

POLITECNICO DI TORINO  
Repository ISTITUZIONALE

Education and companies together for the environment. Educational experiences for developing the culture of waste separation and recycling of paper materials

*Original*

Education and companies together for the environment. Educational experiences for developing the culture of waste separation and recycling of paper materials / Bozzola, M.. - ELETTRONICO. - (2012), pp. 139-152. (3° International Forum of Design as a Process. Latin Network for the Development of Design as a Process Turin 3-5 November 2011).

*Availability:*

This version is available at: 11583/2503501 since:

*Publisher:*

UMBERTO ALLEMANDI & C

*Published*

DOI:

*Terms of use:*

This article is made available under terms and conditions as specified in the corresponding bibliographic description in the repository

*Publisher copyright*

(Article begins on next page)

# INNOVATION IN DESIGN EDUCATION

*Proceedings of the Third International Forum  
of Design as a Process*

FORMIA, E. M. (ed.)

# **INNOVATION IN DESIGN EDUCATION**

*Theory, research and processes to and from a Latin perspective*

Edited by  
ELENA MARIA FORMIA

UMBERTO ALLEMANDI & C.

TORINO ~ LONDRA ~ VENEZIA ~ NEW YORK

Published by Umberto Allemandi & C.  
via Mancini 8  
10131 Torino, Italy  
[www.allemandi.com](http://www.allemandi.com)

First published 2012

© 2012 Umberto Allemandi & C., Torino  
All rights reserved

## EDUCATION AND COMPANIES TOGETHER FOR THE ENVIRONMENT. EDUCATIONAL EXPERIENCES FOR DEVELOPING THE CULTURE OF WASTE SEPARATION AND RECYCLING OF PAPER MATERIALS

Bozzola, Marco

Research Fellow

Politecnico di Torino, DAD, Italy

marco.bozzola@polito.it

By focusing upon two educational experiences undertaken as part of the Graphic & Virtual Design Degree Course at the Politecnico di Torino with local companies, we intend to highlight how the value of the relationship between companies and educational activities, in the design discipline, lies primarily in the development of products and services with a highly cultural connotation. This is thanks to a university methodology which, focusing particularly upon interpretation of the social and cultural context, as well as technical aspects and aspects relating to the market itself (definition of scenarios), is able to outline behaviours, solutions and principles in line with conscious and modern design, where innovation strongly correlates with the development of cultural aspects even more than technological ones.

In particular, the educational activity was conducted with Amiat, Multiservice Company for Environmental Hygiene in Turin, and Comieco, National Consortium for the Recovery and Recycling of Cellulose-based Packaging.

### ••• Recycling, waste separation, packaging, merchandizing •••

The encounter between two cultures, the operational one of production (of services or products) on one side and the speculative culture of training on the other, is traditionally an opportunity not just for a fruitful and reciprocal exchange of knowledge, but also a time for research where individual attitudes change and evolve in the mutual dialogue. The interest in these experiences, from the perspective of design disciplines, lies also in the aspiration to put together real/achievable proposals, where the cultural approach is at the forefront and is clearly recognizable. The objective is to define products or services, where the “educational” nature (from the point of view of good practices in relation to ethics, society, the environment and consumption, etc.) towards the user/consumer is not secondary to their functional nature.

But what is the specific contribution of the educational activity, in relation to commercial dynamics and to development of the company?

If we consider a basic outline according to which the company develops services and products, with contributions from professional consultants or research bodies, and releases them onto a generally localised market by way of commercial communication systems (industry trade fairs, advertising campaigns, BTL communication), we can see how this outline changes when the relationship with education is added.

From the point of view of the process, education stands out as a tool for addressing specific themes in accordance with a university methodology which sees at its forefront an in-depth activity of acquiring the relevant knowledge and processing it through a multi-disciplinary approach. The analysis phase (meta-project) is the founding moment of the process of developing the proposal, as well as being preparatory to it and, in terms of educational value, it is also more important than the next phase of project development. From these analyses it is possible to focus upon the intervention scenarios and finally to give rise to real application models (product or service projects).

Generally, the relationship between education and business, for developing a specific theme agreed between the parties, on one side leads to a transfer of know-how from the company on that educational activity (which actually completely replaces the “external consultancy” and research system, conducted, in addition to the students themselves, by the lecturer and teaching consultant) and on the other leads to a system of OUTPUT on the education side which is not simply limited to developing the project, but also involves the construction of Scenarios of analysis and investigation. In this approach, we no longer consider the market as the only recipient of the project activity, but in a broader sense “society” is also considered as the beneficiary of the action. This is precisely by virtue of that analysis which tends to involve social and cultural aspects, as well as considerations in terms of performances. As a result of this extension of the recipient, the communication system is also altered, adding the “cultural” approach to the purely “commercial” one. This communication is based, as well as on traditional commercial channels, also upon developing exhibitions, publications, taking part in conventions and seminars, aimed also at a wider audience.

If, then, the companies involved are bodies operating in the social/cultural sector, whose objective is not so much the manufacture and sale of consumer goods, but the provision/promotion of services for social welfare (cultural organisations, social co-operatives, safeguarding institutions, etc.), it can be said that the communication, as well as being instrumental, becomes a true output of the educational activities, on a par with the project results. In this scenario, the recipient expands further, including not only the market and the company, but those institutions and government bodies.

From these considerations, we intend to report upon the dual experience, carried out in the form of educational conventions, conducted by the design courses *Design per la Comu-*

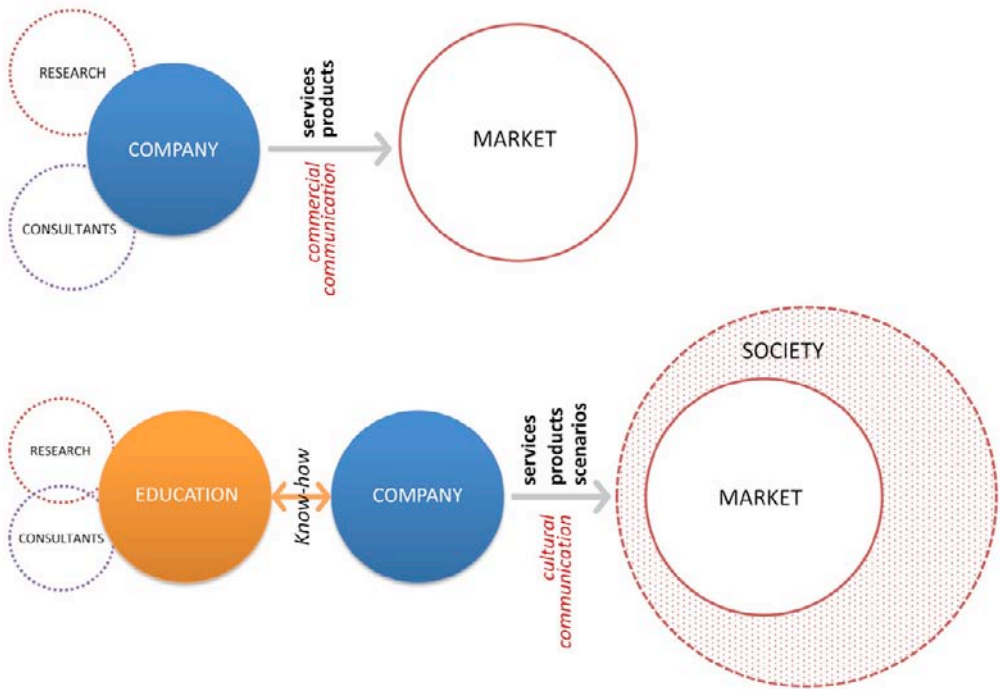


FIG. 1. COMPARISON OUTLINE OF THE BUSINESS-MARKET (A) AND EDUCATION-BUSINESS-MARKET (B) RELATIONSHIP.

nicazione Visiva (Design for Visual Communication) and Cartotecnica e Imballaggio (Paper Products and Packaging) of the Graphic and Virtual Design Degree Course at the Politecnico di Torino, in conjunction with some local operators, on the theme of waste management, with the aim of promoting the culture of waste separation and packaging recycling.

The organisations involved were, on one side, Amiat, Azienda Multiservizi Igiene Ambientale Torino (Multiservice Company for Environmental Hygiene in Turin), on the theme of waste separation, on the other, Comieco, Consorzio Nazionale Recupero e Riciclo degli Imballaggi a base Cellulosica (National Consortium for the Recovery and Recycling of Cellulose-based Packaging), together with Slow Food, as regards paper packaging for typical food and wine products.

#### AMIAT EXPERIENCE

The first experience began during the academic year 2008-09, between the Graphic and Virtual Design Degree Course at the Politecnico di Torino and Amiat, Azienda Multiservizi Igiene Ambientale Torino (Multiservice Company for Environmental Hygiene in Turin), conducted as part of the Design for Visual Communication 2 course by Professors Marco Bozzola and Riccardo Pietrantonio under the scientific responsibility of Paolo

Tamborrini (Politecnico di Torino).

Amiat is a municipal company which deals with environmental hygiene services for the City of Turin; in particular, it manages and supplies integrated soil hygiene (cleaning streets, shovelling snow, collecting leaves, cleaning markets, clearing riverbanks) and waste collection services, as well as managing some treatment plants for their disposal and recovery.

### *The Brief*

Upon the 40th year of activity for the company, the hundred or more students enrolled on the course were asked to design the logo for the anniversary celebration and to come up with a merchandising product, designed “ad hoc”, which would strongly represent the company identity, its values and objectives. The merchandising was to be aimed at the “internal” user (Amiat employees), or the “external” user (suppliers, customer, general public) and a fundamental requirement of the design would be its environmental sustainability content, as well as the economic element, both from a physical perspective and that of product communication.

### *Scenario*

The initial meta-project activity conducted, which occupied the students for approximately the first half of the course, involved analysing and constructing a Scenario that was able to cover, critically, the set of characteristics in the project’s area of interest. Starting with the information and specifications contained in the brief, an “ambient interpretation” was conducted which touched upon many aspects, including the most significant:

#### *- Characteristics of the company*

Research in which the characteristics that represent the company were highlighted and summarily described (relating to caring for the territory, the international dimension, the nature of public service), the activities undertaken and services provided (urban hygiene, waste disposal, energy recovery), image and communication characteristics (relationship with citizens, caring for the environment, future projection), etc.

#### *- Target audience:*

Clarification was made of the characteristics of the various recipients of the merchandising product, so as to be able to assess its type, language, “dimension”. In particular, a varied target audience was identified, ranging from local administrations and institutions, to company suppliers, employees and citizens of Turin.

#### *- Merchandising*

Investigation into the features of the merchandising product; types (generic customisable, ad hoc, territorial); variations in meaning between merchandising gadgets; the function of use and that of communication; products for sale and products for gifts, etc.

#### *- The anniversary concept*

Investigation into the meanings, values and suggestions that the anniversary concept brings with it. At this point of the research, the focus turned to some key concepts that might be contained, in various guises, in the product: concepts such as celebration, identity, history, joy, festivities and sharing.

*- State of the art and the market*

Reconnaissance of some analogous companies of Amiat, in Piedmont, nationally and internationally. Useful research to understand the attitudes already in place with respect to image and communication strategies, existing merchandise, market positioning.

These areas, together, therefore represent the context in terms of production, consumption, culture and society which surrounds the operation in question and they highlight the overall system of constraints (current user requirements, production process, distribution process, costs) and opportunities (unexplored behaviours, new targets, cultural stimuli), as well as providing useful and fundamental information and input for the project being developed. The Scenario analysis undertaken by each working group and discussed repeatedly with the teaching staff, resulted in the production of summary graphic panels, which were then evaluated didactically, and subsequently brought together into a single document which

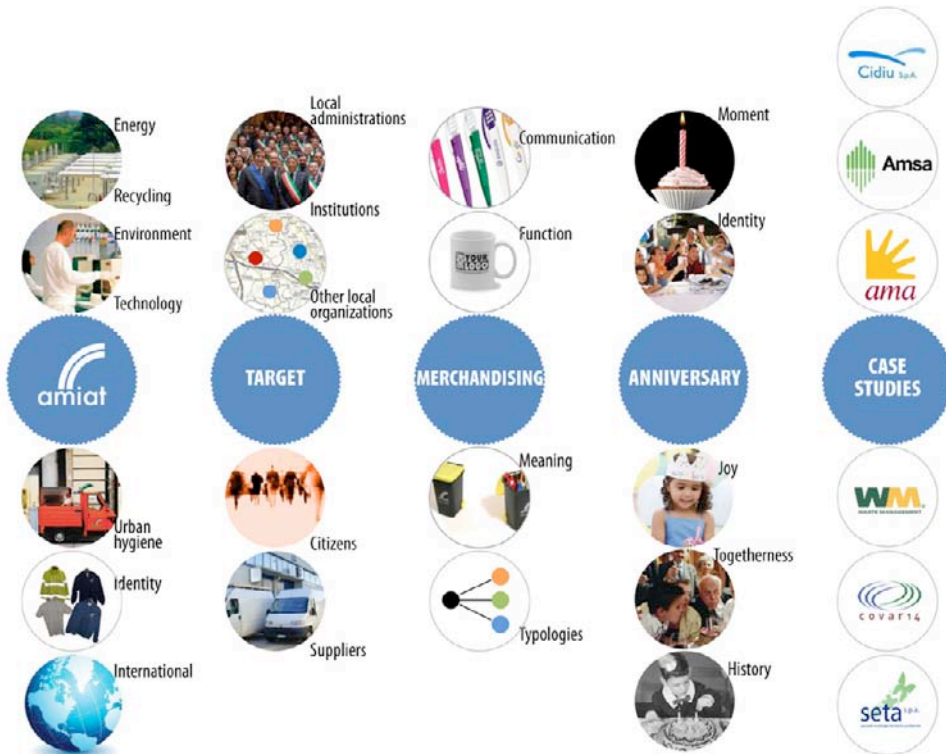


FIG. 2. AMIAT SCENARIO: SYNTHESIS OF AREAS IDENTIFIED.

was made available to the entire class as a tool for developing the subsequent phase of the project. This documentation, the sum of the critical mass on the theme in question, also represents the first output of the research relating to Amiat.

### *The Proposals*

Based upon the feedback from the Scenario analysis, the merchandising proposals developed by the students for Amiat were all dedicated to environmental, social and economic sustainability: minimal and useful products able to denote values and suggest appropriate behaviours in relation to the production and management of waste.

In general, the results can be grouped into some macro-categories, according to the approach adopted and the values to be communicated:

#### - WASTE MANAGEMENT

Products with the function of facilitating waste disposal, whether it be household waste, office waste, small consumer products such as cigarettes or chewing gum (e.g. books of papers for wrapping up and throwing away chewing gum, systems for reducing the bulk of plastic bottles or cans when throwing them away, paper waste baskets to be applied to the legs of desks, etc.)

#### - CLEANING

Products for household cleaning, for cleaning personal accessories and decorations in general (uniquely shaped small brushes and dustpans exhibiting the Amiat logo, pencils equipped with a cap/brush to collect the remnants of erasing, perfumed containers for the car, etc.)

#### - "SYMBOLIC" PRODUCTS

Products not strictly connected to the activity of cleaning or waste management that is characteristic of Amiat. Objects, then, that are less "explicit" but which play upon an allusive dimension and semantic association: one of these, the seasonal fruits with "Amiat" sticker, highlights the fact that being attentive to the cycle of the seasons, and therefore the rhythms of nature, correlates with a healthy lifestyle which is respectful of the environment.

#### - RESPECT FOR THE ENVIRONMENT

A thematic variation on the "symbolic" category. In this case, too, the proposals coincide with products/metaphors, in that the reference to nature and to "cultivation" in particular attempts to be a sign of caring for the environment. The message is simple and clear: Amiat helps you to create and defend nature through the use of specific products.



FIG. 3. RECICLAS.

BOOK OF PAPERS FOR WRAPPING UP AND THROWING AWAY CHEWING GUM.

THE PROPOSAL AIMS AT EDUCATING, IN A FUN WAY, ABOUT THE APPROPRIATE WAY TO DISPOSE OF THE PRODUCT.

DESIGN: I. BOSSO, A. CASCARANO, S. PELLERINO.

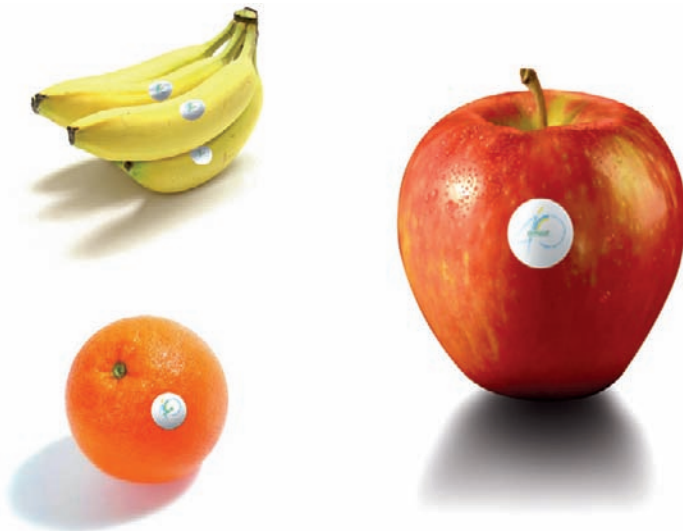


FIG. 4. SEASONABLE.

"SYMBOLIC" MERCHANDISING DEFINED BY SEASONAL FRUITS WITH THE COMPANY LOGO APPLIED IN THE FORM OF A STICKER. DESIGN: F. EMERY, Y. SANTINI.

## COMIECO EXPERIENCE

For the purposes of continuity with the activity conducted, the educational collaboration was formalised in next academic year (2009/10) between the Graphic and Virtual Design Degree Course at the Politecnico di Torino and Comieco, Consorzio Nazionale Recupero e Riciclo degli Imballaggi a base Cellulosica (National Consortium for the Recovery and Recycling of Cellulose-based Packaging), together with Slow Food. The operation was conducted as part of the *Cartotecnica e Imballaggio* (Paper Products and Packaging) course run by Prof Marco Bozzola, under the scientific responsibility of Prof Luigi Bistagnino (Politecnico di Torino).

Comieco is the National Consortium for the Recovery and Recycling of Cellulose-based Packaging and it deals with promoting the activity of recycling paper materials and raising awareness about the value of waste separation, also through activities involving citizens, companies in the paper packaging sector, institutions and universities. It also has the institutional task of achieving the recycling targets set by EU regulations and adopted by national legislation.

### *The Brief*

The aim of the course was to develop sustainable proposals for systems of transportation, sale and consumption of food and wine products, from paper materials. This would include containers to be used for temporary purposes, situations of daily “nomadism”, independently outside the home, and in particular, at Turin’s Salone Internazionale del Gusto (International Food Fair).

In this context, some specific areas in which to position the proposals were identified, in particular:

#### *- Places already equipped for food consumption.*

Restaurants, bars, sandwich shops at the fair which may require systems for setting the table quickly (place mats, coasters, trays) as well as gathering and delivering the food to the customer to take-away, whether it be a takeaway service or collecting the leftovers of the meal.

#### *- Producers’ stands*

Visits to the individual producers, where exploration of the typical food offer is achieved by tasting the products on show. Small samples, also of different foodstuffs within a short period of time and space, which generally require small accessories and mostly disposable supports.

#### *- “Picnics” at the Fair*

Meal consumption in improvised places; sitting on the floor, on a bench or leaning against random supports. Snacks that can be consumed inside the fair or in the adjacent outdoor spaces. Break times that are taken “freely” and independently, where meals are generally consumed in portable or hermetic containers, of which the mess tin is the archetype. These can occur alone or can be a time of aggregation whose social and recreational function is

complementary to the function of nourishment.

The projects would focus upon single-use paper systems (disposable) or reusable solutions in different contexts other than the purchase (e.g. picnics, lunch break at work, etc.). Based upon the identified scenario of use, provision was made for single or multi-portion containers, systems for eating whilst seated or standing and portable multi-tasting accessories, etc.

In some cases (e.g. producers' stands) it would be useful to hypothesize some specific relevant food products.

In particular, the students were asked to reflect upon the concept of eating in dynamic conditions, in a temporary context, according to requirements strictly connected with the act of moving around and the lack of fixed supports.

The research for functional and innovative solutions, in relation to the identified area, was to be undertaken with a view to systematising the characteristics of ergonomics, safety, protection, lightness, autonomy and environmental sustainability.

In developing the concept and the product characteristics, a fundamental requirement was the use of paper material and development of the activities of recycling and recovering the container at the time of its disposal.

### *Scenario*

Also in this case, the path of developing the proposals commenced with the construction of a relevant Scenario, with investigation and analysis into the areas surrounding the identified theme. In particular, the products developed by the students were concentrated on:

#### - RELEVANT VALUES

Analyses of the characteristics of Comieco, from the profile of values expressed and activity undertaken: attention to the environment and recycling activities, management of packaging, use of paper materials, the institutional role. The framework of values was also completed by examining the other two entities involved in various guises in the operation: Slow Food and the Salone Internazionale del Gusto event, involving the concepts of quality of life, respect for biodiversity, social equality, local agricultural production, material culture, territorial value and nutritional education.

#### - THE TARGET

Investigation into the relevant user and their prerogatives. The analysis led to the definition of four types of main user: the sector operator (who exhibits at the fair), the connoisseur (demanding in product tasting, also moves independently), the enthusiast (interested in the theme; for him/her, the visit and tasting are a source of entertainment and pleasure) and the curious (to discover a field he/she does not know well).

#### - CONSUMPTION SCENARIOS

Discussion of the features, already partly contained in the brief, of the specific environments in which the project is positioned (equipped locations, producers' stands, picnics at

the fair). The dynamics of meal consumption in these contexts was analyzed: the need to operate while standing rather than seated, to use, or not to use, instruments and accessories (use of utensils or hands directly), the opportunities for sharing the meal, the encumbrance of any accessory elements carried whilst moving around (bags, brochures, purchases), etc.

- PAPER MATERIALS

Exploration in respect of the technologies of transforming and processing paper. From the production of virgin paper to recovery and recycling systems. Investigation of cellulose-based semi-finished products present on the market (sheets, pressed cardboard, corrugated cardboard, honeycomb cardboard, tubes) and their performance characteristics, types of processing and use. In particular, a visit taken by the class to a paper company in the Piedmont area was extremely useful for the development of this phase.

- STATE OF THE MARKET

Investigations on existing products for transportation and/or consumption of meals independently or outside the home: critical interpretation of solutions already present on the market (starting from those created in paper materials, but not limited to such) allowed for greater understanding of the system of requirements and the performance of those products, as well as increasing awareness of the constraints and opportunities.

- PACKAGING REQUIREMENTS

Research focusing upon the main requirements for systems of packaging and consumption of meals: the critical mass of the characteristics highlighted by the students was made possible by the previous analysis with respect to existing products, as well as the thematic bibliography.

In particular, the recurring and in-depth requirements relating to the functions of containing (dimensional consistency, resealing, capacity); protecting the contents (through fastening systems, joints, creation of non-slip surfaces, watertight sealing); transporting (presence of handles, content fastening systems, pocket-size products, lightness); managing spaces (products that can be re-sealed, rolled-up, folded, disassembled, able to reduce their bulk when not in use); organising the contents (containers with internal sections, functional pockets, spaces for accessories or waste from the meal, etc.); consuming (with utensils, with the hand, with ad hoc implements, solutions which guarantee freedom of movement, manageability, self-preparation or which allow the food to be cooked or reheated); evoking (formal references to archetypal elements of the outdoor meal, to food processing products, to the territory); fun-interactive (any additional function for an engrossing experience also through interactive and multi-sensory stimuli); communicating (identify the function, declare the contents, provide information, graphical solutions).



FIG. 5. COMIECO SCENARIO: SYNTHESIS OF AREAS IDENTIFIED.

*The proposals*

The Scenario research shared by the various project groups gave rise to proposals characterised by a common approach, aimed at satisfying the functional requirements of packaging, but above all focused upon easing their use, playing, from time to time, on sensorial, fun and evocative qualities. They can be considered products with an educational nature to the extent that they are intended to go beyond the function of mere protection for the sale, suggesting new approaches to the product and communicating the culture of waste management beyond the values which make the typical foodstuff a cultural resource ahead of a market product.

As well as the environmental aspect, linked to facilitating packaging disposal, there is also a cross-reference to the founding values of the Slow Food approach / good, clean and fair – which, from the food product, are referred here back to the container itself, extending the meaning according to which the function of enhancing the identity of the product, environmentally-friendly packaging, respect and integration with the natural-territorial system is a central issue.

Through this approach, it was made possible to appreciate and enjoy the food products at best: a natural food product is enjoyed on a support that respects the environment and traditions, relating to typological archetypes that form part of our historical memory, as well as our material culture.

Supports which inform us of the taste of the food, but which we also know are made completely from paper, and both, knowing and tasting, define a cultural product, with its history, the social relationships it has established, the territory which generated it, but above all which identify new methods of consumption.

These are the themes that have stimulated the thought and creativity of the students who directly transferred their ideas onto the study models and prototypes through direct and continuous contact with paper. It was a design process that led to very concrete and immediately realisable proposals; the result of a careful study of the already existing systems which, in some cases, have become pretexts for improvement, in others, inspiration for innovative solutions.

In particular, the 25 proposals created, strictly from paper, are ascribable to some recurrent areas of meaning:

- INNOVATIVE USE

Supports which, as well as meeting basic functional requirements, present innovative solutions in the use of the food product (packaging “you can wear” so that your hands are always free, supports for glasses fitted with “anti-drip” flaps to avoid stains, etc.)

- MULTI-FUNCTION

Systems which integrate several functions within the same product. Bags for carrying food, but which are also designed to hold, in a special separate pocket, informative material from the Salone del Gusto (International Food Fair), glasses that are able to involve, in alternative ways, taste and smell, packaging that can be made up in a single configuration for show purposes, ...

- EDUCATIONAL

Products which, beyond their specific function, are intended to suggest best practices in the approach to food consumption, as well as sustainable behaviours in waste management (containers for sharing meals, kits for children which tell the story of the origins of food, containers for wine that can be used in small doses to underline the value of the product, to be tasted rather than consumed).

- “SYMBOLIC” PRODUCTS

Products with a highly evocative nature, characterised by formal solutions or methods of use which refer back strongly to some of the founding values of the relevant Scenario (trays created with layers of cardboard sheets to represent the morphology of the territory, a support for the hand which, through paper products, copies its image and therefore the significance of the primary instrument of humans and guarantees the genuineness of the products contained, supports with shapes inspired by natural elements, and much more).



FIG. 6. HANDEAT.

SINGLE MATERIAL SUPPORT IN CARDBOARD FOR TASTING TYPICAL PRODUCTS, INTERPRETED AT A FORMAL LEVEL IN THE IMAGE OF THE HAND AS THE PRIMARY INSTRUMENT OF HUMANS AND THE SYMBOL OF CRAFTSMANSHIP, BUT ALSO AS AN INTERNATIONAL VEHICLE OF COMMUNICATION.

DESIGN: R. CAMPAGNARO, A. CAPASSO, I. PIVARO, M. REMONDINO.



FIG. 7. 4 IN 1.

SYSTEM FOR TASTING AND TRANSPORTING FOUR DIFFERENT QUALITIES OF WINE. CREATED ENTIRELY IN CORRUGATED CARDBOARD, IT IS ASSEMBLED AT THE TIME OF SALE WITHOUT THE USE OF GLUE POINTS.

DESIGN: M. CORDILLET, R. FISSORE, A. SACCA, M. SARTOR.

*Communication of the Activity*

As already mentioned at the outset, the value of the design activity in the educational area developed in close contact with companies, as well as being found in the specific design proposals, is defined also by the collection and critical interpretation of the results (in terms of the Scenarios and proposals) and communication of the same to a mixed audience, which can range from the specific market of the company, to the academic world, to institutions, to society at large. It must be recalled that operations of this nature, though responding to a specific brief and giving rise to concrete proposals, make the cultural action the main objective, even more so if the themes developed and the external operators involved are connected to a market of a social and cultural nature. In addition, the very great variety of proposals and approaches determines the clear difference from an operation of a classical professional nature, where, in response to an explicit problem, a specific solution is proposed.

In this context, the act of communication therefore tends to follow not so much traditional channels of a commercial nature, but systems of a “cultural” type, such as the creation of exhibitions and shows, the publication of articles in specific journals, books which by recounting the activity, the results achieved and future scenarios are put forward to enhance the debate on the issue in question. In this perspective, the final papers of both experiences recounted here are exhibited: the first, with the exhibition 40 Anni di Amiat held from 8 to 22 October 2009, in the Sala delle Colonne at the Castello del Valentino, Torino; the second with the exhibition easyEATING, Systems for Transporting and Consuming Food and Wine Products, from 21 to 25 October 2010 at the Low Environmental Impact Events at the 8th edition of Turin’s Salone Internazionale del Gusto. The results were also collected, respectively, for the catalogue 40 Anni di Amiat. Progetti di logo e merchandising per l’anniversario dell’azienda and for the publication easyEATING. Sustainable paper packaging for traditional produce), edited by Marco Bozzola, Davtivo editions.

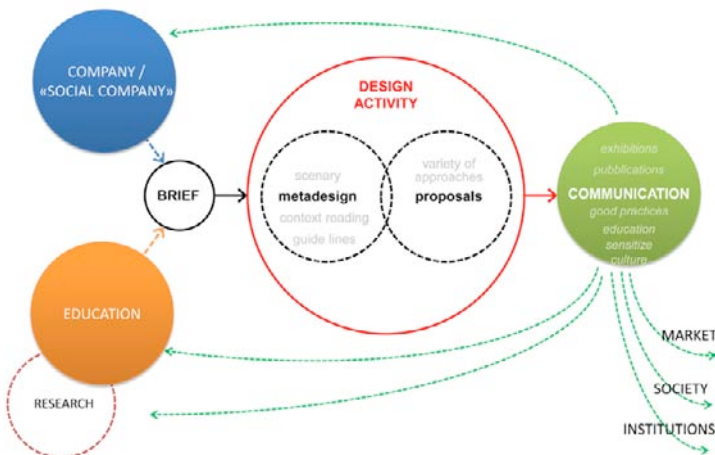


FIG. 8. ACTIVITY PROCESS.