

# Novell coffee capsules, a family-owned company rethinking its business model



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TAGS: Compostable, food packaging, sustainable design strategies, Fair-trade.



# 1. Project definition

Compostable coffee capsules (Spain)  
2016 - 2018

Novell is a family-owned company born in 1958 as a coffee roaster and has managed to grow and succeed in the highly competitive coffee market. They have traditionally followed a B2B business model selling coffee in the “Horeca” sector, that means Hotels, Restaurants and Cafés. Their compostable coffee capsules have enabled them to expand into a B2C strategy. This product, which is first of its kind in Spain, has also allowed them to directly strengthen one of their core values, sustainability.

In 2016 Novell started to see the huge negative impact that traditional coffee capsules, a very popular product in the coffee market, were having on the environment because of the combination of an inorganic material such as aluminium or plastic and an organic one like coffee. Therefore, Novell decided to take on the challenge of creating a compostable coffee capsule. Their commitment to sustainability does not end at the Cradle-to-Cradle capsule design, but is reflected in every aspect of the product such as the coffee which is certified organic and Fair-trade.

The capsules are 100% compostable as are all the components: the capsule, the paper filter, the adhesive and the fair-trade organic coffee itself have all been carefully chosen to meet the necessary criteria. While the aluminum in other capsules on the market is recyclable, it relies on the user to empty the capsule of all the coffee and put it in the correct bin which defeats the commodity and convenience that capsule users are looking for in the first place. Novell’s capsules

are completely compatible with any Nespresso machine -the most extended format- and achieve a lower price than the average Nespresso capsule.

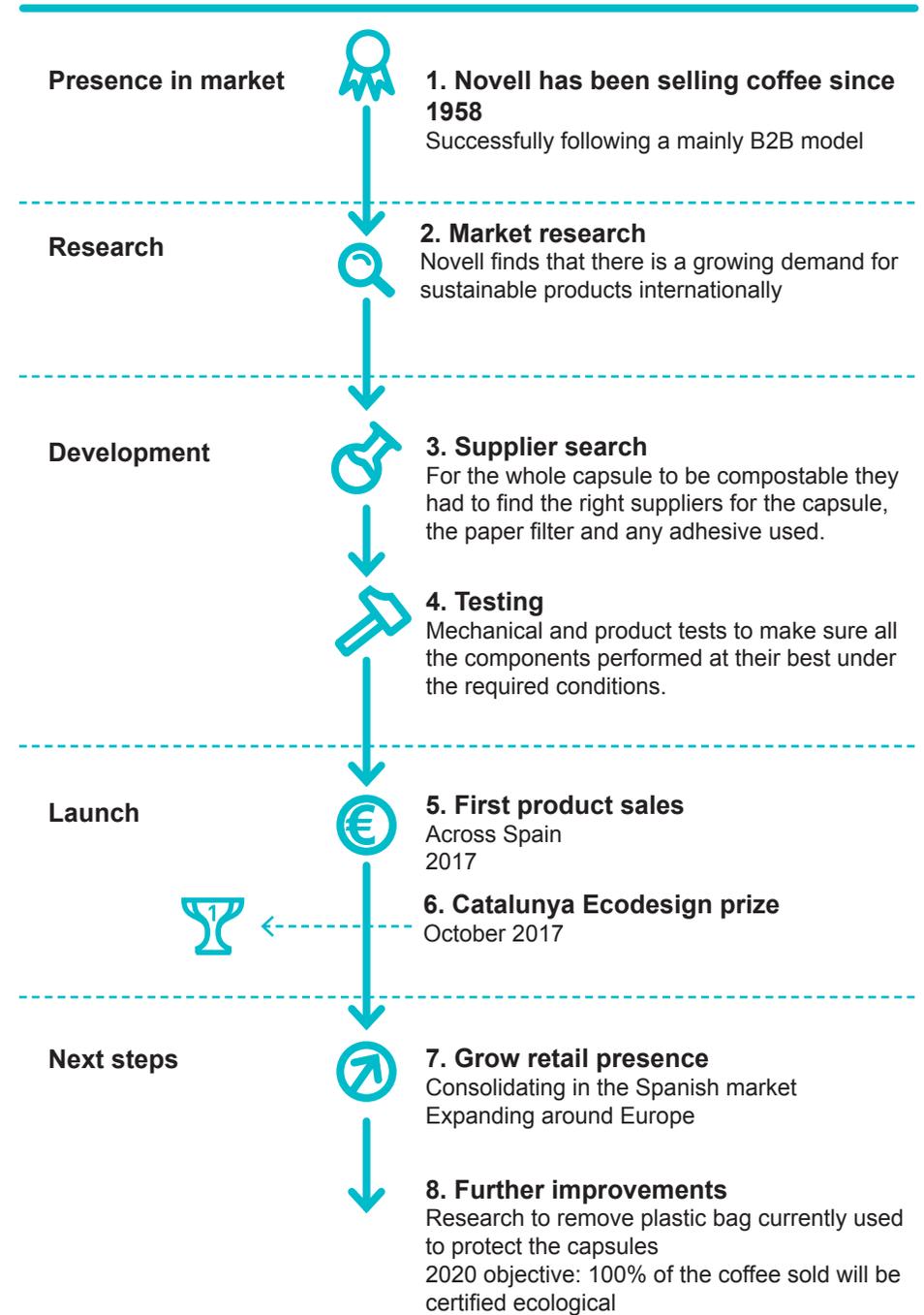
In order for the capsules to be completely zero-waste without compromising the quality of the coffee or the user’s experience, Novell put a lot of effort in the selection of suppliers. While many of them promised a suitable compostable product, they failed under the harsh conditions the capsules must endure when being used in the coffee machine. After hundreds of tests, a capsule made from compostable plastic sourced from corn met all the necessary requirements. The plastic pellets are supplied by BASF and the capsule solution by Capsul’in, a manufacturer from Luxembourg, who now supplies all of Novell’s capsules.

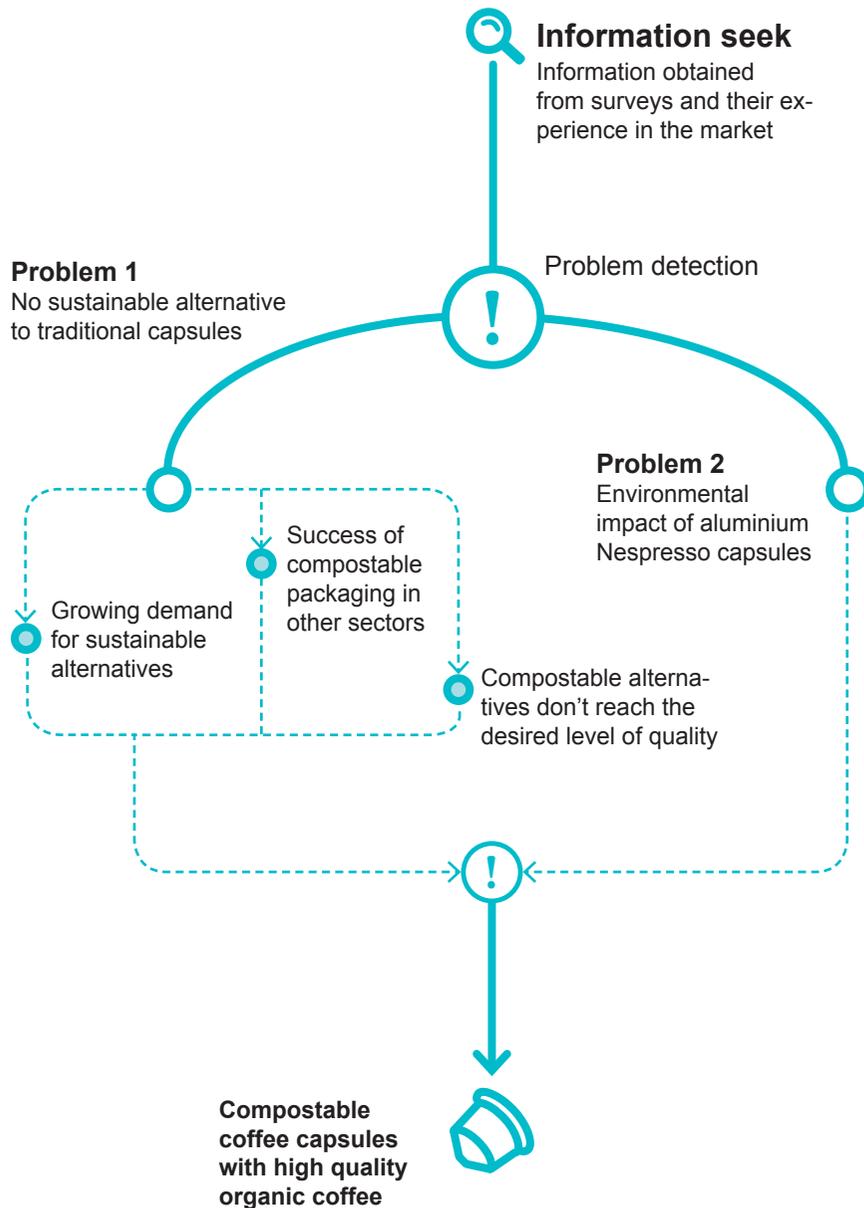
Currently, Novell’s capsules are now being sold in multiple retail chains around Spain such as Veritas or El Corte Inglés. They are now expanding into Europe by working with international distribution chains that will stock their products abroad. They are also trying to expand their customer base by introducing the product into public administration offices as their sustainability values and vision are usually in line with Novell’s.

Novell’s aims to be viewed as a competitive, quality member of the coffee capsule market with an average price and a high sustainability value while also being a great example of organic, zero-waste products.

KEYWORDS: B2C, B2B, bioplastic, compostable, supplier research

# Timeline





## 2. Research

The convenience of the Nespresso capsules for users has made them very popular. Preparing a coffee with them is fast, clean and provides a good quality result. Their main issue is the huge environmental negative impact that they cause, because of the complicated recycling of the aluminium-coffee mixed waste.

Although the responsibility of the action falls on the user, the cause of the issue is a design flaw. The capsules are popular in a market of busy individuals and it is convenience they are after, which clashes with the fact that to be recycled the capsules must be opened and emptied. Nespresso provides this recycling service, but requires the consumer to return the capsules to the shop. The reality is that none of these actions are usually done, so a material of a great quality such as aluminium is usually lost in a container mixed with organic waste.

It is important to consider that every cup of coffee generates 3g. of aluminum waste and their consumption is growing 9% per year.

Although there are alternatives to aluminum capsules, none of the materials present a sustainable option for consumers. Novell's research found there was a growing interest of both general and coffee consumers in sustainability through international studies.

They also found that similar products to compostable coffee capsules had found success in Switzerland and the UK, and that there was an apparent motivation towards sustainable products not only by the standard consumers but by governments through regulations. Their experience in the market and their supplier's

also gave great insight when it came to the possible success of the product.

The results of the research phase made it apparent that it was not only an untapped place in the market but also desired by consumers and necessary environmentally.

**KEYWORDS:** Direct observation, experience.



NOVELL  
L'ESPRESSO

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NOVELL  
L'ESPRESSO

Novell took over a year to perfect the blends out of a pool of more than 150 for which they tested the grinding, the roasting and the amount of coffee in each capsule, to get a product that stood out not only because of its sustainability but also its quality-price relation.

### 3. Analysis

As the MG, once Novell identified the opportunity of compostable capsules, they had to ensure they had the necessary capabilities within the company to launch a product that was so new to both them and the market, as well as to find the appropriate suppliers to create the high quality product they wanted to bring in.

Novell is comprised of a directive team which oversees the company, a quality and production department which ensures the product is up to the standards of the company and a marketing and design department which works on the product being commercially successful. Every agent within the group was involved in every stage of the development which ultimately resulted in a successful product.

The MG set a series of requirements for the design that later informed the decisions made about the product and the suppliers.

From the beginning they knew they not only wanted a biodegradable product but a compostable one. An important requirement was for the quality and flavor of the product to not be jeopardized during the process.

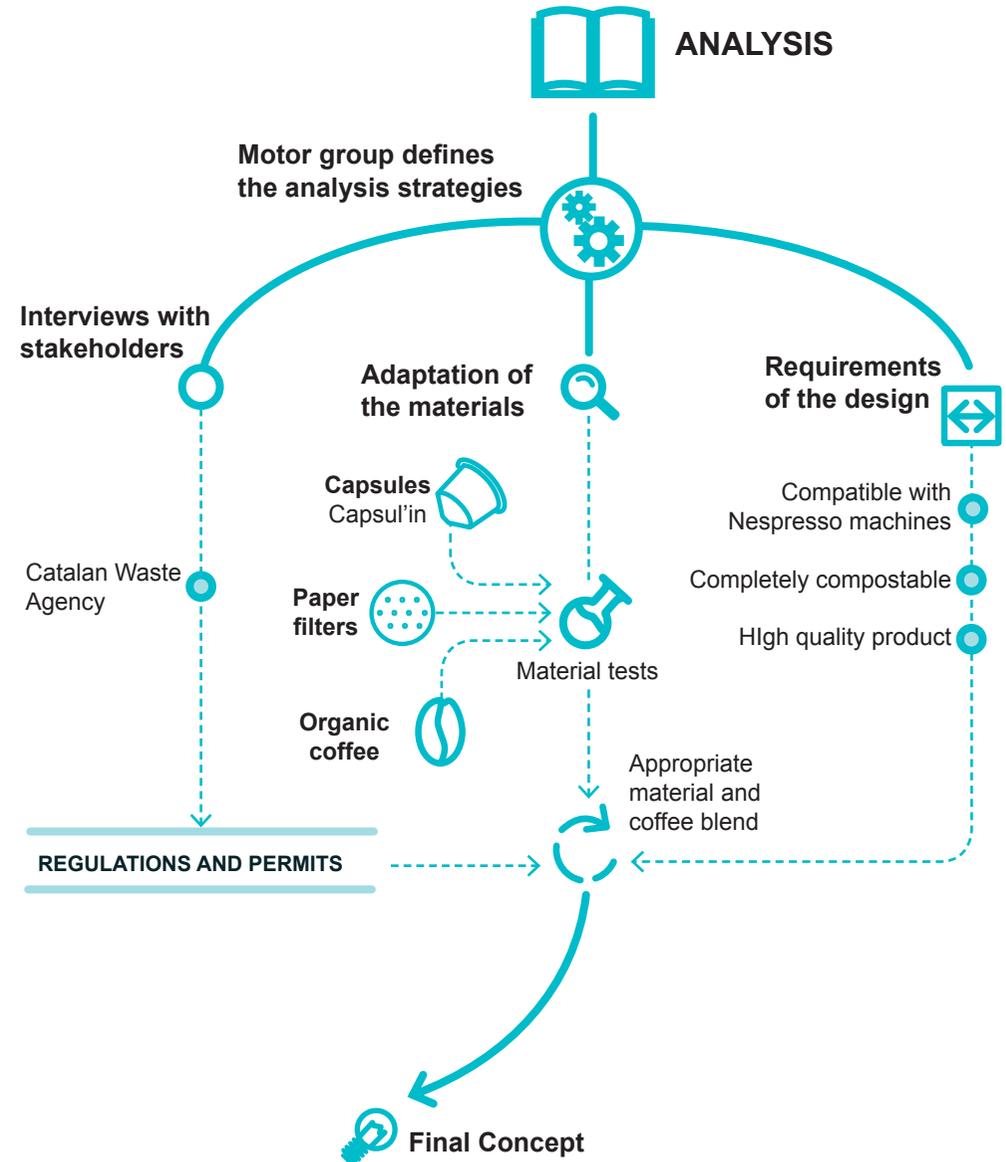
In order to guarantee this aspect, they had to perfect the product as the capsules presented a new coffee making process which required great attention to the type of coffee, the degree of the roast, the amount of coffee per capsule and how finely it was ground. Another criterion was for the capsule to be compatible with Nespresso machines and to ensure it didn't cause any faults short-term or long-term in the machine, which would make the consumers lose trust in

the product and the company. This meant the materials used had to endure conditions such as high temperatures and pressures without losing its effectiveness.

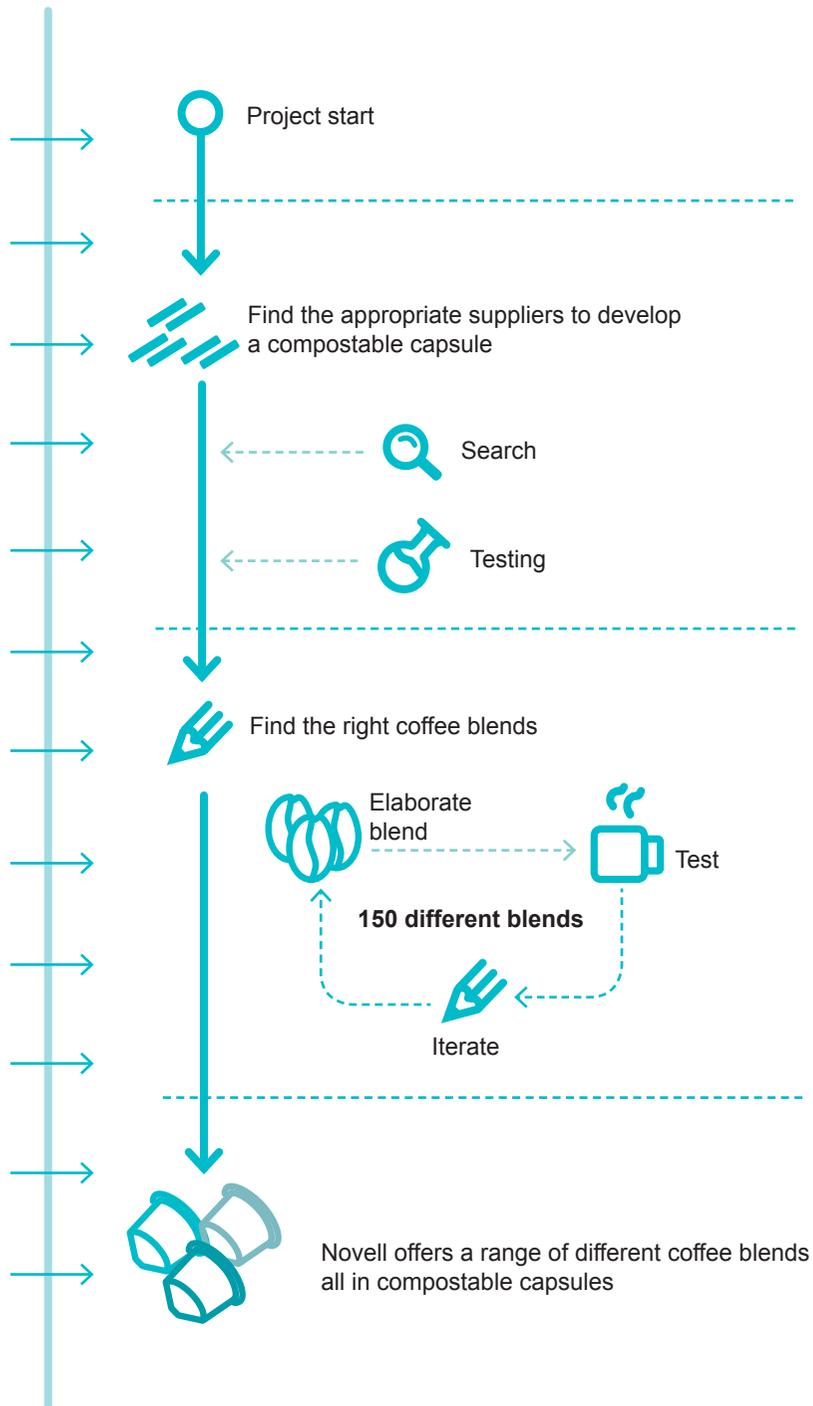
In order to develop a product that met all these criteria, Novell assessed the materials of multiple suppliers which mostly failed the mechanical tests they underwent. Capsul'in passed all the standards and was thus chosen as the supplier of the capsules, which are made from a material supplied by BASF. The paper filters were also carefully chosen to meet the same requirements and around 150 blends of coffee were tested in order to guarantee the quality that characterizes the brand.

As a result of this process, the compostable capsules went into production resulting in 3 million capsules sold to date, and entered the market. Since then Novell has won Catalonia's Ecodesign Award (Premi Catalunya d'Ecodisseny).

**KEYWORDS:** Interviews with stakeholders, material tests, supplier research.



The MG has the task of checking the result of each of the phases before moving on to the next



## 4. Concept

The fact that the compostable capsules had to be compatible with Nespresso machines meant that there was not much room for an innovative design aside from the material selection.

Because the Nespresso capsule patent recently expired it was relatively easy to devise a final design for the capsule in terms of shape, size, etc. but as previously mentioned, this involved a huge effort to find the right compostable plastic, paper, etc.

The aspect that required most attention in the design was the blend of organic coffees, as it had to be carefully tried and tested in order to make sure the flavor of the coffee was not diminished by the process the capsules go through.

Compostable plastic tend to not resist the contact with high temperatures, so it was a great challenge to get a result that worked correctly inside the coffee machine.

Thus, as explained in the previous section, Novell took over a year to improve and achieve the right blends out of a pool of more than 150 for which they tested the grinding, the roasting and the amount of coffee in each capsule, to get a great result with the specificities of capsules, different from the ones that ground coffee or coffee beans need. Novell now offers a range of blends for their capsules.

**KEYWORDS:** Standard design, trial and error.



The Novell compostable coffee capsules allowed the company to reach other markets besides the Horeca one, with capsules that are being sold in some of the biggest retail chains all over Spain and soon around Europe. Similarly to other Novell products, businesses purchase the capsules online or from Novell's customer service, which has enabled Novell to introduce their product into big corporations or public administrations that want to reduce the impact of the coffee their workers drink.

## 5. Prototyping

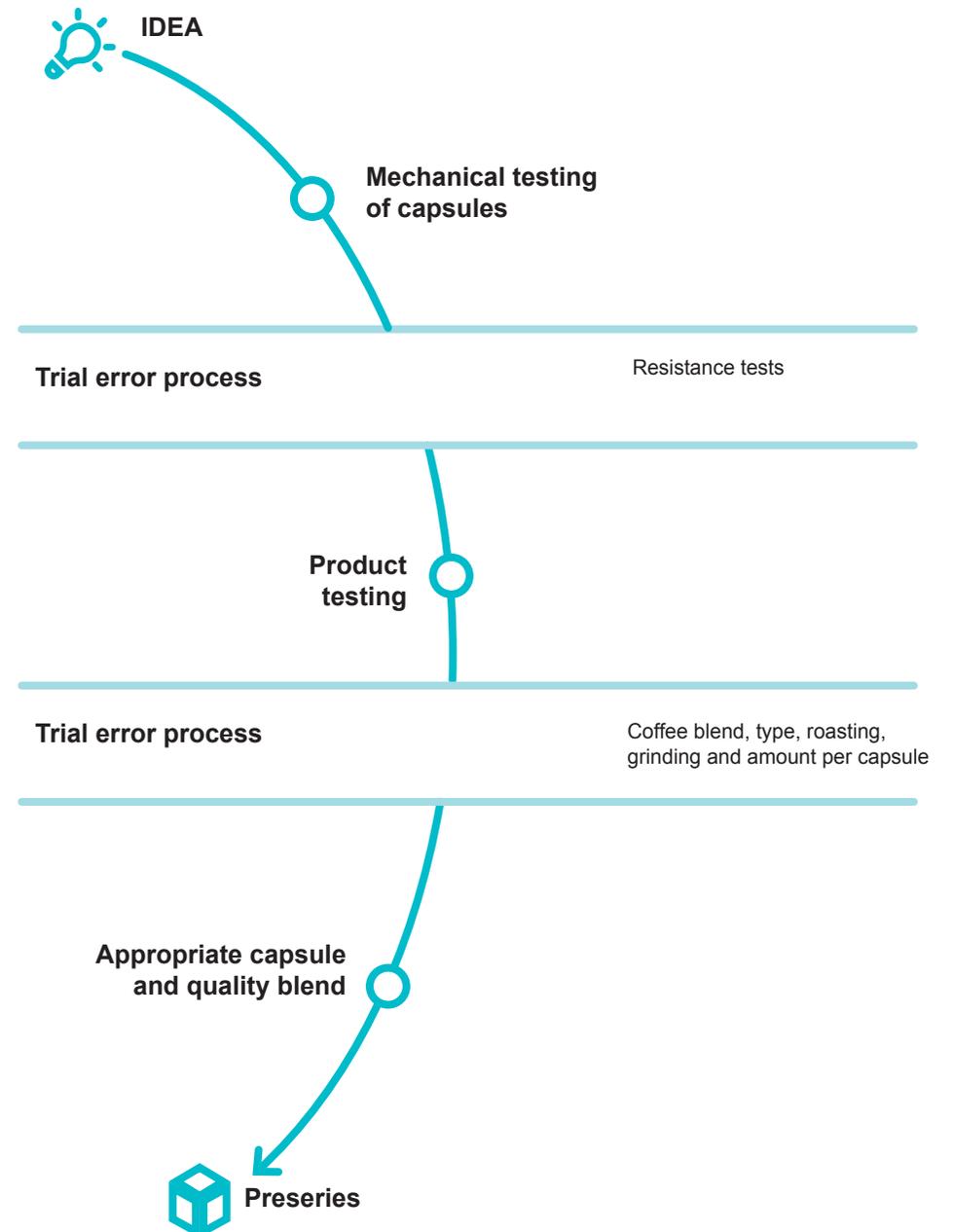
Unlike the conceptual stage, the prototyping phase was the one that had the most effect in the development of the Novell's product. The product both underwent mechanical and product testing in order to determine the appropriate suppliers and coffee blend respectively.

The mechanical tests consisted in testing the different materials against the pressure, temperature and humidity the capsules had to be able to endure. Multiple suppliers which promised a compostable effective product failed the tests which resulted in Capsul'in being the chosen supplier as it surpassed the necessary characteristics of the material.

The product testing regarded the coffee blend, which as explained before was a long and tedious process in order to ensure the quality was up to the companies standards. The coffee preparation process used when using capsules affects the coffee differently to any other as thus the coffee's every attribute had to be detailed to excel as a product.

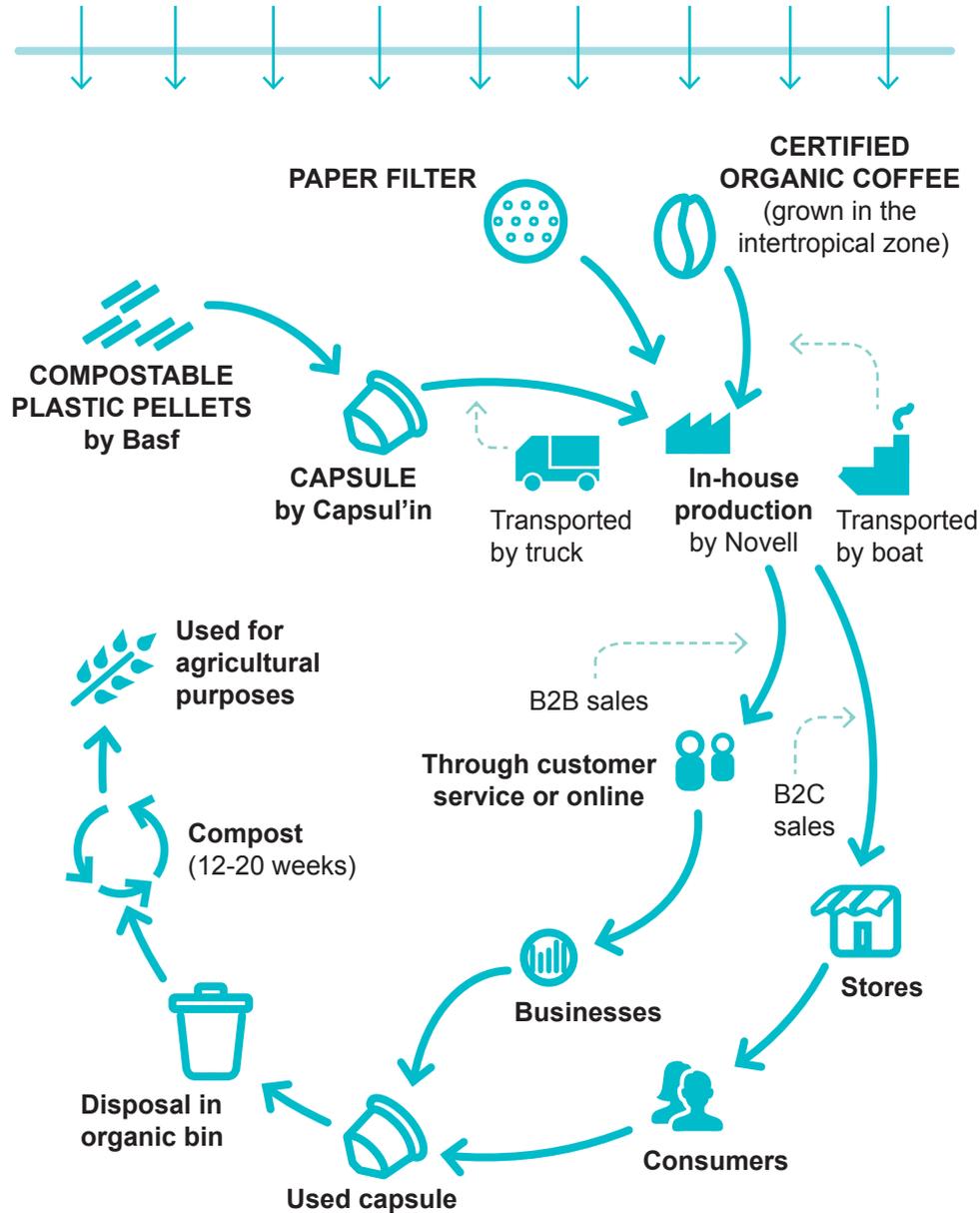
The result of this stage that involved hundreds of tests of materials, blends, suppliers etc. became a product that assured the quality that Novell wanted to achieve, in the desired price range and with the environmental aspects that were established as a goal, facts that demonstrate the importance of the prototyping phase they designed and followed.

**KEYWORDS:** Material tests, product testing.



## Novell

The MG coordinates the project and the role of the different actors.



## 6. Project

From the start Novell's compostable capsule was designed in the shape of a circular system. This required great efforts in finding the right materials that both portrayed the philosophy of the company but also withstood the conditions which capsules must endure. Thus, finding the appropriate suppliers became essential. This project was innovative in the sector and very ambitious, exceeding the internal capabilities of Novell, so picking the right travel companions was strategic.

Novell outsources the production of their capsules to Capsul'in which are supplied the compostable material in the shape of pellets from Basf. The capsules are then shipped to Novell by truck along with the paper filters and the certified organic coffee, which is grown all along the intertropical zone and transported to Barcelona by boat.

Once all the necessary components arrive at Novell, they fill the capsules with the carefully chosen coffee blend and the finished coffee capsules are packed for the consumer.

While most of the Novell's products are sold employing a B2B strategy, the capsules facilitated a B2C model, allowing the company to reach distribution chains and supermarkets.

They reached mass market by offering a product with a great price-performance ratio that also fits well within a responsible purchase criteria in response to the growing numbers of consumers who are

worried about the impact of the products they buy. Anyone can find the Novell compostable capsules at multiple retail chains all over Spain such as Veritas or El Corte Inglés and soon around Europe.

Similarly to other Novell products, businesses purchase the capsules online or from Novell's customer service, which has enabled Novell to introduce their product into big corporations or public administrations that want to reduce the impact of the coffee their workers drink.

Once the consumers have used the capsule, it can be disposed of in any organic waste bin. The capsule will take 12-20 weeks to decompose, fact that considering a system that reintroduces the organic waste as compost, as we have in most of the European countries, it can be used in agriculture or to fertilize parks and improves the circularity of the product.

Novell would like to manifest the they wish to lead this change of mindset in the producers of coffee in capsules, which will bring about a global improvement when other competitors adapt to sustainable systems. It should be everyone's wish.

**KEYWORDS:** Bioplastic, compostable, compost, food packaging.

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