

# EDULEARN<sub>21</sub>

13TH INTERNATIONAL CONFERENCE  
ON EDUCATION AND NEW LEARNING  
TECHNOLOGIES



CONFERENCE  
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# A NEW TAKE ON THE FOOD SYSTEM DISTRIBUTION AND PURCHASE

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## Abstract

Sustainability is a theme often argued by many but practically handled by few. Nowadays, the environmental debate is more and more felt on every level of the social hierarchy and persistently pushed by continuous government regulations. From companies' point of view, deciding to define sustainable behaviours as fundamental requirements of one's production chain is a duty rather than a strategic choice.

There are, however, countless ways to innovate in the field of sustainability, some more well-known and praised than others; if one were to consider the food conservation industry and take into account the behaviour of companies involved in such field, for instance, one would soon realize how little is done to find innovative ways to tackle the environmental crisis, as well as transmit to the consumers values such as freshness and quality.

The University-Industry synergy was at the base of this research and made it possible to observe and study the industrial reality from a fresh perspective.

The thorough corporate know-how, the deep data and context analysis carried out during the initial phases of the project and the continuous dialogue and feedback from the company inner elements made it possible to develop a refrigeration system which rethinks entirely the current refrigeration methods put in place by the main companies and takes a new direction towards a more sustainable way of displaying, purchasing and distributing food in grocerant environments. This is made possible through the localized distribution of cold, which allows food to be stored and distributed without the use of packaging and with more thorough and individual control on temperatures, in order to optimize its organoleptic qualities and extend its life span.

The University-Industry cooperation also allowed to better understand inner company dynamics and generate innovative thinking, such as involving the final client in the ideation process in order to increase awareness over the sustainability of food conservation products and the value of the products themselves.

This research aims at finding innovative solutions to increase consumers' knowledge of food quality and to involve them in the processes meant to face the environmental crisis. Transforming in a circular connection between three parties - the company, the client and the final user - a B2B relationship which previously only involved the producing company and the buying client.

Keywords: Synergy, Innovation, value, freshness, awareness, refrigeration.

## 1 INTRODUCTION

This project is the result of the collaboration between the Final Synthesis Class held as part of the master's degree in Integrated Product Design at the Politecnico di Milano and the EPTA group and one of its companies, IARP, world leaders in the production of refrigeration systems for commercial use.

The final goal of the project was to find new ways of approaching environmental issues, trying to approach the subject from a new point of view which could open up new business developments for the companies and differentiate them from other main market competitors, making them leaders in the field of environmental respect. The ultimate goal is to apply the notions obtained in the various stages of research and to rework them to obtain a formal synthesis of the thought generated from data analysis.

## 1.1 State of the Art

According to an analysis that emerged in the annual Coop report (2020 edition), 49% of Italians prefer to eat food from their own cuisine rather than dishes typical of other cultures, 42% say that the origin is not fundamental as long as the product has been grown using methods that respectful of the territory and with reduced consumption of non-natural agents, 38% of these, moreover, prefer sustainable foods that are not only healthier for the environment but also for their bodies. If one adds up to this the knowledge that 62% of companies have expressed a willingness to collaborate to make a difference in the environmental sphere, some increasingly strong tendencies become evident: consumers want to be informed and made participants in the processes that drive change, companies tend to open up - sometimes for visibility, sometimes for purely ethical purposes - to alternative routes that have a lesser impact on the planet, although at times more expensive and logistically less efficient.

The analysis carried out during the research phase about the companies EPTA and IARP has led to the definition of the current techniques and approaches that the two companies adopt concerning themes such as sustainability and respect for the environment. The result is a linear and almost standardized approach to these issues, shared by most of the companies specialized in the production of refrigeration systems for commercial use, which focuses on the aspects most closely linked to the usage phases of the products and, in some cases, to their disposal at the end of life. If the LCA (Life Cycle Assessment) of a commercial refrigerator is analysed, it can be seen that the current and most commonly used production techniques involve processes that are rarely reversible, such as the insertion of insulating foam inside the structure. It is also interesting to note how the approach to sensitive environmental issues is based almost exclusively on what could be defined as a recalibration and eventual replacement of refrigerant gases with a high environmental impact, often not spontaneously implemented but rather due to the push of national and international regulations such as the most recent issued by the European Parliament (Regulation (EU) No 517/2014 of the European Parliament and of the Council of 16 April 2014 on fluorinated greenhouse gases and repealing Regulation (EC) No 842/2006) to defend and safeguard the climate [2].

It could be said that companies that are concerned about the impact their products will have on the planet are not taking into consideration all the elements closely related to them. This process can be considered normal as it is not their task to define what is contained inside their refrigeration systems, what origin it has or what material has been used to preserve it, but if this logic were to be overturned and subverted then space could be opened for interesting new scenarios.

One aspect that is certainly interesting is the attention paid to the involvement of the final user, the one who is, to all intents and purposes, the real user or “consumer” of the product.

Concerning the distribution of refrigeration systems at a commercial level - which falls within the commercial dynamic commonly defined by the acronym B2B, “Business to Business”-, the communication and marketing of products take place, as in almost all B2B realities, limitedly between the company selling a good and the company purchasing that said good, without therefore ever involving a third external element. These marketing techniques, now known and consolidated, have, however, as a strong limitation the total exclusion of the final customer from the decision-making process and especially participatory: A product that is marketed as more environmentally friendly, will be purchased, distributed and subsequently used by customers without their knowledge of the characteristics that make it a more sustainable product than others.

## 2 METHODOLOGY

The design process originated from the assignment of a brief by the company that clearly defined the intent and goals to be achieved: design a piece of furniture for Ho.Re.Ca. and Grocerant compartments, foreseeing 5-year strategies and changes in penetration.

Since this first step of the project, it is already evident the great advantage of approaching this kind of request as a university student rather than a company employee: the professional figure who is linked to the company by a working relationship is bound and conforms, sometimes even unconsciously, to the company's ideals and needs, carrying out research and information bringing forward processes according to the logic of the company's thrusts, without the freedom to range freely. On the contrary, a university student who is asked to collaborate on a project is not bound in any way to satisfy specific requests intrinsic to the company's hierarchical system. On the contrary, he/she can broaden his/her field of research and feel freer to free him/herself from the initial requests and rework them, subvert

them, question them, often reaching surprising results and opening the way to interesting discussions and exchanges of opinions.

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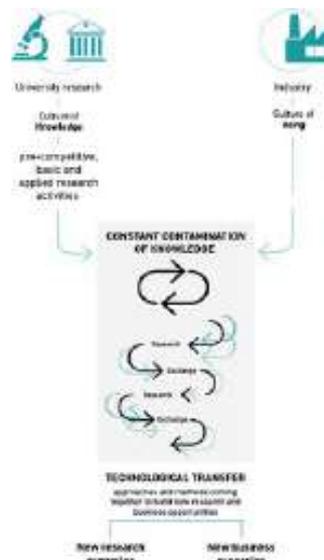


Figure 1. The advantages of University Industry collaborations (courtesy of Politecnico di Milano).

It is no coincidence that a company of EPTA's calibre has decided to undertake collaboration with the university environment. In the field of industrial design alone, more than 600 other companies have forged close relationships with Politecnico di Milano [3] and recognize that the figure of the designer is a precious added value thanks to his many abilities (fig. 2), first and foremost that of enabling dialogues between several professional profiles that often have difficulty communicating with each other [4].

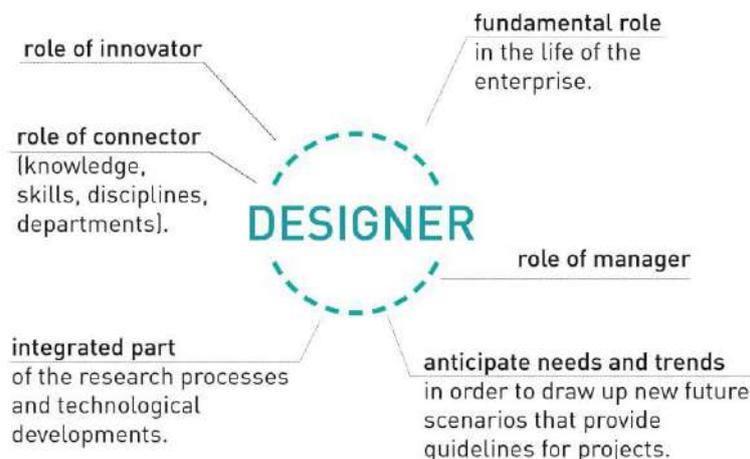


Figure 2. The multiple roles of designers (courtesy of Politecnico di Milano).

The worldwide emergency in which we find ourselves in this period has, unfortunately, limited the possibilities of research and especially of field observation, both that of production of refrigeration systems and that of their use.

The analysis phase was, however, carried out in constant monitoring and collaboration with the managers of the companies, providing summaries of progress and receiving weekly feedback. For the group research part, the various websites owned by the companies were analysed, as well as the entire product portfolio of IARP and the main trends related to the refrigeration market worldwide, with particular focus on the European, Asian (Chinese and Indian) and North American markets. This first phase of research aimed at obtaining an overview of market trends, needs and requirements of consumers, both expressed and yet unrevealed. The research carried out by the students of the course has allowed an original approach to the issues and was free from bias related to corporate culture, resulting in invaluable insights for companies. The outputs of the various phases were presented to a diverse team of representatives from different departments such as Sales and R&D. The presentations took place in presence and saw the involvement of the company, the faculty members and the students, all heterogeneously seated around a table to break any hypothetical barrier given by the role and allow a fluid exchange of views.

The phase of development brought to the ideation of a macro-scenario and a series of more detailed micro-scenarios with more specific themes. This result has been carried out starting from the deepening and reworking of the data found in the first stage of the analysis, with particular attention to the strongest trends in the Ho.Re.Ca and grocerant sector, two markets still little explored by IARP and EPTA that show themselves as interesting new positioning scenarios.

The result of future scenarios ideation was a combination of some strategic analysis tools such as the Ansoff matrix and User Analysis, setting up solutions that can generate value and business profit, satisfying the desires of the final users.

The individual elaboration phase started from the deepening of the themes belonging to a specific micro-scenario; for this project, it was chosen to go deeper into the theme of sustainability.

The reflection began with a question, posed almost as a provocation, to incite the beginning of a discussion and reasoning on the subject: "Can an inanimate object stimulate people to behave in a more environment-friendly way?" The search for this answer was the key to the project development.

### **3 RESULTS**

The result of these long phases of research has been translated into the physical representation of a will, that of transmitting to consumers the values linked to the quality of the material coming from local territories, both from the point of view of environmental impact and from a strictly organoleptic one.

The project presents itself as a horizontal counter for on-site purchase and consumption, whose peculiarity lies in the individual refrigeration of the single meals instead of the entire counter.

The name, Diorama (s. m. [comp. of gr. διά "through" and ὄραμα "view", on the model of panorama, panoramic view, overall picture), was chosen for the unique vision that is created when the counter is filled with portions of different foods, a real panorama, both the overall view that you have looking out over the plates and admiring the full authenticity of the raw material produced locally or nationally.

What is most interesting about the outcome of the project is not much the product itself, but rather how much it differentiates - in shape, meanings and interactions - from any kind of refrigeration system ever produced before (fig.3). The result takes the distance from the whole product portfolio of the partner companies and presents itself as a unique example of what is the potential of a project developed by a designer who has the freedom to roam with the imagination and the support of a company and their intel and resources.



Figure 3. Diorama refrigeration system, view from above

#### 4 CONCLUSIONS

Diorama lays the foundations for a new approach to the distribution of raw materials in Grocerant environments and beyond.

The development goals set have been achieved in their almost entirety, especially in regard to the brief demands that the lines and the stylistic form of the product be fundamentally distant from what is already present in the market.

The concept has great potential for implementation, especially concerning the aspect of product service. Another interesting future implementation lies in the desire to make the production and distribution of food more self-sufficient: from the perspective of a circular economy based on the reuse of available resources, hypothesizing a system for the recovery of unused raw materials or waste could be an interesting design development.

The possible implementations are multiple and diverse, this is because Diorama enters into almost unexplored territory.

This range of opportunities was made possible thanks to the mentality with which the project was approached: a cohesive relationship between industry and academia environment, with its design methods and approaches unrelated to internal company and business dynamics.

Collaboration between universities and industry is not something new, especially in the design field where this synergy has ancient origins. Italy, in particular, could be defined as a fertile ground for this profession: it is the European country with the largest number of companies operating in the design sector (34,000), which employ 64,551 workers and generate an added value of over 3 billion [5]. If we add to this the notion that the applications to the entrance tests for the bachelor's degree in design of the last few years have exceeded four times the places available, it can be seen how the interest in a course of study in the field of design holds its head high against faculties such as Economics, Medicine and Engineering, and that there is, therefore, fertile ground for numerous fruitful collaborations.

The figure of the designer is now seen as an engine of competitiveness: a close correlation has emerged between investment in design and growth in turnover of more than 3000 companies surveyed [5]. In the words of Pietro Guindani, vice-president of Assolombarda in charge of Universities, Innovation and Human Capital, "[...] It is necessary to continually feed the exchange of knowledge and experience in order to keep up with the evolution of the skills required by the job market and to bring companies a contribution to innovation" [6].

Politecnico di Milano has always been a promoter of these fruitful synergies, not only in the field of design; a clear example can be found in the close collaboration between the departments of Chemistry and Materials Engineering and the companies producing safety devices, which took place

from the very first months of the pandemic and was prolonged throughout the emergency period. “It was touching to see the young researchers of the university loading the tanks and exchanging a few words about the situation with the men and women of Protezione Civile” says Ferruccio Resta, - dean of Politecnico di Milano - in his interview made by Ferruccio Bortoli [7].

In a world in which the advent of technology has made possible a dynamic, continuous, almost fluid evolution of society and of our way of life, in fact, cooperation between universities and entrepreneurs is increasingly necessary, between mindsets already launched into the world of work and that understand its dynamics but that are sometimes also subject to it, and those younger and still inexperienced in some cases but who know how to imagine the world of tomorrow.

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