

# WP6, Task 6.6.1: Perception of consumers and retailers.

Friburgo | 11/04/2019



## BIOSMART

BIOMATERIALS FOR SMART FOOD PACKAGING

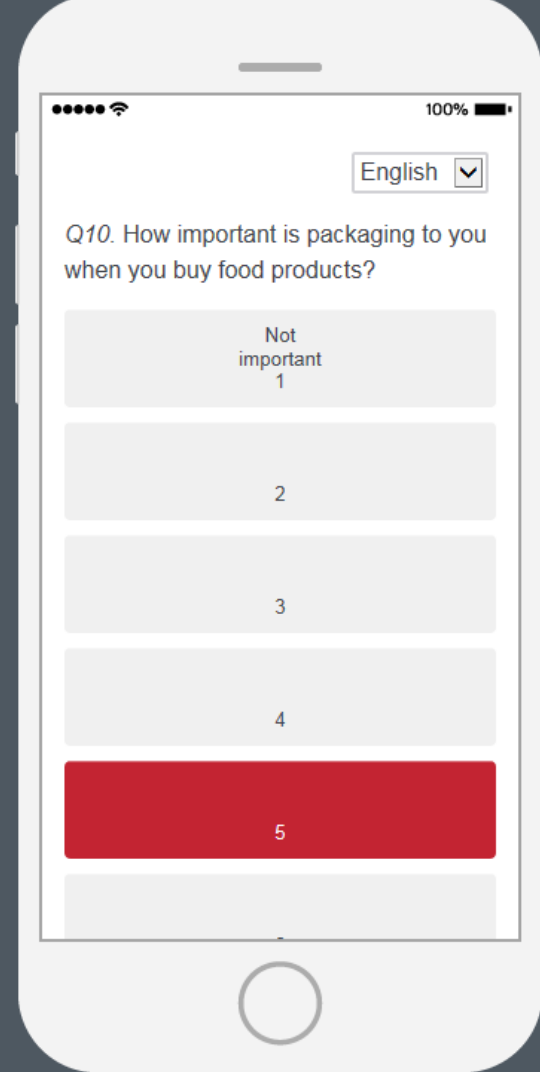


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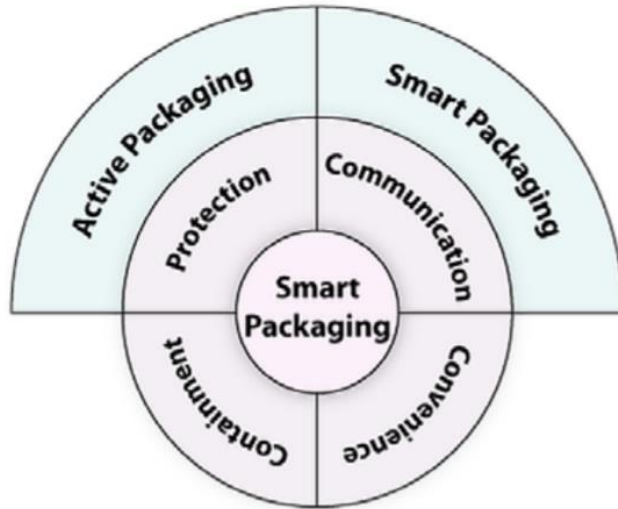


# Objective

- To uncover the level of environmental concern/engagement regarding packaging and packaging materials, perception of risks and benefits with new packaging technology. attitudes and beliefs held by consumers.
- 2000 European consumers from UK, Sweden, Germany and Spain will answer a survey on active and intelligent packaging
- The goal of the research is to understand differences across Europe in order to help the project in designing products and communication about smart packaging
- To identify market segments and consumer drivers that can foster more sustainable packaging development and implementation.



# Model of packaging function



STORAGE  
& TRANSPORT

PROTECTION

CONVENIENCE

COMMUNICATION

SUSTAINABLE

ECONOMIC

Application of Internet of Things in food packaging and transportation - Scientific Figure on ResearchGate. Available from: [https://www.researchgate.net/figure/Model-of-packaging-functions-see-online-version-for-colours\\_fig1\\_296486930](https://www.researchgate.net/figure/Model-of-packaging-functions-see-online-version-for-colours_fig1_296486930) [accessed 11 Apr, 2019]

## Members of Cost Network: ActInPack

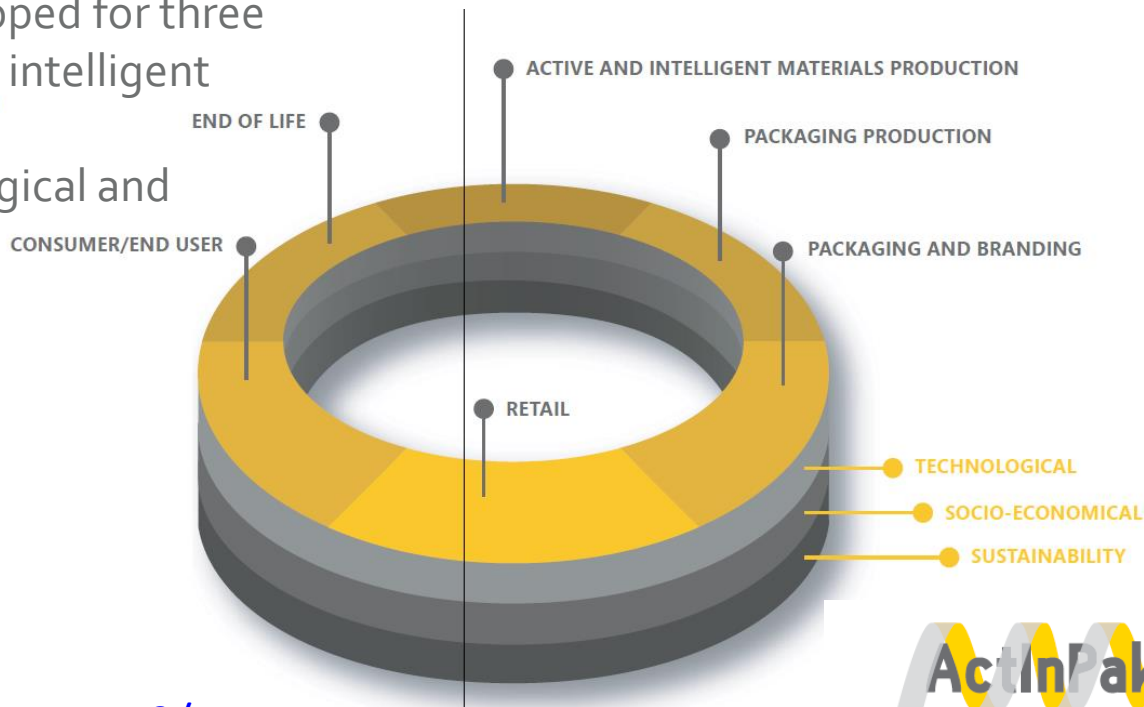
Objective: to develop a knowledge-based network on sustainable, active and intelligent fibre-based packaging

- 43 countries
- 209 academic institutions
- 35 technical centres, and
- 83 industrial partners

[www.actinpack.eu](http://www.actinpack.eu)

# ActInPack Roadmap: Drivers and barriers in the packaging value chain

Roadmaps have been developed for three different levels of active and intelligent packaging development: Socio-economical, Technological and Sustainability.



<https://www.actinpak.eu/roadmap-wg2/>

## Retailer

- Awareness
  - Possibilities unknown/unclear
  - Benefits unclear/unknown
- Cost versus revenues
  - WTP uncertain
  - ROI uncertain
  - Indicators might cause product losses
- Transparency
  - Desire to control the freshness without showing the consumer
- Trust in technology
  - Fear of failure – affect reputation
- Reliability
  - Unknown who is liable
- Legislation
  - Complex & unclear matter

## Consumer

- Awareness
    - Unknown makes suspicious
    - Possibilities unclear
    - Benefits unclear
  - Cost versus revenues
    - WTP uncertain
  - Trust in technology
    - Safety and health doubted
    - Blind faith in technology vs senses
- Transparency
    - Visibility versus invisible technology/info
  - Perception
    - Freshness perception vs extended shelf life
    - Active parts considered "additives"=undesired
  - Communication
    - Different consumer groups have different concerns

Public acceptance of food products which incorporate or utilize nanono materials will be predicated largely on how much trust the public has in industry and the government to protect them from unknown hazards, To that end, openness on industry's part regarding what they're doing and why they're doing it will go a long way toward assuaging public fears about nano-food products.

Unfortunately, an editorial article published in the journal Nature Nanotechnology recently asserted that “up to 400 companies around the world are researching possible applications of nanotechnology food and food packaging – and many of them do not want their customers to know this” .

This is exactly the type of behavior which may bring about the public reaction which [industry] is trying to avert.”

Duncan 2015



# Market drivers

- Sustainable goes mainstream
- Gen-Z
- Changing consumer needs
- Engagement
- Hi-tech
- Adversity

**Sustainable goes mainstream** · Consumers become more aware of the environmental cost of modern conveniences like one-time use packaging · Driven by convenience, cost, availability (most consumers)

**Gen-Z** This generation (1995-2018) are considered digital natives and are now getting jobs and income creating a new market and generation of consumer

**Changing consumer needs** · Different consumer needs of gen-X and gen-Z · Early adopters of AIP technologies · Ageing population needs

**Engagement** · Micro-influencers · Videos · Social media = transparency, always connected

**Activism:** food waste prevention, health and nutrition sustainability

**Hi-tech** · Consumers embrace virtual entertainment industry, now trend moves on to other areas

**Adversity** · There will always be consumers against technology

Key Performance Topic	Requirements	Specifics
Food quality	<ul style="list-style-type: none"> <li>Enhance <b>sensory</b> properties</li> <li><b>Food grade</b> approved <b>antimicrobials</b></li> </ul>	<ul style="list-style-type: none"> <li><b>Smell</b>, Color, ..</li> <li>Avoid <b>unwanted micro-organism growth</b> (bacteria, fungi, yeasts) – additional pasteurization and sterilization is possible but adds cost</li> </ul>
Manufacturing	<ul style="list-style-type: none"> <li>Simple, <b>economic packaging processing</b></li> <li>Filling compatibility</li> </ul>	<ul style="list-style-type: none"> <li>Adequate <b>properties</b> (sensory, mechanical, barrier)</li> <li><b>Durability</b> (scratch, ageing, abrasion, impact, tribobioageing)</li> <li><b>Compatibility</b> with existing machines, run-ability, dimensional stability, sealing- ability.</li> </ul>
Logistical	<ul style="list-style-type: none"> <li>Ease transportation</li> </ul>	<ul style="list-style-type: none"> <li>Conform requirements of <b>bulk packaging &amp; coding</b></li> </ul>
Marketing	<ul style="list-style-type: none"> <li>Point of sale appeal</li> <li><b>Consumer comfort</b></li> </ul>	<ul style="list-style-type: none"> <li>Aesthetically pleasant, conform to customer appeal, <b>easy handling</b> and <b>functionality</b></li> </ul>
Environmental	<ul style="list-style-type: none"> <li><b>Human safety</b> ensured</li> <li>Minimize resource's use</li> <li>Facilitate <b>waste</b> management</li> </ul>	<ul style="list-style-type: none"> <li>Food contact <b>safety</b>, not causing physical harm</li> <li>Biodegradability, <b>non-eco-toxic</b></li> <li><b>Positive LCA</b> (low carbon foot print)</li> <li><b>Recoverable</b>, re-processable, <b>compostable</b></li> </ul>
Legislative	<ul style="list-style-type: none"> <li>EU and National <b>laws</b></li> </ul>	<ul style="list-style-type: none"> <li>Meet all criteria</li> </ul>
Financial	<ul style="list-style-type: none"> <li>Cost effective</li> </ul>	<ul style="list-style-type: none"> <li><b>Acceptable price</b> in relation to consumer value</li> </ul>



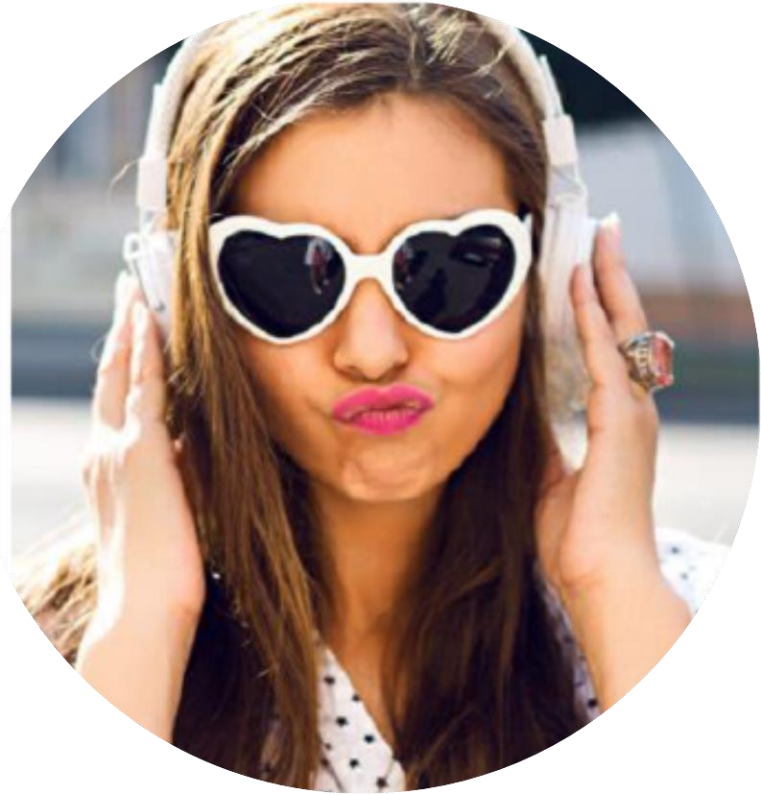
# WORKSHOP PERSONAS

What do we need to know about them in  
order to promote acceptance of A&I  
packaging



# John 32

Marketing manager.  
Interested in cooking  
and good quality food.  
Sees large opportunities  
with new technologies



## Zara 22

Blogger with a passion for fashion. Interested in technology and wants to know everything about the latest stuff. Makes unboxing videos of everything she buys



# Daniel 35

Environmentally  
conscious graphic  
designer, living in an  
down town apartment.  
Likes to recycle



# Maria 85

- Retired nurse. Active and energetic still but do not eat as large meals as before. Products sometimes stays too long in the fridge and get spoiled.





## What do we need to know about Zara

- What is "X:s" concerns?
- Trust in technology?
- Perception?
- Way of Communication?
- Willingness to pay

**THANK YOU**



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