Challenging packaging

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1. Dairy: Ice cream cornets

Problem:

- Often paper/ alu / plastic which is not recyclable in the current infrastructure of sorting and recycling and not suited for paper cardboard stream.
- Alternatives in high barrier paper are probably not suited for paper cardboard stream due to presence of fatty food residues (oil, ice cream, chocolate).

2. Dairy: Butter wrappers

Problem:

- Paper/ alu / plastic is often used which is not recyclable in the current infrastructure of sorting and recycling.
- It is not suited for the paper cardboard stream as butter leaves fat residue.
- Deadfold is important

3. Dairy: Soft cheeses

Problem:

- Often paper/alu/plastic sometimes alu layer
- Not recyclable in the current infrastructure of sorting and recycling.
- The new packaging should be able to breathe, due to the 'sweating' of the cheese.

4. Dairy: Mozzarella with liquid

Problem:

- This is often an OPA/PE combination which is not recyclable in current sorting and recycling infrastructure.

5. Dairy: Grated cheese

Problem:

- This is often an OPA/PE, PET/PE-EVOH or similar material which is not recyclable in the current infrastructure of sorting and recycling.
- The product needs a medium gas barrier. The product is packaged under MAP light carbon dioxide gas to prevent blue mold.

6. Dairy: Heavier products such as a block of cheese

Problem:

- Too much stretching of PE bottom film during filling with heavy weight cheese if no PA is used.
- Multilayers like PET/PE or OPA/PE are not recyclable in the current infrastructure of sorting and recycling
- Technical solutions needed:
- PE mono material with enough strength that can run on the filling line.

7. Meat: Shrink bags for pieces of meat

Problem

- These are often PVC based structures or multimaterials like e.g. OPA/PE, PET/PE-EVOH or similar which are not recyclable in the current infrastructure of sorting and recycling.

8. Coffee: Ground and beans coffee

Problem:

- Often aluminium laminates (plastic/ alu/plastic) are used.
- Laminates containing a layer of aluminium (>1µm) are not recyclable in the current infrastructure of sorting and recycling.
- Also multi-material combinations like PET/PE or OPP/PETmet/PE are often used which are not futureproof and not recyclable in most of the current infrastructure of sorting and recycling
- Add-ons like a coffee valve can also contain non-recyclable elements.

9. Coffee: Ground coffee - Vacuum pack

Problem:

- Often aluminium laminates (plastic/ alu/plastic) are used.
- Laminates containing a layer of aluminium (>1µm) are not recyclable in the current infrastructure of sorting and recycling.

10. Bread: Multi-material fresh bake-off dough solution

- **Problem**
- Multi material solutions paper and aluminium (or for other products plastic with metal) are currently not recyclable, neither with paper nor with aluminium.

11. Sweets: Chocolate bars

Problem:

- Aluminium layer is PVC coated. PVC is not recyclable in the current infrastructure of sorting and recycling and it hinders the recycling of other materials when sorted wrongly. PVC disturbs incineration of residue
- Other combination of materials - for example paper/alu - will also not be recyclable.

12. Spices: Spice jars

Problem:

- Spice jars are a combination of glass/label/plastic cap. This is a combination which is not optimal recyclable. Heavy closure with grinder function. No re-use function.

13. Spices: Spice bags

Problem:

- PVC in packaging for spices
- PVC is not recyclable in the current infrastructure of sorting and recycling and it hinders the recycling of other materials when sorted wrongly
- PVC disturbs incineration of residu

Function:

- Recyclable barrier packaging without PVC

14. Food: Pizza packaging (warm and cold)

Problem:

- only clean paper/cardboard packaging is allowed in that stream because food residue will pollute the paper feedstock

15. Food: Aluminium seals

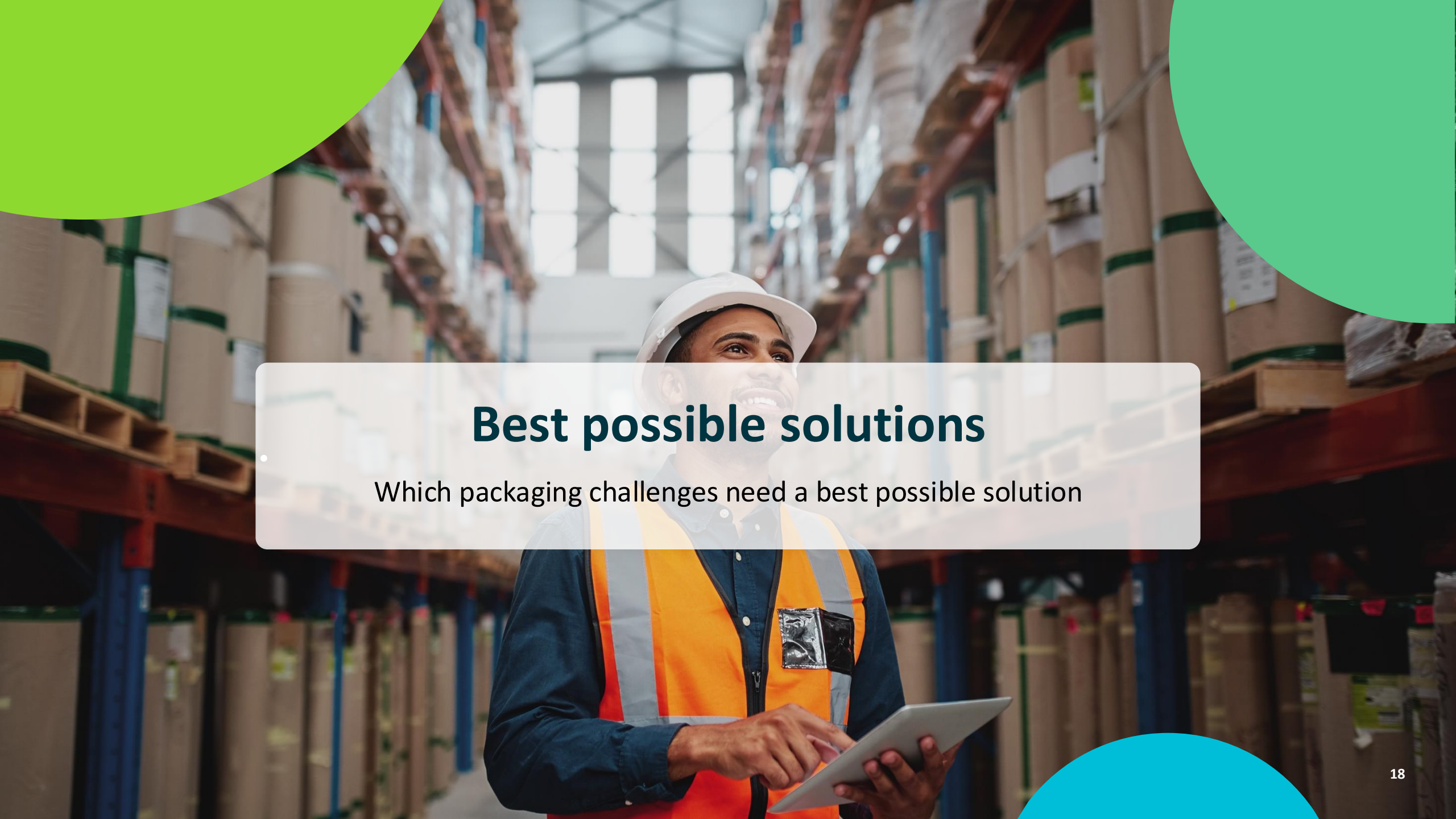
Problem:

- Aluminium seals that leave a residue of alu pieces on plastic pots/ glass pot. That can hamper recycling of the main material.

16. Non-food: Paper/ plastic blister combinations for tools, scissors, toys, home and personal care etc.

Problem:

- These contain often PVC/PET in combination with cardboard,
  - the fibers are lost and pollute plastic stream.
  - If it contains PVC it will hamper the recycling of the other plastics.



Best possible solutions

Which packaging challenges need a best possible solution

17. Processed Meat: Best possible tray lay-out

Problem:

- MAP (Modified Atmosphere Packaging) for processed meat often consist of limited or non-recyclable multimaterial combinations of PET, PE, PP, EVOH, PA which are often not recyclable in the current infrastructure of sorting and recycling

18. Fish: Best possible packaging for mussels

Problem:

- Mussels can be sharp and the film is therefore enhanced with PA. Film with high amount of PA is not ideally recyclable.

19. Food: Best possible solution for metal clips

Problem

- These are often multi-materials like e.g. OPA/PE, PET/PE-EVOH or similar which are not recyclable in the current infrastructure of sorting and recycling and they often have a metal clip which is not compatible with plastic recycling

20. Confectionary/ Drugstore: Best possible blisters for capsules

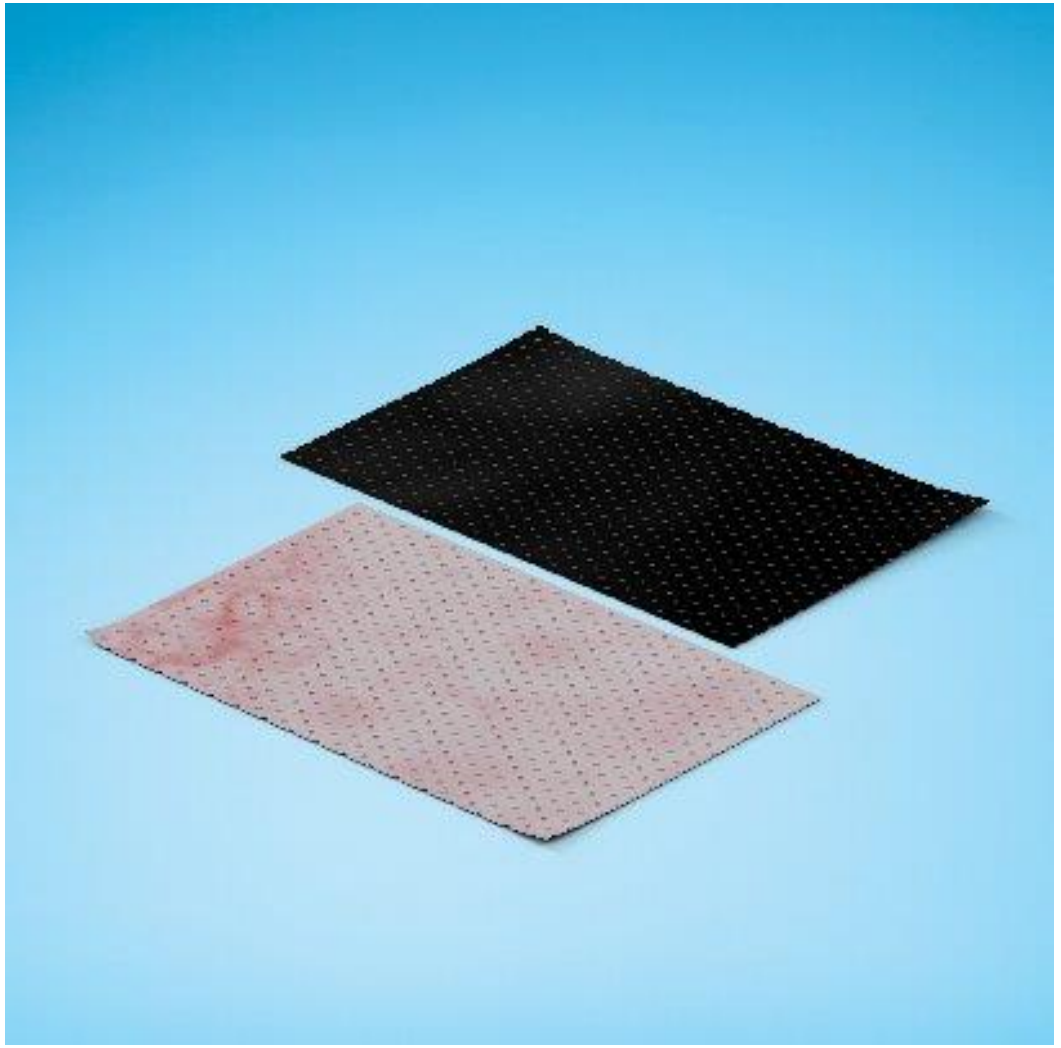
Problem:

- Blister packaging is often PVC based, we are looking for a solution that has a foil/film that is easy to push through in order to remove the medication or the sweets, but strong enough to protect against accidental opening or puncturing.
- PVC is not recyclable in the current infrastructure of sorting and recycling and it hinders the recycling of other materials when sorted wrongly
- PVC disturbs incineration of residue

21. Meat: Absorber in a PET tray

Problem:

- Absorbent pads are usually made of different polymers and are not recyclable in the current infrastructure of sorting and recycling.
- Absorbent pads contain food residues and are moist after use. Fibre-based versions are therefore not suitable for recycling into the paper cardboard stream.



22. White HDPE with black layer

Problem:

- Packaging contains a combination of materials and colours. White HDPE and black innerlayer that leads to discolouring. Sometimes rubber is used – which leads to a non-recyclable material.

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Grondstof van morgen