



ELOPAK

**Innovation possibilities seen through Elopak
eyes**

Kirsten Moe

Manager Material Science

Who is Elopak?



Elopak is a leading international player in liquid food packaging
We focus on developing packaging solutions for

- healthy nutrition
- sustainable environment
- consumer preferred packaging systems

| | |
|--------------------------------|---------------------------|
| Ownership: | privately owned by FERD |
| Net sales revenue: | 5.8 Mio NOK / 2008 |
| Number of employees | 3000 incl. joint ventures |
| Number of manufacturing units: | 15 |

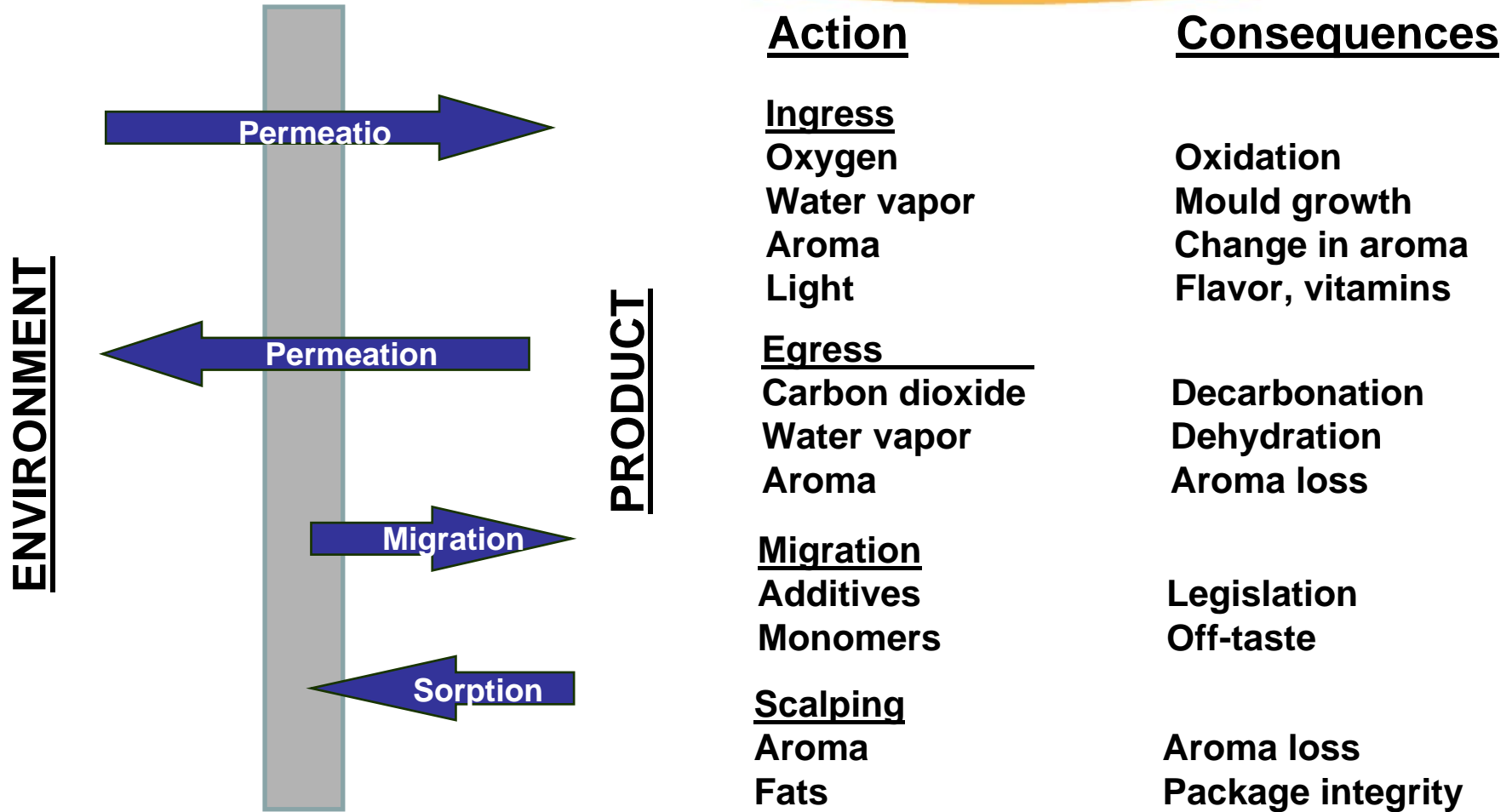
Elopak Supplies Complete Packaging Systems Solutions



Competence



What is needed to protect food?



What are the future properties within packaging?

- Visual properties
 - Appealing shape of package
 - Print quality
 - Faster design changes
- Product properties
 - Shelf life of product to be extended
 - Taste and smell
 - Price
 - Functional food
- Use properties
 - Easy opening and closing functions
 - Good grip and pouring properties
 - Cooking functionality
 - Special needs friendly use properties
 - On the go
- Storage properties
 - Freezing, cold chain, ambient
- Environmental properties
 - Recycling
 - Biodegradable
 - Carbon foot print
 - Renewable resources
 - Further reductions of packaging weights
- Shopping properties
 - Intelligent packaging (RFID)



Example: Trend for Barrier Properties

- Today: Oxygen barrier from
 - Multilayer structures of petro-based polymers
 - Aluminum
- Trend: Replacement by addition of
 - Nanofillers from inorganic materials, e.g. particles dissolved in matrix
 - Nanomaterials from renewable resources e.g. microfibrillar cellulose
- Evaluation
 - Carbon foot print ?
 - Renewable resources -
- Evaluation
 - Carbon foot print ?
 - Renewable resources +
 - Biodegradable +

Challenges

- Food safety concerns
- Indistinctness of regulations regarding nanomaterials in general
- Labeling demand in discussion
- Adding cost

Conclusion : Innovation possibilities

Many research activities within food packaging
Need to be adapted to industry needs:

Ensure food safety

Suitability for filling machines of today

Suitability for extrusion coating

List of literature

Brody et al: Innovative Food Packaging Solutions, Journal of food science, Vol. 73, Nr. 8, 2008

Lange, Wyser: Recent innovations in Barrier technologies for Plastic Packaging.

Packaging Technology and Science. 2003, 16, 149-158

Food & Drink Technology: "Biodegradable or biocompostable?", November 2008

Toni Tarver : "Novel ideas in food packaging", Food Technology, October 2008

Friends of the Earth: Out of the laboratory and on to our plates. March 2008

