Good practices and new products to reduce waste

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Premise

Recycling has become common practice in most of the country.

In many areas, it has reached high percentages that could hardly be increased further without causing inconvenience to citizens at the risk of affecting its social acceptance, this according to data collected in the past 15 years.

Recycling alone is not sufficient to solve the problem of waste though; it becomes increasingly important then to introduce good practices and products to reduce waste production at its origin.

The project aims at showing possible ways of reducing waste related to the diffusion of new products, new materials and new practices which are not restricted to the reduction of just product packages, but the products themselves.

Structure

Phase 1 - Identifying critical variables

In this first phase we will introduce an analysis of the main strategies for waste reduction in line with the objective of our study. We will focus on methods for product innovation without considering activities aimed at increasing recycling or minimising packaging.

Phase 2 - Product identification

On the basis of the strategies identified, we will choose the products and define a methodology for the analysis of case studies.

Phase 3- Presentation of case studies

In this third phase we will analyse the case studies considering them for the strategy for waste reduction they use. Each case study will be in turn divided into three parts: problem quantification, innovation presentation, economic and environmental benefits quantification.

Products Analyzed

Strategy	Product Innovation
ELIMINATING DISPOSABLE	Bagless hoover Dyson
	Rechargeable battery
DESIGN FOR DISASSEMBLING, REPLACEMENT OF A PART OF A PRODUCT	Shaver disposable blades
	Exchangeable head toothbrush Fuchs
BIODEGRADABLE MATERIALS	Biodegradable chewing gum Chicza
	Pots in peat Jiffy
	Biodegradable cat litter Alframa
REPLACEMENT MATERIAL RECYCLED	Material for coatings DNA Urbano-Stone
	Timberland shoes
WEIGHT REDUCTION	Door wood veneer Valcucine
MEASURES ON LIQUID PRODUCTS	Distribution systems of free beverage
	Solid shampoo Lush
	Super-concentrated hydrosoluble Sutter

Study case
CHEWING GUM BIODEGRADABLE

Strategy for waste reduction:

USE OF BIODEGRADABLE MATERIALS

Dimensions of the problem

Out of 60 million inhabitants, 15 million Italians chew chewing gum; at the average of 3 gums a day, 45 million gums are consumed every day*.
According to some recent data, about 23,000 tons of chewing gum is consumed every year just in Italy** (weight of chewing gum 1.36g ***), for a total of 300 million packets and 500 million sticks.

Most of the chewing gum produced today is an industrial product which uses petroleum-based polymers as a substitute for natural gum.
This is the reason that this kind of chewing gum has become a danger to the environment: chewing gum takes no less than 5 years to biodegrade.
The cost to remove a gum thrown on the ground is one Euro** for a total of 16.4 billion Euros per year (considering the worst case scenario in which all gums are not disposed of properly).

Perfetti Van Melle is the market leader in Italy in the chewing gum industry.

* Source Chicza Italia
** Source Amsa foundation for the environment
***Source direct measurement GMI (Green Management Institute)

Presentation of innovation

Chewing gum 100% biodegradable, certified organic origin.

One of the advantages of Chicza composition is the ease with which biodegrades. During disposal in fact the components, all natural, will become powder within weeks.

The organic gum, in addition to being biodegradable, is water soluble and non-adhesive.

PACKAGING:
Chicza comes as a single slab of gum cut into 12 chewing gums weighing 2.5g, is packed in flat cardboard packets and a single sealed bag for a total weight of 7g*. In the case of chewing gum in tablets** instead, the package for a packet with 10 tablets weighs only 0.8g. So, if we consider the packaging, chewing gum tablets produce 1,353 tons of waste per year, while in the case of Chicza we obtain 9,809 tons of paper waste per year.

* Source direct measurement GMI (Green Management Institute)
** The comparison in terms of packaging is to be considered indicative as there are different types of packaging for the traditional chewing gum, both at the level of weights of materials

Environmental benefits

Replacing traditional chewing gum with biodegradable one in Italy, we would get the following benefits:

- 23 thousand tons less of rubbish which is generally not disposed of properly and abandoned in the street
- a saving of 16.4 billion Euro on the cost of street waste disposal
- considering the case we have analysed, including packaging, the savings drop to 14,544 tons of waste avoided and 1.45 million Euro saved

Chart 6. Biodegradable chewing-gum: environmental and economic benefits