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DEUTSCHE ZUSAMMENARBEIT



MINISTRY OF KNOWLEDGE
ECONOMY, STARTUPS
AND MICRO-ENTERPRISES

Implemented by:



Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH

DEVELOPMENT OF AGROBUSINESS INNOVATION IN ALGERIA « InnovAgro »

THE AGRITECH BUSINESS OPPORTUNITIES IN ALGERIA

SmartPack

Connected and biochemical packaging for an enriched consumer experience.

IDEA
N°17B



TYPE OF OPPORTUNITY: **Internet of Things (IoT) technology and biochemistry - "Active" and intelligent packaging.**

*Related to other sheets

CHALLENGE:

Consumers lack reliable and dynamic information about the quality and freshness of the products they buy, which leads to food waste, dissatisfaction and a lack of confidence in the players in the agri-food chain. What's more, distributors are struggling to differentiate themselves in a competitive market.

IMPACT ON THE VALUE CHAIN:

Upstream : Reducing food waste through better stock management and optimal product preservation.

Downstream : Greater transparency for consumers, offering a better buying experience and strengthening their loyalty to brands and distributors.

SOLUTION:

- **Advanced biochemical indicators :** Labels or other means incorporated into packaging that react to product quality via colour changes.
- **Connected IoT sensors :** real-time monitoring of parameters such as temperature, humidity and CO₂, accessible via an app.
- **Innovative consumer interface :** Mobile application and augmented reality (AR) providing detailed quality information and consumption suggestions.
- **Optimised supply chain :** integrating sensor data to improve logistics flows and stock management.

BENEFITS OR EXPECTED IMPACT

01 For industry :

- **Enhancing innovation :** Improving brand image thanks to a modern, sustainable technological solution.
- **Reducing losses :** Optimisation of storage and transport cycles.
- **Premium positioning :** Access to high added-value markets.

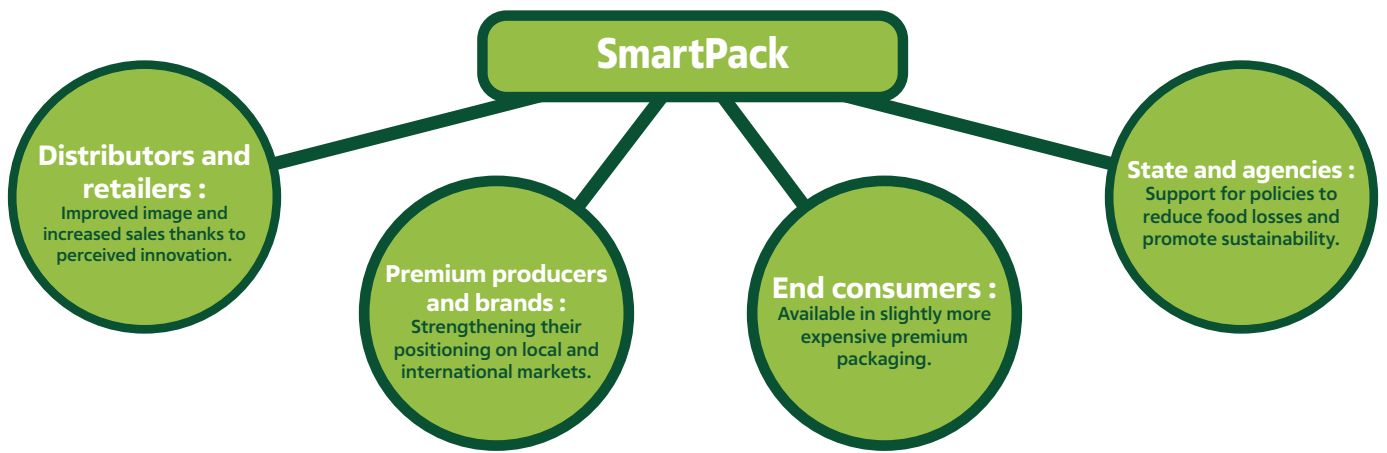
02 For consumers :

- **Increased confidence :** Transparency about product quality and freshness.
- **Enhanced user experience :** access to personalised information via an intuitive application.
- **Reducing food waste :** better planned consumption thanks to (intelligent) alerts and signals.

SOLUTION COMPONENTS

- **Biochemical and IoT technology :** Intelligent biochemical labels or indicators combining sensors and visual indicators to increase shelf-life
- **Intuitive mobile application :** real-time notifications on product lifespan and advice on use.
- **Integrated traceability system :** Blockchain to secure data and enhance transparency throughout the supply chain.
- **Interactive marketing support :** Augmented reality to improve the attractiveness of products on the shelf.

WHO WILL PAY FOR THIS SERVICE OR PRODUCT ?



SUCCESS STORIES

Keep-It Technologies

Intelligent temperature labels for food products.

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Insignia Technologies

offers smart labels and innovative printing solutions designed to indicate product quality and freshness. Their patented smart pigments change colour in response to variations in CO₂ or temperature, providing consumers and businesses with visual indications of food freshness, helping to reduce food waste.

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Freshinset

offers innovative solutions for managing the freshness of food products using integrated biochemical indicators. These indicators, placed in packaging, monitor product quality and conditions in real time, enabling consumers and distributors to know immediately whether a product is still

fresh or needs to be consumed quickly. Freshinset is helping to reduce food waste while boosting user confidence in the food supply chain.

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Augmented reality

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PROCESS FOR REALISING THE OPPORTUNITY

PHASE 1:

Prototyping : Development of labels or other biochemical components and IoT sensors

PHASE 2:

Technological integration : Creation of a mobile application and pilot tests.

PHASE 3:

Market launch : Working with key partners in the agri-food sector.

PHASE 4:

Follow-up and adjustments : Analysis of feedback to improve the product.

COMPLEXITY



LEVEL OF INVESTMENT NEEDED



Here are some opportunities that you might be interested in related to yours – Scan QR code

integrated into
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