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ARTIGO

Collaborative design for economic reactivation: design methodology for entrepreneurs in university workshops

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ABSTRACT

Following the social outbreak in Chile and the global pandemic of COVID-19, small and medium businesses find themselves in a particularly precarious situation as they need to find fast and efficient ways to keep their clients and attract new ones. As a proposal for small business economic reactivation, this article presents a collaboration between entrepreneurs and universities, to apply product design processes, based on packaging design methodology. Design is presented as an articulating agent between marketing and engineering, to innovate on user centered product packing, resulting in added product value and strengthening the entrepreneurship of small and medium businesses and the professional formation of service for designers in society.

K E Y W O R D S

pequenas e médias empresas;
design industrial;
inovação;
design colaborativo;
metodologia de design.

R E S U M O

Após os protestos sociais no Chile e a pandemia global da COVID-19, as pequenas e médias empresas encontram-se numa situação particularmente precária, pois precisam encontrar formas rápidas e eficientes de manter os seus clientes e atrair novos. Como proposta de reativação econômica de pequenos negócios, este artigo apresenta uma colaboração entre empreendedores e universidades, para aplicar processos de design de produtos, baseados na metodologia de design de embalagens. O design se apresenta como um agente articulador entre marketing e engenharia, para inovar na embalagem de produtos centrada no usuário, resultando no aumento de valor do produto e no fortalecimento do empreendedorismo de pequenas e médias empresas e na formação profissional de serviços para designers na sociedade.

1. Introduction

The Court of Auditors published, in 2018, that around 98% of the total of businesses in Chile are small and medium businesses (SMBs). They contribute 15% to the total of sales in the country and represent 67% of the national workforce (Ministry of Economy, Tourism and Development, 2018). This means that small and medium business in Chile make up the greater part of the workforce of the country. This is consistent with international reports such as the Global Entrepreneurship Monitor (2018), which claims that one in every four Chileans between 18 and 64 years old was involved in some sort of entrepreneurial activity. This implies that great part of the Chilean population holds a favorable tendency towards entrepreneurship and considers that they have the required knowledge to undertake such an endeavor (63%). Also, the stigma around the fear of failure has reduced in 29% (GEM, 2018, p.6). These numbers, though auspicious, also indicated little progress in I+D transference and low market dynamisms (Mandakovic 2018, cited in GEM 2018).

The reality at that moment predicted that more and more Chileans would be taking risks with their own entrepreneurial projects and that they found themselves in the middle of their pursuit towards the growth of their small and medium business. Unfortunately, during the Chilean social outbreak in October 2019, many entrepreneurs were affected by fires and looting. Not only did they suffer monetary losses but also that of their primary supplies, products and some even lost their stores, having to quickly adapt their selling strategies towards virtual platforms. According to surveys carried out by the Chilean Security Association (Asociación Chilena de Seguridad – ACHS), whom have 254 small and medium businesses (SMB) associated to their corporation, 70% of these SMBs were affected by the social crisis and 80% have decreased their sales. Moreover, almost half of them (47%) claimed that their business “will not survive more than a year if this scenario goes on” (Portal Pyme 2019).

Rafael Romero, finance expert of the University Alberto Hurtado, stated that, if the economic situation does not improve in the following six months, these entrepreneurships will have to come to an end. On the other hand, Juan Parte Swett, president of the Entrepreneur Multi Guild Association, adds that, even though the results of the surveys carried out by the ACHS are not extrapolated to the situation of the micro, small and medium entrepreneurship of the country, “it

reflects a serious problem" that implies a decline in sales of between 30% and 50%. It is also worth mentioning that, according to numbers given by said poll 15 thousand businesses have already closed due to looting or damages. These businesses belong, for the most part, to commercial, tourism, hotel, and gastronomy trades (Portal Pyme 2019). To this precarious state, we must add the global COVID-19 pandemic, which has paralyzed the economy and has forced businessmen and women of all sizes to rethink their businesses towards the reinvention of their products or the complete closure of their enterprise.

In the years following the COVID-19 pandemic, economies around the world are still struggling to recover from the effects that the social distancing, quarantines and drop in sales created in their businesses. The impact on small and medium-sized enterprises (SMEs) is even greater considering their limited resources and the vulnerability of their supply chains and business relationships, as they must now struggle to adapt their management and infrastructure to a new normal (Caballero-Morales, 2021). To cope with these changes, Caballero-Morales (2021) has identified innovation "as a key aspect of business recovery in the current and post COVID-19 pandemic period" (p. 1).

Along these lines, design is employed as an undervalued strategic tool that adds value not only to products and services, but also to productive and commercial processes (Moreno et al., 2021). Even more specifically, design is presented as a driver of innovation and infrastructure in SMEs in Chile and Latin America in general (Moreno, 2022). In this sense, it becomes imperative to use design to employ traditional models and methodologies in innovative ways to reactivate the SME economy. In this article, the innovation focuses on the packaging process, or packaging, to respond to changing trends in consumer habits following the COVID-19 pandemic.

Already since 2012, green advertising and eco-labeling have been shown to have a commercial appeal in consumers' purchasing behavior, responding to changes in their lifestyles and purchasing habits based on their environmental concerns (Purohit, 2012). During COVID-19, consumers showed increased interest in personal hygiene products and storable food products due to restrictions and social distancing norms (Ümit and Ay, 2022), which was reinforced after the pandemic.

This led to the rise of new packaging design solutions to meet consumer needs given by social isolation and mobility restrictions in Brazil (Wittmann and Dantas, 2020). However, according to Ketelsen et al. (2019), consumers need guidance in recognizing environmentally

friendly packaging, as they generally lack knowledge about new packaging materials, and prioritize other product attributes over environmentally friendly packaging. These are imperative factors to consider in the design and packaging processes.

It should be noted that, in the world of SMEs, the figure of the entrepreneur must respond to various positions, since he/she does not usually have a diversified work team that includes a professional specialized in each area of the business. This is particularly true during the first years of the venture and even more so during periods of economic uncertainty, in which the financial responsibilities of the companies tend to be prioritized over those of aesthetic and even functional elements (Moreno, 2022). However, it is imperative to recognize the strategies that design can offer and invest in small innovations to bet on economic reactivation.

As Purohit (2012) points out, products that contain ecological elements, whether in their composition, presentation, packaging and/or distribution processes, are considered kind or environmentally friendly. They respond to growing interests and needs in society to take care of the limited resources of the environment and, in addition, because they usually have healthier elements for people, either by ingestion or contact by use. Because of these benefits, orienting the design of products towards this approach allows not only to increase the attractiveness of their products, and therefore sales, but also to increase their prices given the additional cost of their benefits.

In this sense, collaborative design is key to innovate in the area of product packaging since it requires great articulation between the design and manufacturing areas. As an example, Tjahjono and Cao (2020) argue that bioplastic is an ideal replacement for conventional plastic packaging, defining these as packaging made from biodegradable materials that can be produced from renewable resources such as plant starch or bacterial fermentation of plant material; however, there are often contradictions in the characteristics of bioplastic and the products they usually contain. This is because some of these materials offer a low vapor barrier, so when used in certain foods, they can lose their moisture and dry quickly, which reduces their shelf life (Tjahjono and Cao, 2020).

To respond to these new conjectures, Tjahjono and Cao (2020) propose expanding the traditional concepts of collaborative innovation between designers and manufacturers to increase joint activities and resources in order to improve management relationships and create new theoretical frameworks that can foster dynamics between suppliers and customers. In this sense,

co-innovation is understood as new ideas or approaches from internal and external sources to synergize the creation of value for both consumers and articulators from the design, manufacturing and management of packaging and the supply chain.

On the other hand, although consumers are increasingly interested in sustainability and green products, there are a number of factors that influence their willingness to pay more for green packaging. In this line, Hao et al. (2019) identified that elements pertaining to environmental status, quality, raw material, and price of products are influential factors for consumers, but further research on these issues is required to put them in terms of attracting customers. In addition, consumers are developing other interests in sustainable packaging that have to do with its functionality and focus on convenience, reusability, and product protection capacity.

These approaches, in line with Ketelsen et al. (2019), point towards the need for greater collaborations between customers and manufacturers, mediated by designers to not only create more sustainable packaging but to provide easy-to-manipulate interfaces for customers and users to understand its function. Nguyen et al. (2019) further this argument, postulating that, despite concerns about the environmental impact of traditional packaging and the pressure felt by industry from both consumers and many governments to innovate in this area, discussions among consumers point to the fact that the customer is unclear about the definition of green packaging. The study by Nguyen et al. (2019) found that customers' knowledge of green packaging is often limited to packaging materials, such as biodegradation parameters and recyclability, given by market attractions such as eye-catching graphic designs and good prices, and they know little about manufacturing technologies.

Surveys carried out by the University of Santiago of Chile, to entrepreneurs of the Business Center of Estación Central (Moreno, Aguirre & Puyuelo 2020), show that the greater part of the small and medium entrepreneurs who participate in this Center, are not aware of the key role that Design practices can hold in their projects, and they do not contemplate having a designer on their team. This implies there is still a lack of information not only as to the role a designer has in businesses but also to the benefits this discipline can bring. As stated by Moreno, Aguirre and Puyuelo (2020), the designer is an articulating agent in business, capable of connecting the marketing area, in charge of commercial development towards the generation of new markets and needs, with the area of engineering, in charge of the development and production of products, as well as collaborating with optimization techniques, to give way towards a singular

innovation that improves entrepreneurship. This role is conceived from the first moment of formation in Industrial Design professionals, through the project methodology that is based on people-centric creative processes, that aim towards the purpose of creating products, services and experiences that grant an added value through diverse approaches.

With this in mind, this article seeks to evidence the benefits of Industrial Design in a business context, posing that a designer is an articulating agent that can enhance innovation while considering the principles of Learning and Service, by responding to changing consumer needs.

This is best applied in the following qualitative case study, in which pre-grad students collaborate with entrepreneurs to improve their product design to respond specifically to the needs of their users, which strengthens the students' professional social commitment as well as the entrepreneurs' ability to keep their clients and attract new ones as they reactivate their businesses. This, in turns, enhances the relations between SMBs and institutions that generate knowledge, such as universities and professional institutes. These goals converge in the development of personalized packaging of products for real entrepreneur in an Industrial Design Workshop, of the career of Industrial Design Technician of the University of Santiago of Chile. In this instance, students were united with small businesses entrepreneurs that form part of the sub direction of economic development and business relations of the commune of La Pintana, one of the most vulnerable locations of Santiago, to innovate on the visualization, communication, and function of its products.

2. Industrial Design in SMBs in Chile

As De Ejalde, Muñoz, M., Muñoz, V., Romero, Sigala, Tejada and Ibáñez (2020) note, Chile relies heavily on its external sector, which is why it is enormously affected by unexpected fluctuations on national and international levels. Due to these conditions, small and medium businesses seek to take on greater protagonism in the Chilean economy, supported by governmental pro-SMB agendas. This is justified in the following analysis.

> SMBs are an important alternative for strengthening of the economic institutionality, because in the face of a crisis brought on by economic recession, they could absorb part of the unemployed population, and, also, they would help maintain the level of prices, given that by encouraging their growth, economic

> competency would be favored. On the other hand, and, in no lesser matter, they would discourage informal commerce, which is why fiscal income would not be so deteriorated. In this line, as a concrete measure, we can define, for example, a program of soft credit (charging a low interest rate) that allows for the reactivation of the production of goods and services. (De Ejalde et al. 2020 11)

These proposals are particularly crucial in the period that follows the social outbreak (19/10/2019) and the COVID- 19 pandemic, during which the reactivation of the economy will be a priority factor for the progress of the nation. These particular events have on going repercussions that force businesses, more than ever, to innovate in their entrepreneurships.

Innovation, according to Nordfors (2009) has to do with the introduction of something new. Not only is it about the process of inventing but, “The real success of innovation –as Edison’s lightbulb– results from the naturalization of an innovation’s novelty, which creates an analogy/metaphor/analog, and manages consumer expectation (Hargadon 2001, in Nordfors, 2009). This implies that, to achieve innovation, it is not enough to have a novel idea because it must be accompanied by a function and a process that its users can reproduce. The invention must be complemented by a commercial use, a business model that can apply said invention in a practical and comprehensible way for those it seeks to benefit.

3. Design methodology

In this sense, the industrial designer is the ideal agent to identify the necessary tool for the creation, production, and commercialization of a product, as well as to design the ideal process to implement this tool. Through innovation, the industrial designer can articulate processes between marketing areas and engineering areas of the business to increase the appeal of a product or a service by incorporating a value centered specifically on the user for whom the product or the service was intended.

This added value comes from a designer’s principle of creating in accordance with its user. This can be understood through the foundations of Industrial Design, which originate from a movement of positivism, meaning that it is supported on the scientific method and validated through experience. According to Bernaten (2015), Industrial Design “intends for processes that regulate creative activity to be formally homologized to those mechanism of technical operation”; however,

the methodologies of these processes do not depend on traditional models. There is no work standardization, which is why researchers such as Manzani, Ricard and Juez (quoted in Pérez & Martínez 2020) insist on searching for such methodologies through Design "as an ideal tool to understand necessities, solve problems or extend bridges between ideas, techniques and society" (74). At the same time, Pérez and Martínez agree that "it is knowledge that has been constructed slowly, thanks to the interest of teachers, students and professionals, almost anonymously, whom, without formulas nor exact methods, continuously face different problematics". These ideas gain particular force in the decade of the seventies, in London, within the International Council of Industrial Design Societies, in which "Designers are encouraged to consider the economic, social and moral consequences of their work" (74). The following figure illustrates the function that the Industrial Designer seeks to perform while considering said consequences.

Figure 1. Industrial Design function, Moreno (2019).

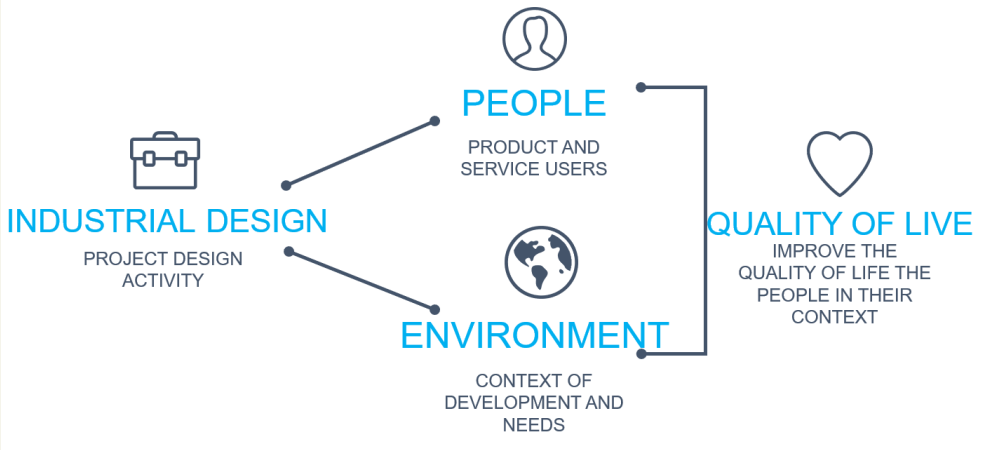


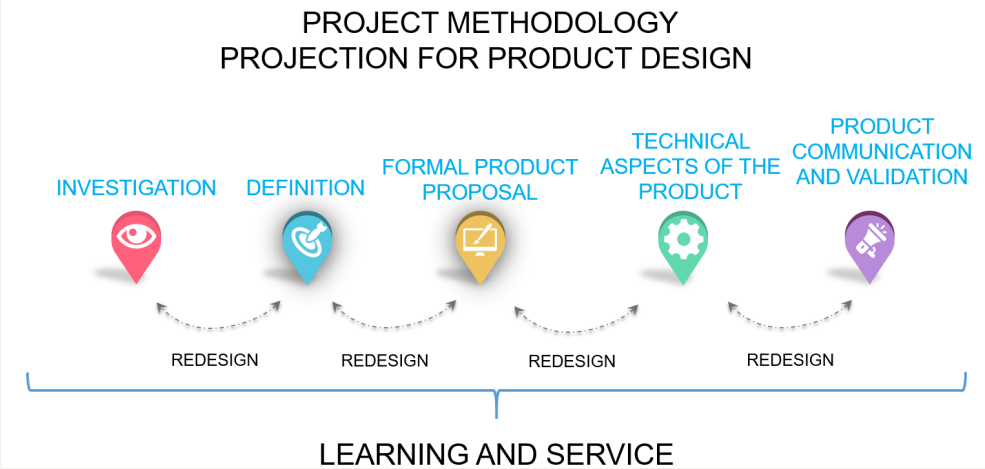
Figure 1 presents Industrial Design, as a discipline, that acts in collaboration with people, the product and service users, and the environment, understood as the context in which these products and services must be developed, along with the needs that they must satisfy, with the final goal of improving the quality of life of the people that surround them. In this figure, it is key to recognize that, among the tools with which Industrial Design works to fulfill its goal, is project methodology.

Project methodology is a disciple that is based on a creative process that centers on people. Its goal is to create and add value to products, services, and experiences through diverse approaches. Munari (1981) defines this methodology as "A series of necessary operations,

disposed in a logical order dictated by experience. Its intended purpose is to achieve maximum result with minimum effort" and it is the tool with which the designer seeks to resolve its problems.

The projectual design method is a learning strategy that helps students look for solutions to problems in a coherent, schematic, and practical manner, among other significant tasks. This model obeys a discipline that encourages students to employ a greater responsibility of their own learning, since it entices them to pose real projects that must respond to real problems within their society (Moreno & Jeno 2018, p. 224). The phases in the project methodology design method are represented in the figure 2.

Figure 2. Phases in Projectual Methodology, adapted from Moreno and Jeno (2018).



The process in Figure 2 represents the five phases of the Projectual Methodology. It defines the steps involved in the design of products. These phases compose the guidelines that designer must follow to carry out their projects and will be the process applied in the case study of this investigation.

Phase one: Investigation or Gathering Information

This phase corresponds to a background study. We must consider the current state of art of the product in question and identify the needs of the entrepreneurs, as well as the businesses niches through interviews and field research. This allows for a personalized approach towards the product which guarantees that the final result will respond to a design centered on its user, becoming more appealing and competitive among other similar products.

Phase two: Identification of the problem or Definition

This phase focuses on the creation of a brief and the formal genesis of the final product. We must identify design opportunities and verbalize ideas for a conceptual pitch.

Phase three: Formal Product Proposal

In this phase, several product designs are developed for the morphological configuration of the product. Test models are made, and their designs are presented to the entrepreneurs.

Phase four: Technical Aspects

In this phase, we must develop the blueprints for the technological processes and the design details. We must carry out a study of materials and costs, and the product will be made on laser cut machines.

Phase five: Communication and Validation

In this phase, we must put together a project log that records the entire project with posters to present to the clients. A graph of the product will be presented along with a final pitch that includes studies of usability.

This methodology functions as a plan of action to carry out the final purpose that is desired for the product. It is worth noting that designers have a social responsibility, and they must operate within this role, which is why the entire process is framed by a sense of Learning and Service. This implies the combination of two concepts with the intention of encouraging the formation of professionals along with their social responsibilities towards their community. According to Gallardo (2017), “As its name indicates, Learning-Service represents the resulting binomial of two elements known by all (learning and solidary service), which, by uniting, generate a new reality that intensifies the each one of their effects, taken separately” (73).

This article concentrates particularly on the product of an activity of project methodology that can help small and medium businesses, in which the Designer is key, and refers to the creation of objects, strategies and or systems of container and packaging, as a helpful tool for small entrepreneurs. According to Brizuela (2014), after analyzing the packaging factors of several businesses, including the entrepreneurship’s profile, product features and packaging specifics, concluded that, when appropriately designed, packaging is a strategic element that contributes to the commercial development of entrepreneurships. The professional specialized in this area in capable of analyzing, interpreting, proposing, and developing signs that produce solutions to the specific needs and or opportunities of the container and packaging realm (Vidales Giovannetti 2003).

> Packaging is a complex artefact, that with time has broadened its functions considerably. It is an object of use (instrumental prothesis), which allows it to contain a product, protect it, store it, transport it, and at the same time, favor its physical interaction with the user. Also, it is a communication device (communicative prothesis), characterized by functions that are appellate, persuasive, informative, prescriptive, among others. (Ciravegna 2003)

In order to carry out the phases of project methodology for packaging, the designer must apply the steps of the phases, defined previously, to the production of this communication device. For this, we must first consider whom the design is for, who is the client, to deliver an integral solution for their needs. At this point, it is key to recognize who are the actors that participate in this process and who the users will be.

Figure 3. Actors and users in the Packaging process, adapted from Vilades Giovannetti (2003).

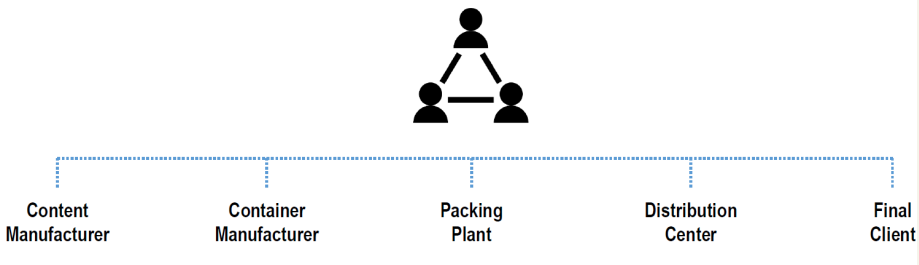
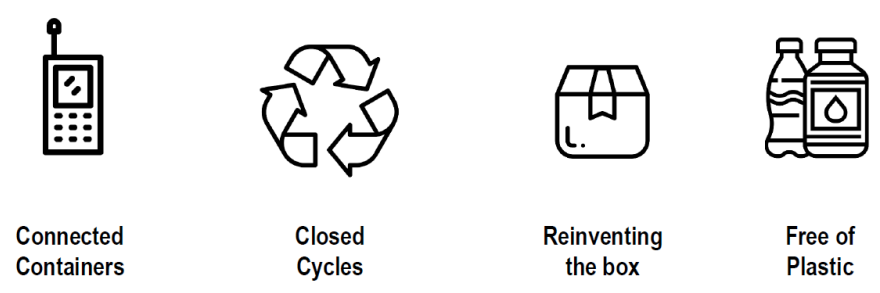


Figure 3 represents the actors and users that must be considered in the Packaging process. As an example, we can imagine that the product in question is a box of cherries. The first agent with whom we interact with is the manufacturer of the product, its supplier. In our example, that person would be the cherry farmer. Next, we would find ourselves with the manufacturer of the container. Third, we would meet with the packing business. Then, we would deal with the distribution centers, such as supermarkets or grocer's shops, and finally, the product would meet its final client who would be the cherry consumer.

Now, to appeal to the clients in the best of ways, once the designer has researched the particular agents involved in the packaging process, he or she must become familiar with the trends of the clients to learn what preferences will determine the vision that the designer must bestow on the product. Figure 4 exhibits some of the common trends nowadays.

Figure 4. Popular product trends among clients, adapted from Mintel (2007).



Some of the most common trends have to do with containers that are digitally connected to technologies that are used daily by consumers; containers that are 100% recyclable; containers that move away from traditional shapes and favor a better use of space and waste; and, finally, in tune with the ideas mentioned beforehand: the elimination of plastic. Once these trends are clearly identified among clients, the designer will be able to put them to use with the product he or she has been tasked to work with. According to Ciravegna (2019), responding to trends is to be mindful of the clients' taste, what seems attractive to them and what factors are indicative of success.

With this information, the designer can guide the production to respond to these factors, which will help expand the clients' market, attract new clients and users, while, at the same time, using their social conscience to create a packaging product that is responsible within its presentation of content. To these trends we must now add new communication functions, as identified by Giardina & Celaschi (2020), which focus on factors introduced by the 2020 pandemic and pay close attention to edible products like labels with the name and temperature of who handled the packaging; as well as new functional features such as shields for a box of food, designed to put around the plate and head while eating (Kharpal 2020 cited in Giardina & Celaschi, 2020). To find the solutions to the material needs and opportunities for containers and packaging, the designer must consider the following elements: the product, its content, its context, and its container.

Figure 5. Considerations for Product Packaging, adapted from Ciravegna (2019).

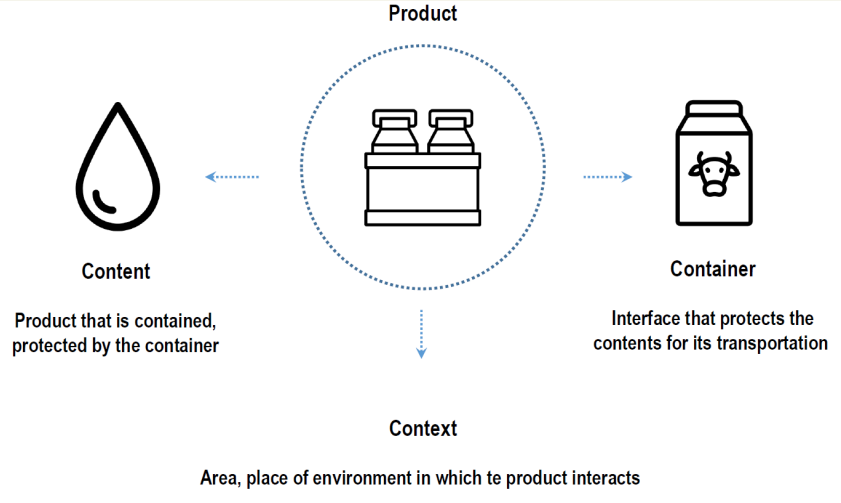


Figure 5 illustrates the product as a focal point to consider within the packaging process. This is the result on which improvements must be made. To identify the needs to which the product must respond, and the needs that they present, the designer must consider: the content of the product, which is to say, what does the container hold inside; the context, meaning in what kind of environment do we find this product and what other products does it interact with; and, finally, the container, in itself, what is the interface that products its content for its transportation.

Figure 6. Examples of considerations for product packaging

Figure 6 demonstrates an example of the elements that must be considered during the packaging process. In this example, the product in questions is a carton package named Tetra Brik®, of rectangular shape, made out of mix cardboard, with base colors blue and white, with labels of red, pink, and green color; its content is white milk; and its context is wholesale distribution, in a supermarket, in the dairy produce section, surrounded by other dairy products

diverse shapes and colors. Next, the designer must consider the development levels that consist of technical development and marketing development.

Figure 7. Levels of packaging development, adapted from Ciravegna (2019).

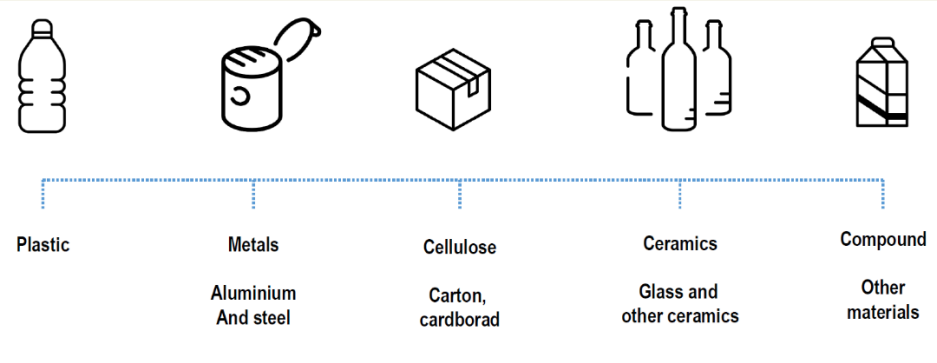
Figure 7 indicates two levels of packaging development that can be understood as an internal level and an external level. Internal packaging development corresponds to technical development and is made up of structural and material development. This considers flux, cost, labeling, among others. Development on an external level focuses on marketing development and considers the incorporation of brand, the composition of elements to differentiate the product at determined points of sale, among other factors.

In a similar way, the designer must consider the different typologies of the packaging artefacts that consider different types of containers, packaging, materials, and structures that are exemplified in figure 8.

Figure 8. Container and Packaging Typology, adapted from Vidales Giovannetti, 2003.

Figure 8 illustrates that container and packaging typologies are divided into three categories of primary, secondary, and tertiary nature. Primary typology corresponds to the immediate product container, it is the container or packaging that is in direct contact with the product. Secondary typology refers to the container of one or several primary containers. It must protect or provide information on the content inside. Finally, the tertiary typology corresponds to the container that helps distribute, unify, and protect the product through the commercial chain. In figure 9, some of these typologies are exemplified.

Figure 9. Packaging Material Typology, adapted from Vidales Giovannetti (2019).



It is worth considering that each container or packaging artefact has its own life cycle, regardless of its material, that is based on the attainment of the raw materials, the production of its containers or packaging, distribution, the use of the product and the end of its shelf life. The designer must be responsible with the following factors: the content of the container and/or packaging, its final user, the manufacturers and operators, the society, and the geographic territory in which said container and/or packaging will be installed and the environment in which it will leave its footprint.

With this in mind, the University of Santiago of Chile has placed its Industrial Design Workshop I in disposition of the small entrepreneurs associated to the sub direction of the economic development and entrepreneurial relations of the commune of La Pintana, to carry out a collaborative activity, focusing on the packaging of the entrepreneur's products. It is worth noting that, according to communal reports elaborated with the data of the Chilean Library of Congress (Biblioteca de Congreso Nacional de Chile, BCN), La Pintana is one of the poorest communes in the Metropolitan Region of the country.

4. Methodology

This study focuses on the packaging design for the entrepreneurs of small and medium business that make up the sub direction of the economic development and entrepreneurial relations of La Pintana, by the students of the Industrial Design I Workshop of the University of Santiago. This collaboration aims to provide an added value to the local trades and products of the entrepreneurs and present Design as a strategic tool, through packaging; encourage the use of Industrial Design in business and exert the social commitment in the discipline of design in future designers.

4.1. Participants

In this study, two groups participated: students and entrepreneurs, in the roles corresponding to designers and clients, guided by two professors of the Industrial Design I Workshop.

Students / Designers: Students of the Industrial Design I Workshop, of Industrial Design Technology, of the University of Santiago of Chile, divided into pairs.

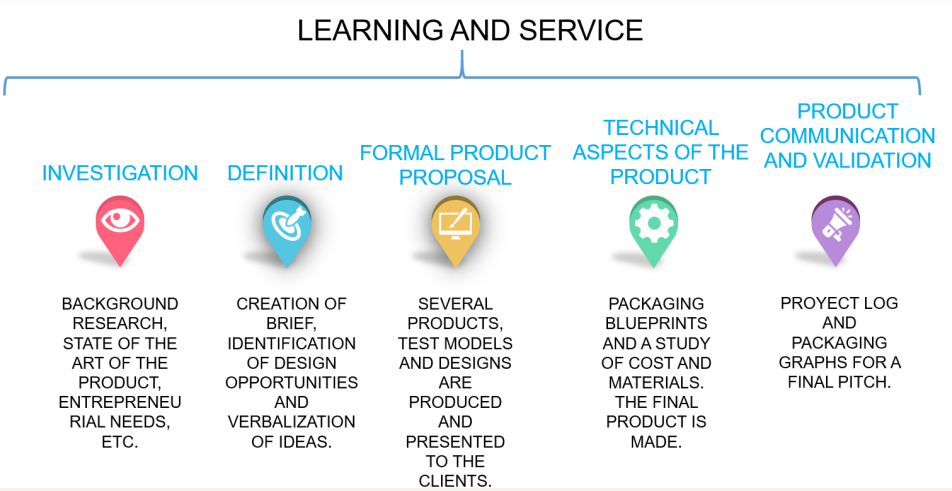
Entrepreneurs / Clients: Micro entrereneurs of La Pintana, associated to the sub direction of the economic development and entrepreneurial relations.

This collaborative activity took place during the fourth semester of the career, from August 2019 to January 2020.

4.2. Design Process

Students in the Industrial Design Workshop, within the career of Technology in Industrial Design had the responsibility of carrying out all the stages of design methodology, interacting with entrepreneurs from La Pintana in the phases corresponding to client presentations and feedback, in an activity oriented towards Learning and Service.

Figure 10. Phases of the Packing Process



The process depicted in figure 10 represents the five phases of the design methodology applied to the packaging design and development within a framework of Learning and Service. The steps, applied to this specific workshop, are as follow:

Gathering of information or Investigation Phase: This phase corresponds to the background research. This includes the state of the art of the packaging product, the needs of the entrepreneurs and the business niches, through interviews and field research. During the first phase of the activity, the students were asked to complete the following exercise:

Table 1. Investigation Phase in the Industrial Design Workshop I on Packaging

	Content	Container	Context
Background	History, Trade, Production, Statistics	Analysis of Current Packaging	History of place and entrepreneur; Points of Sales for the Products
Characteristics	Dimensions Geometry Chromatic Palette Materials Taste, Texture, Smell, etc.,	Does not apply	Does not apply
Cases	Does not apply	Analysis of Packaging that contain similar products. Analysis of Packaging Components that contain other products (i.e: zipper system)	Does not apply
Clients / Users	Does not apply	Does not apply	Type of Client / User to whom the product is directed. Instance of Consumption/ Use

Each pair of students in the Packaging Workshop had the responsibility of gathering this information to develop a presentation on the needs of the product they were assigned according to the client / user to whom they must respond.

Identification of the problem or Definition Phase: This phase focuses on the creation of a brief. According to Blyth, A., and Worthington, J. (2010), a successful brief is combination of five key solution areas, more than focusing on a perfect checklist, the key to successful brief has to do with the right combination of five key areas that create the right process between client and designer.

- Empowering the client
- Managing the project dynamics
- Achieving appropriate user involvement
- Using understandable visualization techniques

- Building appropriate terms.

This information makes it possible to identify design opportunities and to verbalize packaging ideas based on the product's attributes.

Formal Product Proposal Phase: In this phase, several design proposals are developed. Test models are made, and the designs are presented to the entrepreneurs.

Technical Aspects of the product Phase: In this phase, the package blueprints are made, along with a study of materials and costs and the packaging product is manufactured on laser cut machines.

Communication and Validation Phase: In this phase, a project log is made, complete with presentation posters. A graph of the packaging is made for a final pitch for the entrepreneurs.

5. Results

Each student in the Industrial Design Workshop I of the University of Santiago of Chile had the responsibility of carrying out all of the phases of design methodology for the production of communication design for a micro business entrepreneur of the commune of La Pintana. Table 2 depicts the specific organization of the students in their formative process, acting as professional designers, in relation to the entrepreneur of La Pintana, acting as clients. Table 3 specifies the individual trade that each designer/client team worked on, depending on the entrepreneur's product.

Table 2. Participants

Participants	N°
Students / Designers	12
Entrepreneurs / Clients	12

Table 3. Products According to Commercial Area

Team	Product	Commercial Area
1	Cakes	Food and Non-Alcoholic Beverages
2	Mote con huesillo*	Food and Non-Alcoholic Beverages
3	Shoes	Clothing and Footwear
4	Alfajores, cookies and cuchuflí**	Food and Non-Alcoholic Beverages
5	Jam, sauce and preserves	Food and Non-Alcoholic Beverages
6	Catering and Mapuche*** Gastronomic Products	Household
7	Mayonnaise	Food and Non-Alcoholic Beverages
8	Craftsmanship, Placemats and Saddlery	Household
9	Quail based products	Food and Non-Alcoholic Beverages
10	Leather based products	Clothes and Footwear
11	Leather based products	Clothes and Footwear
12	Baby clothes, maternity clothes, and baby accessories	Clothes and Footwear

*Traditional Chilean drink composed of dried peaches in peach juice and boiled wheat.
** Tube shaped desserts, with *manjar* (caramelized milk) filling.
*** Meaning “People of the land”, indigenous nation of Chile and Argentina.

As a result, the twelve students of the Industrial Design Workshop I of the University of Santiago of Chile presented their packaging products to their clients of La Pintana. Figures 11 and 12 show two instances of presentations. Figure 11 corresponds to the third phase of the design methodology, in which designers pitched their designs to their clients and received feedback and Figure 12 belongs to the final presentation, in phase five, in which they received validation and acceptance of their products.

Figure 11. Packaging and Labeling of Jams, Industrial Design

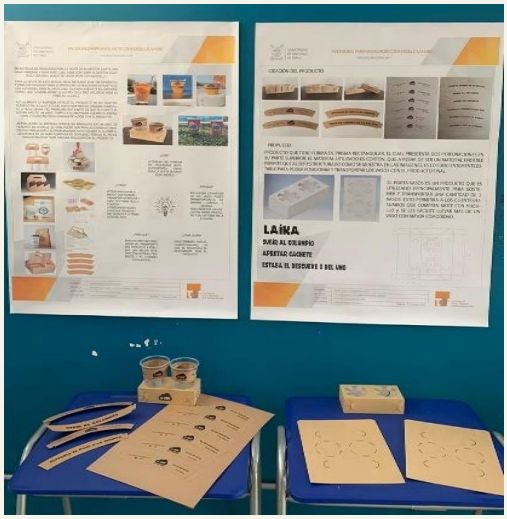


Figure 12. Packaging for cups for Mote con Huesillo

Figure 13. Students of Industrial Design and entrepreneurs from La Pintana

By the end of the workshop, each entrepreneur from La Pintana received a certificate of participation for a university activity, along with his or her product brief and their corresponding packaging product. On this note, in an interview with Reyes Salazar (2020), for the University newspaper *U. de Santiago al día,* Diego Valencia Núñez, a student from the Workshop, recognizes that the experience was “revealing” and claimed that “[as] designers, we work with everyone, we don’t make a difference and distinction. And we do it gladly”.

In the same interview, with similar satisfaction, Katherine Moraga, an entrepreneur from La Pintana, says, “I came here without any idea of anything. Now, I am happy because I will have a better chance going out into the market with a delicate, personalized, and visible container”. In the same way, another entrepreneur, Valentina Astete, adds, “La Pintana is a stigmatized and segregated commune, which is the opportunities that we have to learn, as entrepreneurs, are few. Now, we are leaving happy with our new knowledge” (Reyes Salazar 2020).

6. Discussion and Conclusions

This article presents a common paradigm of Industrial Design, in which design methodology is used to create products that foster entrepreneurship in small and medium businesses. In this model, the learning process of future designers are placed at the service of its community, working in collaboration with real entrepreneurs that are faced with problems that are unique to their social configuration, to create a product that is user based and exclusive.

This case study focuses on packaging, understood as a communication device and a strategic element that must fulfill the purpose of containing, protecting, and transporting a content, while at the same time attracting users. It is particularly important to note that, while packaging may not be a revolutionary concept, it is being put to use in a specific space in Santiago where Design is not a common element in entrepreneurial strategy, given that La Pintana is one of the city's most vulnerable locations. This experience is just one example of how beneficial collaborations between SMBs, and universities can be. Its result was an enriching and enlightening experience that serves as a model for future collaborative projects within the community by using traditional methodologies of design as an innovative strategy to identify and respond to changing consumer needs.

Given the limited knowledge of customers about innovation processes in the manufacture of eco-friendly packaging, it is essential to strengthen the collaboration between designers and entrepreneurs to create more sustainable and understandable results between the product and the customer. The ultimate goal of this is to respond to consumer needs which, in this case, correspond to concerns about the limits of natural resources and healthier lifestyles in the wake of the ravages of the COVID-19 pandemic. Of equal importance is to spread the knowledge of these ecological elements used in packaging, in an attractive and functional way, to communicate and justify the additional price of green packaging as a function of a product that the consumer is willing to pay and that supports the reactivation of the economy of SMEs in Chile.

These reflections allow for two important conclusions. First, Design is an extremely versatile tool, as much for the innovation of products as for the management of entrepreneurial strategies. Industrial Designers learn and work in service of their societies to foster growth in their communities, responding to specific social contexts with user-based products. Second, Design is still an unknown and under-used tool in business. The lack of information keeps small and medium businessmen and businesswomen in the dark as to ways to improve their businesses. The low expectation of the entrepreneurs in this workshop activity highlights the need to spread knowledge and bring Design closer to the community in order to develop businesses and respond to factors like aesthetic, function, sustainability, and communication. This also shows that there is a need for more collaborations in other areas where Design can contribute, such as strategy and innovation.

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