Sustainability Index

PACKALL

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Problem analysis

If the end of life of plastic is not managed well it is extremely polluting and has a negative impact on the environment. The packaging value chain needs a profound transformation in view of the objectives of the 2030 Agenda.

Objective

PACKALL

Challenge TEAM i_2

Industry Mentor: PROPLAST
Academy Mentor: University of Salerno

What is the best strategy to increase the amount of plastic collection and recyclability ?

Challenge Motivation

EU proposals aim to boost recycling targets, create jobs in the green industries and tackle food waste in order to transform the current linear economy into a circular economy and promote sustainable growth.
Among the stated goals: increased packaging recycling (60% by 2020, 70% by 2025, 80% by 2030). Other stated targets include 90% recycling for paper and 60% for packaging made of plastic by 2025 as well as 80% for packaging made of wood by 2030.

Expected outcomes

Create a new model for recycling with the aim to facilitate consumer attitude to recycling and help the waste management system to reach the 2030 objectives

Co-funded by the Erasmus+ Programme of the European Union

Reduce the production of waste through prevention, reduction, recycling and reuse;

Encourage industries to adopt sustainable practices and integrate sustainability information into their packaging;

Involve consumers in initiatives to raise awareness and sustainable lifestyles, offering them adequate information on standards and labels.

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

Benefits (Optimist hat)

- Performig properties: light weight, increase in shelf life, versatile, flexible, strong, moldable, resistant.
- Plastic is RECYCLABLE! Fight pollution, limit the landfills
- Plastic prevents food contamination and reduces food wastes
- Flexible packagings are easier to transport and have a lower environmental impact
- Recycling plastics creates new jobs
- Plastic allows for better communication (labels, design)
- Some additives help to increase the percentage of recycled content and improve the properties of the recycled plastic
- Plastic is cheaper than other materials
- Some plastics can also be subjected to pasteurization and sterilization processes
- Presence of consortia in Italy that facilitate material flows

Problems/impediments/risks (Pessimist hat)

Technical limits
- Recycled plastic has lower properties than virgin plastic
- Limits of coloring in recycled plastics
- Often unpleasant smell from recycled plastic
- Additives endocrine elements, plastics cannot be used in contact with food
- Most of the recycling processes are downcycling

Industries
- Improve stakeholder engagement
- Problem management of emissions throughout the life cycle
- Too much non-recyclable plastic is used
- Reduce the amount of plastic used in products
- Most of the plastic comes from non-renewable sources
- Little prevention and collaboration between industries
- Improving the exchange of resources between industries
- Single use plastic

Recycling plants
- Ecological transition requires a difficult rearrangement of industrial sites
- Some plastics are not recyclable (no ad hoc processes)
- Presence of obsolete plants in Italy
- Optimize production and recycling cycles.
- Plastics with dark colors cannot be separated from existing equipment, requiring staff
- Too small objects cannot be detected in the separation phase
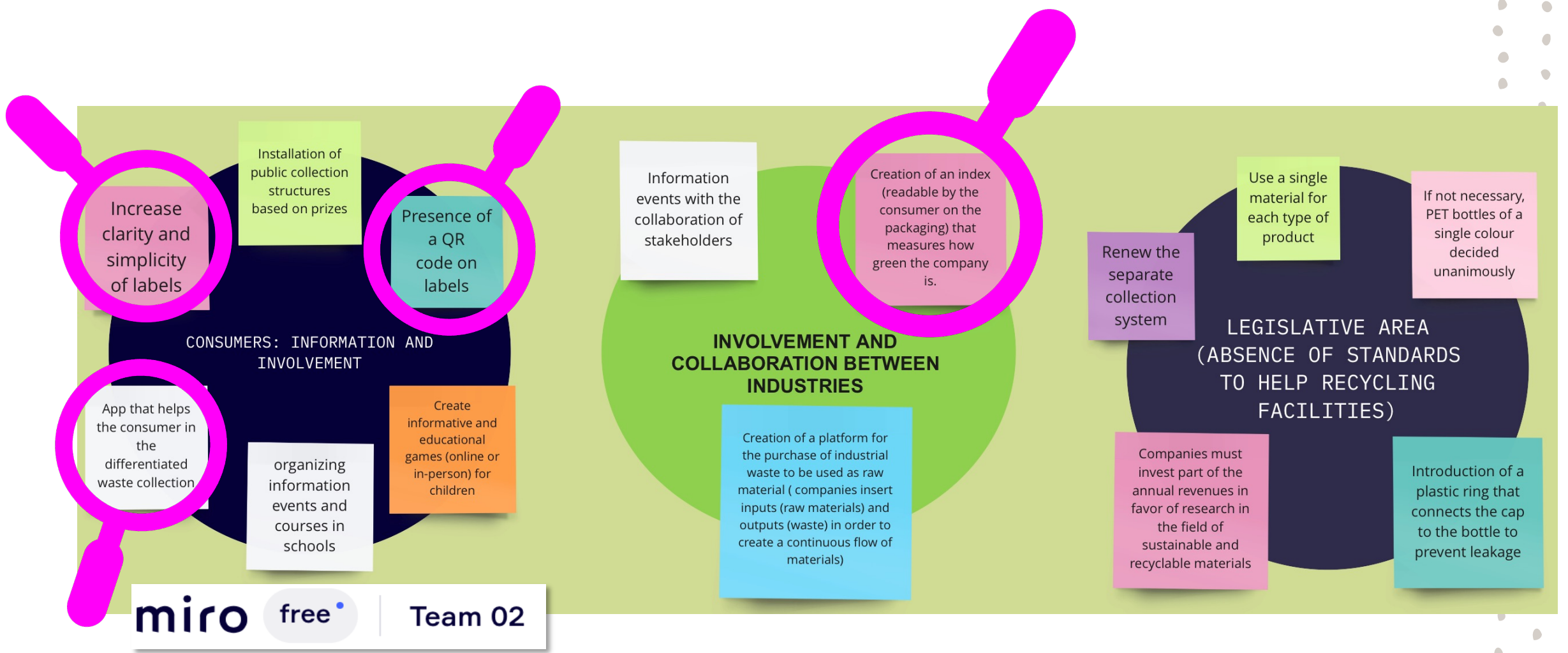- Few plants for the treatment of plastic waste

Consumers
- Consumer perception that recycled plastic is of poor quality
- Improper disposal of plastic harms the environment and our health
- Biodegradable and compostable plastic in most cases ends up in landfills
- Unclear labels and no disposal instructions
- Misinformation regarding waste to be disposed of in plastic
- Improperly washed packaging can generate the presence of animals in search of food
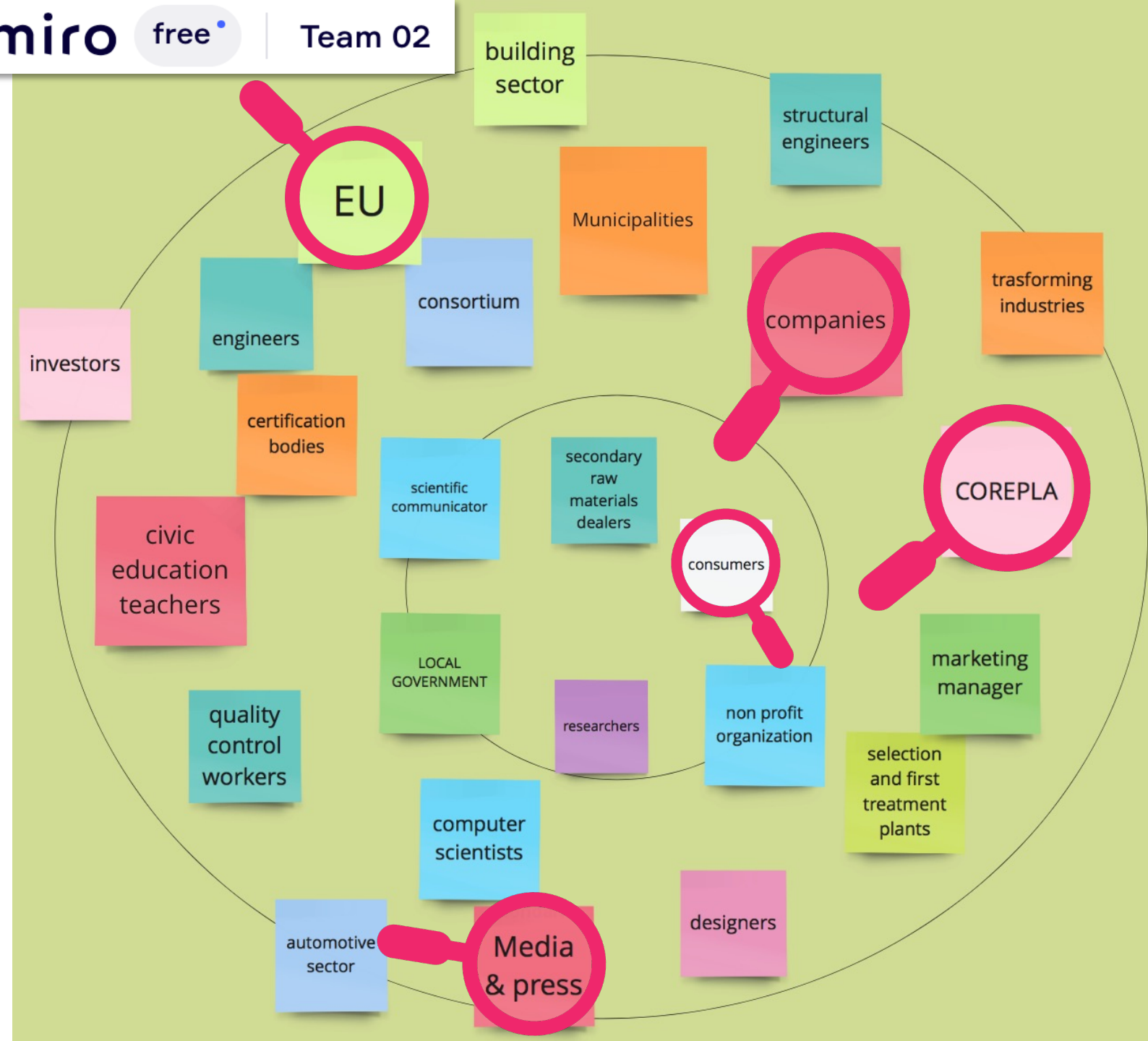
Legislative level
- Lack of updated standards
- Improve the tools available for monitoring recycling and impacts -> clear and frequently updated data
- Lack of harmonization between municipalities for separate collection
- Few economic incentives in the collection of plastic
- Lack of technical support in local administrations
- Presence of bins that disfigure the landscape of the city
- Inefficient tracking of resources and waste
- Changing the separate collection system

STEP 1: Start at the end

CONSUMERS: INFORMATION AND INVOLVEMENT

- Increase clarity and simplicity of labels
- Installation of public collection structures based on prizes
- Presence of a QR code on labels
- App that helps the consumer in the differentiated waste collection
- organizing information events and courses in schools
- Create informative and educational games (online or in-person) for children

INVOLVEMENT AND COLLABORATION BETWEEN INDUSTRIES

- Information events with the collaboration of stakeholders
- Creation of an index (readable by the consumer on the packaging) that measures how green the company is.
- Creation of a platform for the purchase of industrial waste to be used as raw material (companies insert inputs (raw materials) and outputs (waste) in order to create a continuous flow of materials)

LEGISLATIVE AREA (ABSENCE OF STANDARDS TO HELP RECYCLING FACILITIES)

- Renew the separate collection system
- Use a single material for each type of product
- If not necessary, PET bottles of a single colour decided unanimously
- Companies must invest part of the annual revenues in favor of research in the field of sustainable and recyclable materials
- Introduction of a plastic ring that connects the cap to the bottle to prevent leakage

miro free | Team 02

STEP 2: How might we?

STEP 3:
Stakeholders

STEP 4: Pick a target

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Target group 1: Consumers

clear and simple labels

easy to recycle and to sort packaging

they want to be encouraged and helped to recycle and to be more involved in the circular economy system

they want a ready-to-use, quality and safe packaging

Helped in making conscious choices

they want to save money and get rewards for waste placed in public collection facilities

they want to find a greater variety of sustainable and affordable products on the market

Target group 2: Plastic industries

they want to save on raw materials, taxes and waste disposal

they want to reduce energy consumption

Reduce waste and disposal costs, identifying companies wishing to buy them for their processes

they want to obtain recognition, benefits and certifications for sustainability, in order to attract consumers

be able to collaborate efficiently and effectively with other companies

IDEA: Creation of the Sustainability index

Color scale for assessing the sustanability of industries and their packagings

SUSTAINABILITY INDEX

High sustainability

Medium sustainability

Low sustainability

Unsustainability

SUSTAINABILITY INDEX
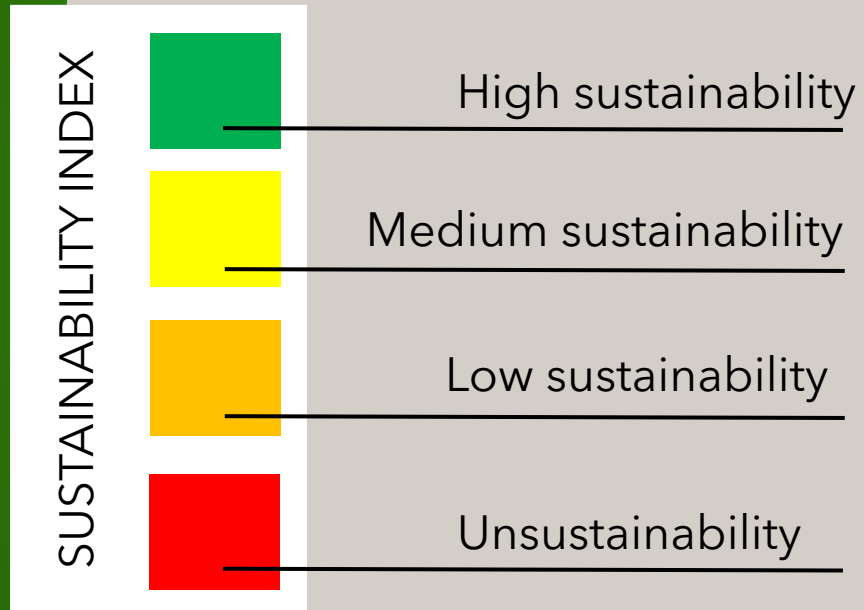
INDICES for the assignement of the color corresponding to the packaging

- **ORIGIN OF RAW MATERIALS**: percentage of recycled plastic, presence of bioplastic. Please note: the product must comply with the minimum standards for food preservation;
- **NUMBER OF DIFFERENT MATERIALS** in the packaging: monolayers or multilayers;
- **CLOSED LOOP** or **OPEN LOOP**;
- Possibility of **COMPOSTING**;
- Possibility of **DISPERSION** of the packaging;
- Quantity of **WASTE** produced;
- **EMISSIONS GENERATED** during the packaging production process;
- Share of **RENEWABLE ENERGY** used during the creation of the packaging.

The labeling system will have to be implemented through a **EUROPEAN REGULATION**, which must involve all the European packaging industries.

IDEA: Creation of Scan&Save APP

To increase **CONSUMER ENGAGEMENT**, the app allows to scan a **QR code** inside the packaging and provides information on correct disposal and the production process.

Furthermore, for each code scanned, the consumer earns points according to the color assigned to the packaging.

SUSTAINABILITY INDEX

6 POINTS

3 POINTS

2 POINTS

1 POINT

SAVE MONEY

SAVE THE PLANET
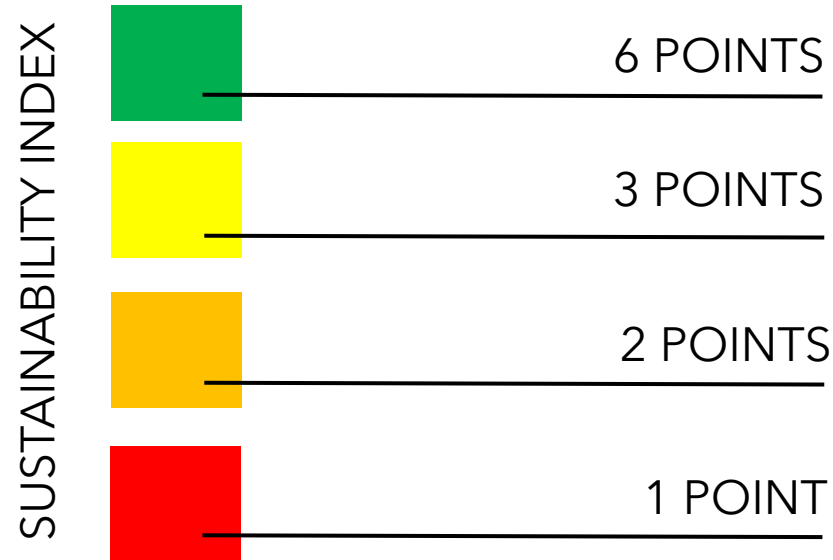
App prototype

Welcome to
Scan&Save

Consumer

Industry

Allow Scan&Save
to access the location
of this device?

I agree

I disagree

Allow Scan & Save
to access the camera
to take photos?

I agree

I disagree

SIGN IN:

Name:

Surname:

Email:

Username:

Profile type:

Password:

Consumer profile

CONSUMER:
MARIO ROSSI

You have earned 45 points. There are still 5 left to redeem your prize!

Search Product 🔍

Search Company 🔍

Discount 🏷️

The "search product" function allows the consumer to search for specific products and returns the list of all registered products, in descending order of sustainability

Scan the QR Code and differentiate according to your municipality

You are in **Salerno** and the scanned packaging must be placed in plastic.

Remember to remove the label and flatten the side surface of the bottle

The app must have access to all the regulations for separate waste collection f or each municipality (Corepla database)

The chosen packaging saves CO_2 and is made up of 70% recycled plastic. Thanks to this packaging you earn 6 points. You still have 100 points left and you can redeem your first discount. Keep it up!

Industry profile

INDUSTRY: PACKAGING PRODUCER

Your company has 9 products with a green sticker, 3 with a yellow sticker and 1 with an orange sticker

Add Product +

Edit Product ✏

- Each company must carry out, for every new product, a **SELF-ASSESSMENT:** fill-in a questionnaire on the app, drawn up by the European Union, based on the list of indices. Based on the result of the questionnaire, the app attributes the color to the packaging and generates the associated QR code;
- the app also provides a **RANKING OF ALL REGISTERED COMPANIES**, based on an average weighted on the score of each colored sticker and on the size of the industry;
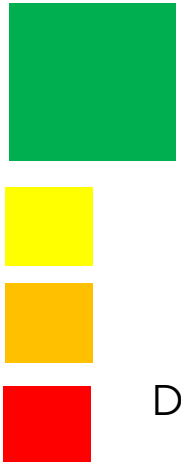
Labels Prototype

EXTERNAL LABEL:

SUSTAINABILITY INDEX

PRODUCT LOGO

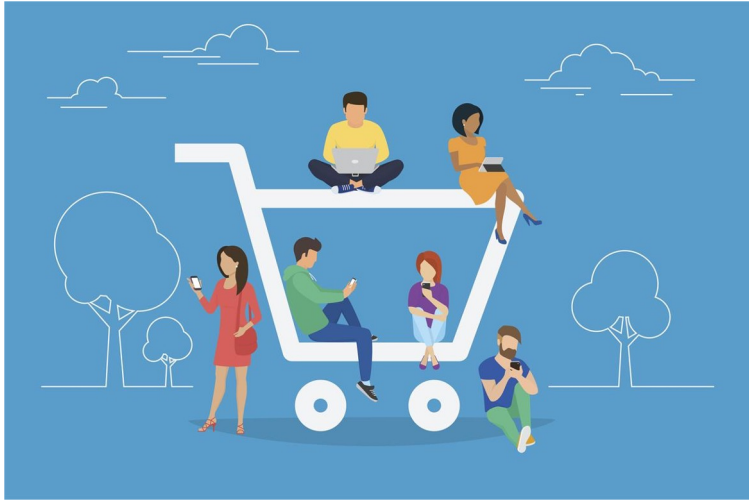Don't forget to scan the **QR code** inside the product!

INTERNAL LABEL:

Scan me

Download the **Scan&Save** App and scan the QR code

Scan & Save
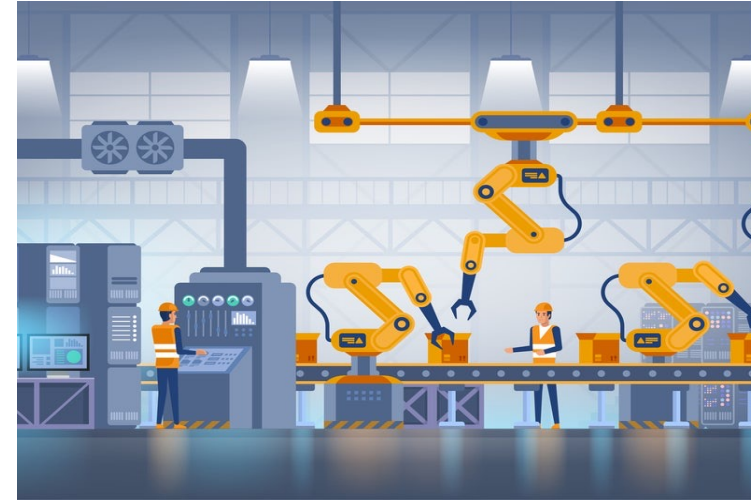
Examples of the new labeling system

Benefits

Consumers:

- Discount on the waste tax, depending on the accumulated score ;
- Greater awareness in the choice of the packaging and consumer involvement;
- Quick and easy guide to separate collection in each location, thanks to the identification of the position;

Industries:

- Discount on the Conai contribution, depending on the number of green packagings;
- Greater visibility and better image;
- Possibility for improvement;
- Guide to achieve the 2030 EU targets;
- Creation of new jobs (new professional figure for each company, who takes care of inserting the products in the app and evaluating where to insert the QR code on each product)

IDEA SELECTED

SUSTAINABILITY INDEX

Opportunities

- Facilitate the consumer in choosing more sustainable products
- Decrease disinformation and discourage green washing
- Increase the amount of recycled plastic
- Reach the 2030 objectives (and other climate objectives)

Threats

- Disadvantage some types of industries ⚠️
- Costs for the evaluation of individual companies ⚠️

Strengths

- European Regulation
- Many possibilities for improvement
- Increase in healthy competition between companies
- Simple and intuitive system

Strategies to make use of Opportunities through our Strengths:
-Creation of a color scale for assessing the sustainability of industries and their packagings. The colors are green, yellow, orange and red, in descending order of sustainability. Each packaging must show all the colored scale in plain sight and the corresponding color must be highlighted.
- The regulation facilitates companies that make sustainable choices: single-material packaging, easy to dispose of ...
- The ranges that characterize the indices can be easily modulated by the team that writes the regulation, in order to achieve the most interesting objectives for Europe (recycling, pollution ...). in this way there will be no constraints for companies, but simply conditioning.

Strategies to prevent Threats through our Strengths:
- The construction of the indices requires the minimum investment by the company and the maximum yield in terms of sustainability;
- Possibility of carrying out a self-assessment according to the European regulation.
- Creation of a ranking of companies, in which the score is assigned based on an average weighted on the number of products and on the colors.

Weaknesses

- Consumer laziness
- Discontent with unsustainable companies ⚠️

Strategies to make use of Opportunities to minimize Weaknesses:
- Creation of an app to scan the codes, which provides indications on how to differentiate the packaging and which assigns points to the consumer.

Strategies to minimize the potential dangers lying in sectors where Weaknesses meet Threats:
- The idea triggers healthy competition between companies and offers the opportunity for companies to improve (Economic growth).

SWOT analysis

Problems

Risk of disadvantage and creating <u>discontent among less sustainable companies</u>

Additional <u>costs for the evaluation</u> of companies

Who is in charge of <u>creating the app</u>?

How to <u>quickly inform</u> consumers and industries about the new labeling system?

Solutions

The construction of the indices requires the <u>minimum investment</u> by the company and the <u>maximum yield in terms of sustainability</u>

Companies can carry out a <u>self-assessment</u>. Moreover, they can request an <u>external evaluation</u>, valid as certification, which allows to earn points in the general ranking of industries

The app is implemented by the <u>entity in charge of recycling collection (COREPLA/CONAI).</u>

By <u>advertising</u> on social media, TV, radio, information posters inside supermarkets and a special section on supermarket flyers .

Results

Considering the assigned challenge, our goal is to devise a strategy to increase the amount of plastic collection and recyclability:

- Helping the consumer to make informed choices and empowering companies, thanks to the **new labeling system;**

- involving industries and citizens through the **Scan & Save app** and facilitating their attitude to recycling, providing for a «cashback»;

- Helping industries to be in compliance with the **2030 objectives**, thanks to the new European regulation;

- Increasing the efficiency of the separate waste collection system between municipalities.
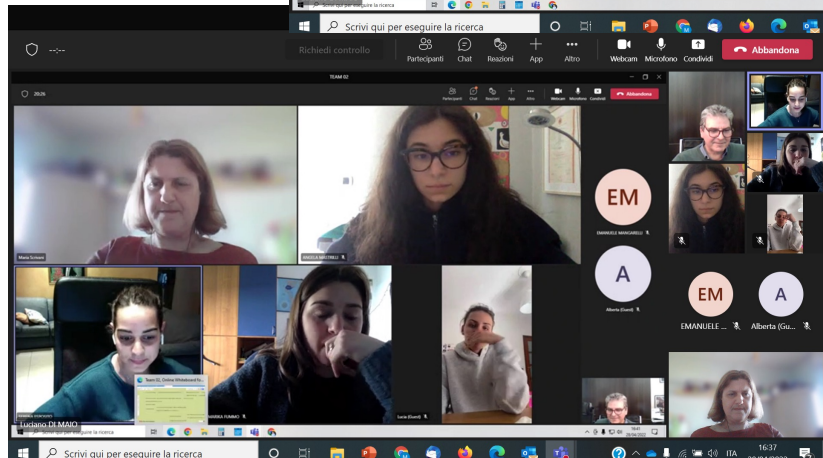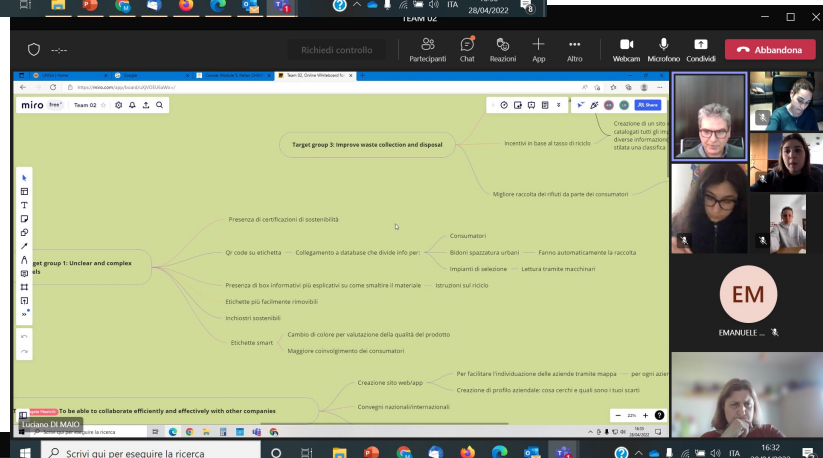
Thank you for your attention and trust!