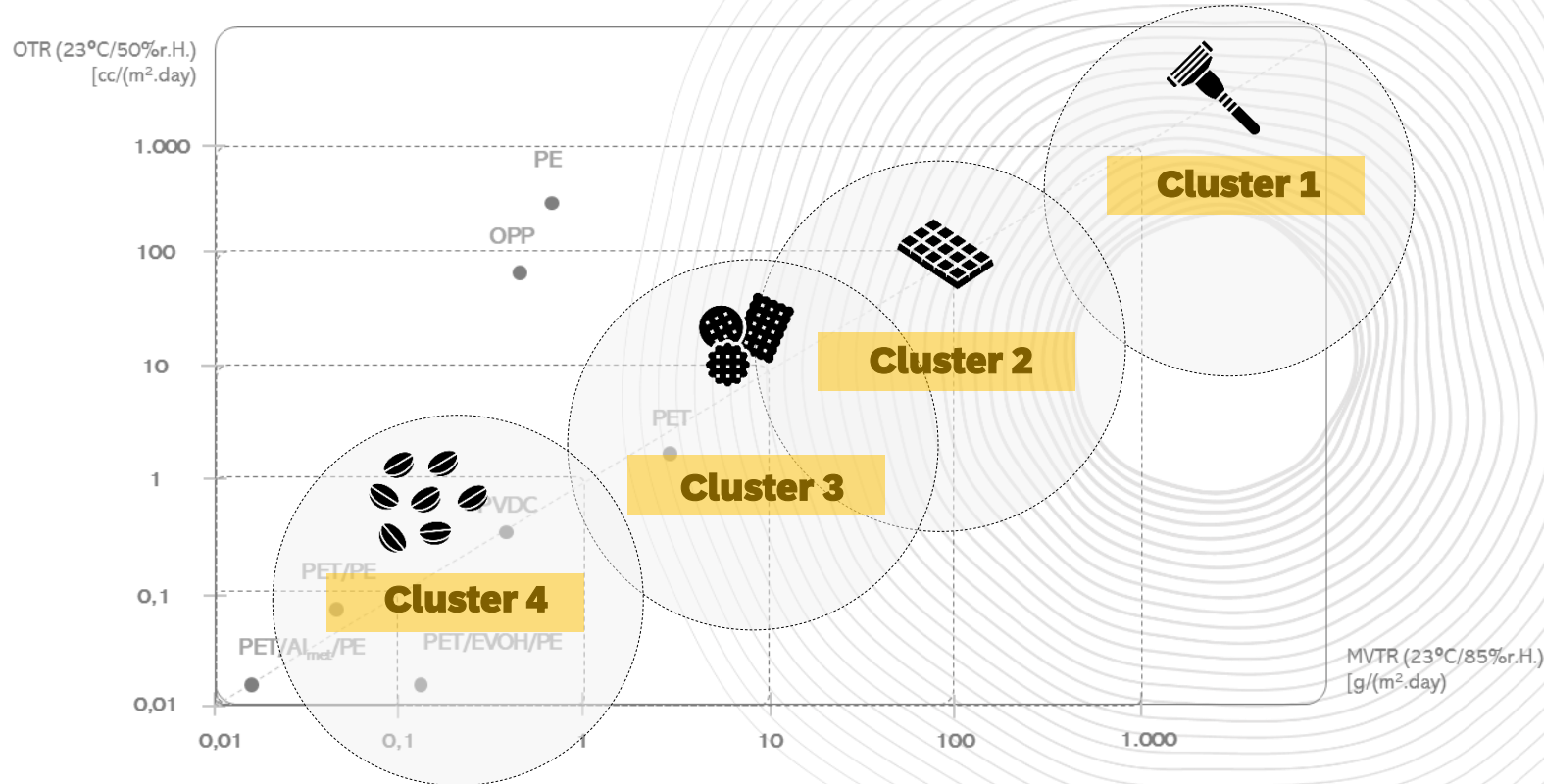
- Renewable source
- Excellent recyclable with high recycling rates
- Can receive recycled content easily
- Compostable etc.

High performance plastic

- Protective Barriers
- Transparent
- Lightweight
- Proven for Food Packaging
- Versatile & (still) cheap



Navigating the flexpac industry with clusters

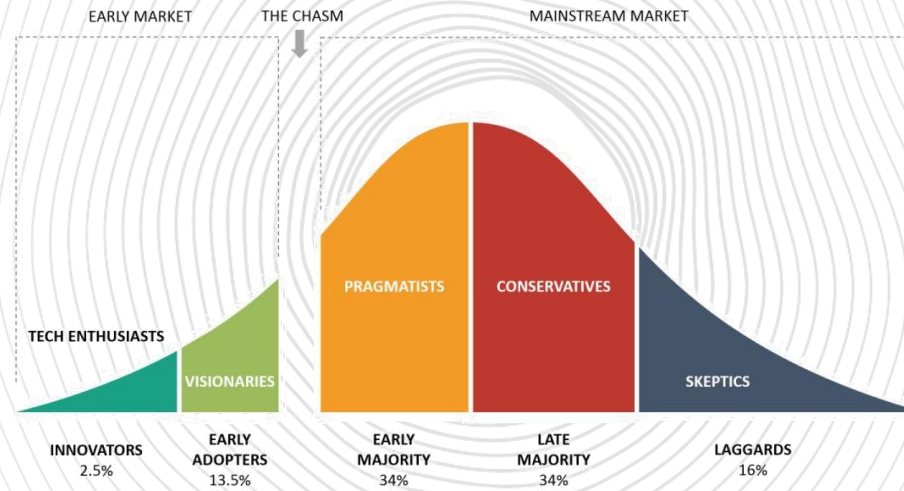
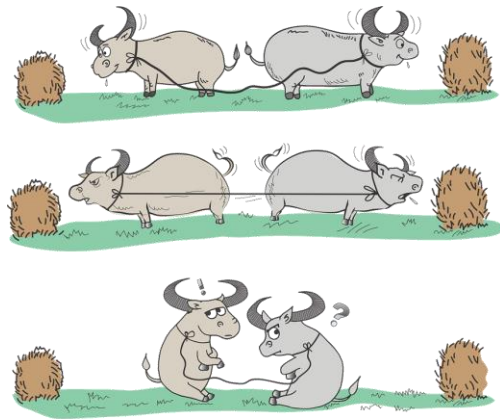


- **Cluster 1:** only sealing required, secondary food packaging, non-food packaging
- **Cluster 2:** primary packaging with good barrier requirements $<100 \text{ g/m}^2.\text{d}$ (23/85)
- **Cluster 3:** primary packaging with excellent barrier requirements $<10 \text{ g/m}^2.\text{d}$ (23/85),
- **Cluster 4:** primary packaging with ultra-high barrier requirements $<1 \text{ g/m}^2.\text{d}$ (23/85), MAP ready

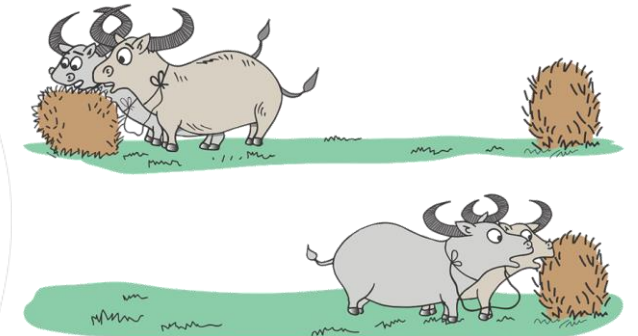
Overcoming the chasm with Co-opetition?



Fiber-based packaging business cases, images publicly available



© Geoffrey Moore – Crossing the chasm



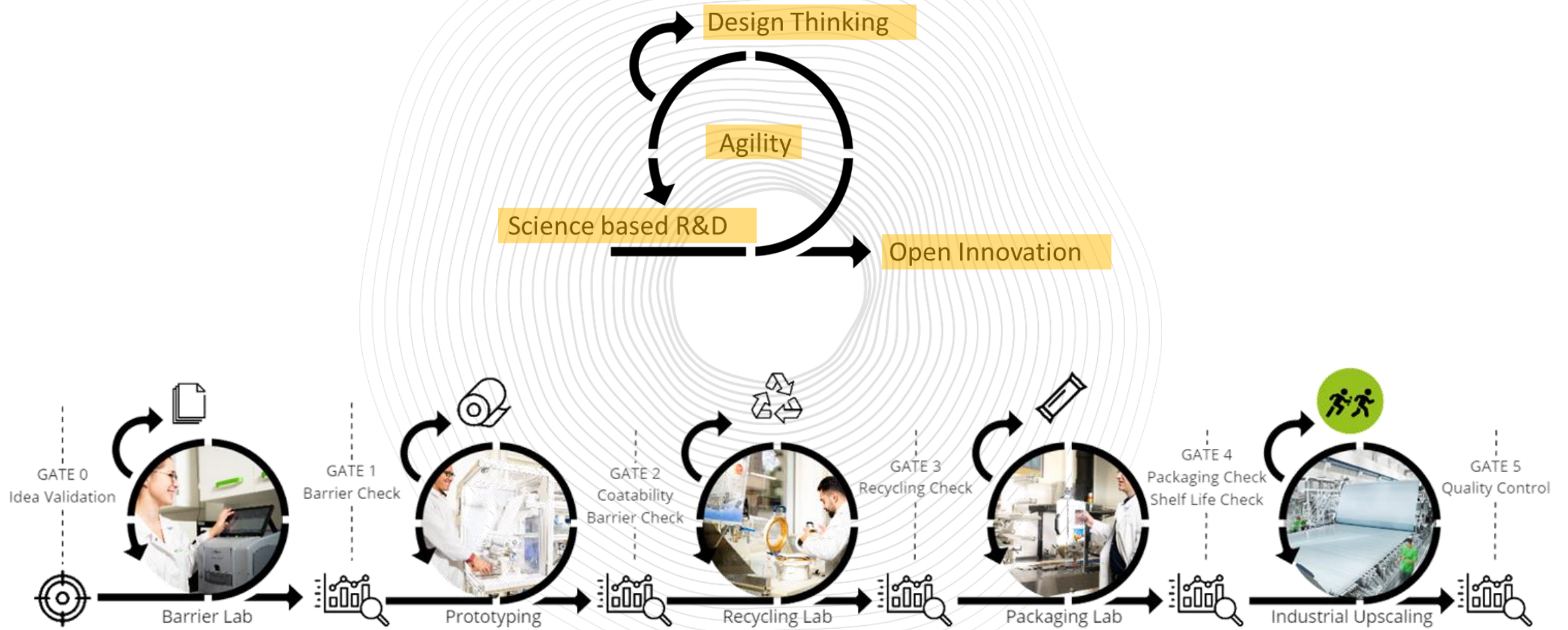
Fiber-based packaging business cases, images publicly available

The commodity trap in packaging

- Converters align material innovations with customer needs
- Are barrier papers an opportunity to escape the commodity trap?
- We need to build a **value proposition TOGETHER!**



DELSCI approach to escape the commodity trap



The future in flexible paper packaging

Herwig Kirchberger

Managing Director DELSCI

M: +43-664-88375438

E: herwig.kirchberger@delsci.com



FUNCTIONAL BARRIERS
FOR PAPER



RENEWABLE & RECYCLABLE
MATERIALS



DESIGNED FOR
EXCELLENT RUNNABILITY



PROTECTION AND SAFETY
OF PACKED GOODS



LIGHTWEIGHT DESIGN &
CONSTRUCTION



FULL-SCALE PRODUCTION
AT DELFORT