



Innovation in Action

INTRODUCTION

The Premium Products, Startup Lab and TechFuture programs, from the Department of Innovation, Science and Technology of the State of Rio Grande do Sul (SICT) have published this book as a way to show case and recognize the State's capability for technological development.

This e-book "Innovation in Action" is a survey of several initiatives from 2020, which aimed to show the innovation in the main economic activities in the State and the major investment in knowledge and the unique qualities of the products that resulted.

The scope of the Premium Products program was products or lines from companies in the food and drink industry that had high added value and used this as their marketing strategy. Startup Lab covered startups based in the state that were already in operation

and were looking to scale up their business. These were divided into two categories: general startups and startups with a social impact. The case studies in the TechFuture program were about technology transfer between Science and Technology Institutions (ICTs in Portuguese) and companies who were interested in next generation technology that could be applied to production sector.

We hope that these initiatives not only highlight the innovative potential of Rio Grande do Sul and people of this state, but also can serve as an example and inspiration for further initiatives that are looking for technological and innovative solutions to make products, processes and services more and more competitive. We hope you enjoy reading it!



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FOOD & DRINK



Theme: **FOOD & DRINK**

Category: **MEAT AND MEAT PRODUCTS**

APROCCIMA PRESTIGE BEEF



Company: Aprocampo Carnes Especiais Ltda.

City: Caxias do Sul

www.aproccima.com.br

www.estanciadoassador.com.br/carnes

aproccima



The Clarice farm was started in 1935. It was a pioneer in introducing winter cultivated pastures, confinement finishing (1970s), and origin tracking. It has always provided standardized animals with high quality carcasses. However, despite producing a special product, the farmer received very little benefit for all their effort. It was clear that this was not something that they could improve on their own: so the farmers of the Campos de Cima da Serra Region had to work together.

In the 1990s, due to a technical visit, as part of the Federation of Integration and Experience Exchange Clubs (Federacite), they learned about the work of the Citeano Movement, an initiative that began in Rio Grande do Sul in the 1970s. This was a way to boost agricultural production, where producers met monthly and worked together to test out new technology and exchange experience. The Citeano Movement served as an example for them to follow.

CITE 120 was created in the region of Vacaria in 1997. It was the initial group for a larger organization. Aproccima (Association of Rural Producers of Campos de Cima da Serra) was created as a result of many meetings and technical visits, organized by CITE 120.

They realized, when they looked at the situation that many farms were producing high quality beef, which met the most important customer requirement, it was tender. The big challenge, however was to find customers willing to pay more for quality.

The decided to connect all the links in the chain. Aproccima's main objective was decided. The main objective was to organize the production chain and ensure that the profits were evenly balanced between the three main contributors: the farm, the processor and retail. Therefore, they realized they also needed to strengthen the production chain, because experience had shown that one weak link could compromise the entire system.





Starting with their commercial partners, their first issue was to find a slaughtering company that could meet all their specifications and implement all their controls, and would adopt the association’s philosophy. Those who run the meat packing company that processes their product is also a member of Aproccima. The second issue was to find retailers willing to pay more for the meat. Butchers who signed up to the scheme were given banners and marketing material. The consistent quality of the meat was successful in increasing and retaining the clientele. Two retail establishments were opened by members.

In addition to the quality of the meat, it was also important to establish a new concept, based on the environment, sustainability, food safety, animal welfare and social commitment. A concept that suited the latest market trend for more expensive products that were able to show that they were produced sustainably. In 2013, seven Aproccima farms received a certificate of compliance with Good Agricultural Practices, unprecedented at that time. That year, retailers began to sell traceable meat. This is how “*Aproccima Gourmet*” meat came about, based on a consistent commitment to quality and supply.

Animal production is designed to combine agriculture with livestock and forestry, in perfect harmony with pastures and native forests. The animals are born in fields of native vegetation, which provide various types of forage that are typical of the southern Atlantic Forest biome. After weaning, the calves are taken to pastures cultivated with high protein and energy value. Confinement finishing ensures that the meat has the perfect amount of fat and marbling in animals before their permanent teeth come in. They are given a healthy and natural diet, appropriate to the agriculture and climate of the region. Their feed is balanced and composed of high roughage and low concentrates, all to keep the natural organoleptic characteristics of the beef, those that the human senses can perceive, unchanged.





This intensive and sustainable production, where waste fertilize crops and pastures, also ensures greenhouse gas emissions can be mitigated. The system, as a whole, sequesters more carbon than it emits, which benefits all of society. In addition, all stages of the process and all parts of the chain are managed and monitored to ensure that everyone is fully committed to providing customer satisfaction.

Even with an organized chain in 2018, ten producers opened a store with the aim of presenting meat to consumers as a gastronomic delicacy. The first step was to find a way to demonstrate the meat's traceability, and then to introduce a new and innovative product line of cuts.

It was also soon noticed that the beef produced in the Campos de Cima da Serra Gaúcha has special sensory characteristics that could help it to develop a niche in the market. It is what the French call "*terroir*". Once we include its historical-cultural heritage, we can establish a Geographical Indication.

The prospect of conquering a new market niche took Aproccima's associates to France to learn about Indications of Origin and Designations of Origin. During their visit, they came across a label used to certify products of superior quality, called the "*Label Rouge*." The idea of the "*Aproccima Prestige*" label was initially to provide a connection between the meat and a good life and an enjoyable meal.

The result was that "*Carne Premium Prestige (Prestige Premium Beef)*" was introduced in 2019, exclusively to Aproccima. Its supply is limited and it is produced especially to suit more refined palates. The production process is previously established and strictly controlled. The farmer must be certified as following best practice and must use all the techniques and selective genetics to ensure the correct marbling and degree of tenderness. Tracking begins with the data on the parents of the animal and includes all the information relating to production and slaughter before it reaches the consumer. Requirements such as breed, slaughter, fat content, cooling, and pH are also controlled to highlight the best taste characteristics.

Much of this information is available to the consumer through tracking. The "*Prestige*" label already covers these concepts within the production process. The next step is to verify the score for each type of cut, expressing tenderness, flavor, and juiciness.

"*Aproccima Prestige*" beef is certified to have been produced through Good Agricultural Practices (BPA in Portuguese), and the industry is certified as using Good Manufacturing Practices (GMP in Portuguese) through the Safe Food Program. These are the two properties used to certify animals with the "*Prestige*" seal, and in return, the farmer can achieve 25% above the market price.





Theme: **FOOD & DRINK**
Category: **OLIVE OIL**

EXTRA VIRGIN OLIVE OIL
BATALHA BLACK



Batalha

 Company: Azeite Batalha Agroindustrial Ltda.

 City: Pinheiro Machado

 www.azeitebatalha.com.br

 azeitebatalha

 azeitebatalha



The inclusion of Batalha Black 250 ml olive oil on the market was preceded by the theoretical design of the basic characteristics of the new product and relied on the entrepreneur's previous experience in the market insertion of other formulations of Extra Virgin Olive Oil (EVOO). When the Batalha Black 250 ml Olive Oil was launched, the company targeted it as a Premium Food using established specific marketing concepts. They targeted specific market niches to present it as a superior quality gastronomic speciality.

The second issue was the planning for the image and distribution of the product, in particular the volumes, packaging, portions, and distribution to those customer markets they had identified. The third item was setting the final price to the consumer. They needed to take into account the value of the brand and ensure they could get the maximum price to reflect the added quality. As the company sold other EVOOs, it was able to focus on those quality attributes that the customers appreciated and were willing to pay extra for.

While researching customer opinion, the company held tasting sessions for consumers, both in food shops in São Paulo and at various food fairs. They also obtained specific technical advice from olive oil *sommeliers*. During these open innovation events, many EVOO producers could interact with consumers, which made some essential contributions to after-sales, as well as providing consumers with ways to contact them through social media or other means.

Batalha Black Olive Oil (250 ml) has the sensory and physical characteristics and essential ingredients to make it a superior product, and has received international awards. It is an extra virgin olive oil, which is produced to recognized phytosanitary, hygiene and health standards, which are verifiable and traceable. It is also based on a high-tech production process that uses the latest machines and equipment. Therefore, the olives are always harvested at the Optimal Maturation Stage, which ensures it has unique and superior characteristics, such as a high content of polyphenols and oil and low water content, which prevents oil oxidation, and the refrigeration of the olives in the press. It is also a product based on responsible processes, a total quality approach, good production and manufacturing practices, as well as complete and unrivaled respect for environmental and social standards, as well as all other legal requirements for production, transportation and sustainable consumption.



The principle unique attributes of Batalha Black Olive Oil (250 ml) are an unusual balance between a bitter taste, a fruity and spicy aroma, and very low acidity. The sensory description of Batalha Black Olive Oil (250 ml) also stems from the harmonious blend of the Coratina and Frantoio varieties, a unique blend in Brazil. Therefore, the bouquet is fruity and intense and reminds us of the aroma of green fruit, in particular notes of banana. It also has the natural gifts of a complex olive oil in the hues, which combines with the fruit and the notes of white flowers. In the mouth, the permanence of these aromas is emphasized along with notes of dry nuts and almonds, combined with a bitter taste similar to that of freshly cut field herbs. There is also a noticeable spiciness, which ensures that this EVOO is fluid, with a very pleasant sensation as it passes through the mouth. It also has a great balance between these characteristics, a volume adequate to the rarity of obtaining in small quantities, generated in special harvests, with specific lots and cultivars. At the end of the tasting, the persistence of the flavor is exalted, with an aftertaste reminiscent of dried fruits, spices and an incremental appeal of the spicy element at the end of the consumption experience.

Batalha Black Olive Oil (250 ml) is produced at the Guarda Velha farm, located in the municipality of Pinheiro Machado, in the Pampas biome, situated in the Campanha region of Rio Grande do Sul. It is known for the concept brand, Paralelo 31, and adheres to the highest standards for environmental safety, legislation and governance. It has strict control and quality assurance from start to finish, from the olive grove to the press, where this Premium EVOO is extracted and sent to the retail market.

The approach for producing Batalha Black Olive Oil (250 ml) was carefully planned, based on the business's innovative ideas. The design was based on a requirement for superior quality ingredients, high quality agricultural industrialization and the development of the right blend that combined superior aroma, flavor, and spiciness. In order to be considered a Premium Food, it was essential, during this process, to learn from the National and International Institutes of Science and Technology, along with selected external consultants. This set of management measures made it possible to institute the identification and segregation process for olives with higher levels of polyphenols, responsible for flavor and aroma, which are more markedly present in certain cultivars and in certain olive grove lots, as well as a higher percentage of spiciness.





As a result, we were able to select olives from cultivars from different orchards, in order to help with the taste testing, when blending them together. This process of composing the new formulation was long, exhaustive and documented. Technically, domestic EVOOs are less balanced and can be fruitier or less intense to the average taste of the Brazilian consumer. More developed palates appreciate the high concentrations of polyphenols, because as well as being more flavorful and full-bodied, they are also good for your health. These characteristics must be traceable and replicable, and can be evidenced by several laboratory analyses of physical, chemical and sensory properties.





Theme: **FOOD & DRINK**
Category: **MILK AND DAIRY**

DESIGNER CHEESES

CANTO QUEIJARIA

CANTO
queijo feito com as mãos

 Company: Canto Queijaria

 City: Barra do Quaraí

 [canto.queijaria](#)



Canto Queijaria is the life's work of its owners, a couple whose previous careers were in fashion and advertising. The couple produce craft and designer cheeses at the São Miguel estate, located in the municipality of Barra do Quaraí. The estate is owned by the family, which has been producing milk for over 40 years. A little over a year ago, the couple decided to start cheese production.

They do not create and produce cheese from the usual recipes, but instead they use innovative designer concepts. The most recent recipe, for example, is called Jarau, a tribute to the legendary Cerro do Jarau, which is the only area of relief in the vast Pampas. Jarau is a small, hill-shaped cheese that contains an infusion of Guaviroba tea, a local native herb. All the cheeses are made from raw milk and are infused with the many stories and innumerable flavors of the Gaucho Pampas region. In addition to the Jarau, there are also the Madrueiro, Pampeano, Hermano, Aragano, Bumbo and Sereno cheeses.

The product quality begins by ensuring the herd is healthy: all the cows are free from tuberculosis and brucellosis, and all the milk undergoes periodic laboratory tests. With the quality of the milk ensured, the cheese production process begins. This also undergoes monthly laboratory analyses. Whey is the only waste generated during production, and since it contains a high nutritional value, it is used to feed the calves of the herd.

With a high added value, the strategy of producing mature aged cheeses is already paying off. Before the cheese production began, the estate only sold raw milk to large industries at very low prices.

Today, with only 3% of the total milk production destined for cheese production, the product already corresponds to approximately 20% of the total income of the property.



As a comparison, for each liter of milk processed as matured cheese, Canto Queijaria achieves a financial return of 4.5 times the amount paid per liter of raw milk destined for large industries. As a result, the family generates extra value for the farm. This shows the clear difference for small farmers between fighting over pricing and adding value.

The value of the product sold today can be up to five times that of a simple artisanal cheese, thus equaling the prices of cheeses produced in nationally renowned places.

For the production of cheese, a great development effort was necessary, and according to its founders, the greatest difficulty was educating the consumer:

“We feel that there is a latent demand for artisanal cheese made from raw milk. Many people are curious and want to taste and consume it. However, raw milk cheeses have some differences, which the vast majority are unaware of. And, therefore, we need to explain, talk, communicate on social media, and teach them about all this. The cheeses we make also have natural molds, which for many customers still seems strange, when compared to known industrial products.”





Currently, cheeses are sold in the main capitals of Brazil, such as São Paulo, Rio de Janeiro, Curitiba, Florianópolis and Porto Alegre, in addition to more than twenty inland cities. The main sales channel is the dairy's social media channels, with the products sent via carrier. Specifically in Uruguaiana, a city near Barra do Quaraí, where the cheeses are produced, sales are also done through the local farmer's market and by supplying five other grocery stores/emporiums. Customized refrigerators were installed at the physical sales locations to identify the cheese company and act as a show case and exhibition corner.

Canto Queijaria is the project of an entrepreneurial family that uses its artisanal and designer cheese to fly the banner of what they believe in and to tell the story of the Gaucho Pampa region.





Theme: **FOOD & DRINK**
Category: **YERBA MATE**

MATEQUERO

BRAZILIAN TEA INFUSIONS

inovamate

-  Company: Inovamate
-  City: Ilópolis
-  www.inovamate.com.br
-  inovamate
-  inovamate

Drinking Tea has been a habit for over 4,000 years. Yerba mate (*Ilex paraguariensis*) is a traditional plant from southern Brazil and South America, whose best-known product is *chimarrão*, which is associated with the gaucho culture. However, it can also be consumed as mate tea and in many other ways. Inovamate, from Ilópolis, a city known as one of the main producers of this crop, were looking for a new way to make this product more attractive for the Brazilian market in other regions. They wanted to present yerba mate in different ways and come up with opportunities to promote the plant, which is a symbol of Rio Grande do Sul, to the rest of Brazil.

Inovamate is a family company that supports the company incubator system at the University of Passo Fundo. It belongs to third generation Yerba mate farmers. To take advantage of the many ways of using this plant and in order to design new yerba mate drinks, in May 2016, the company started using research and technology and combining nature and science to find something different to what was currently available.

Inovamate noticed that consumer behavior was changing over the years. They were increasingly interested in more natural and conscious products. They also wanted to encourage people to drink tea for pleasure, since consumption was mostly oriented towards health issues.

The company's solution was to produce blends of types of tea and yerba mate, by mixing in fruit and spices in order to produce flavors that would be typical for each region. They aimed to combine yerba mate with flavors that were characteristic of the local culture. As a result, they came up with five different blends: Matequero Sul (with apple, raisin and cinnamon), Matequero Sudeste (with coffee, cranberry and licorice), Matequero Centro-Oeste (with buriti, pineapple and ginger), Matequero Norte (a combination of orange, pink pepper, and fennel) and Matequero Nordeste (with coconut, cocoa nibs and star anise).

Matequero tea blends also have chemical characteristics that bring benefits to the consumer. Analyses, carried out together with the University of Passo Fundo, discovered ferulic acid and high concentrations of polyphenols, which have antioxidant characteristics that fight free radicals and skin aging. Another substance found in the analysis was chlorogenic acid, which is useful in controlling glucose (and therefore in fighting diabetes) and for weight loss, while theobromine and caffeine, which are also present, are powerful stimulants.



What motivated Inovamate was a different way of looking at yerba mate and all its potential, which goes beyond *chimarrão*. They wanted to cross borders and have people from cultures other than our own drink it.

A product line such as Matequero teas, with its varied ingredients, some of them little known to the general public, required research, better quality ingredients, and new growing technology. This encourages farmers to continue farming, encourages the younger generation to stay on the land and gives farmers the opportunity to supply, not just commodities, but products with added value.

In addition to the research carried out at the University of Passo Fundo, by the Food and Chemical Engineering (the Department of Engineering and Architecture) and Pharmacy (Institute of Biological Sciences) faculties, the Company also looked into the geography, history, culture, and gastronomy of each region when designing the blend, in order to obtain the ideal ingredients for each location. They conducted a review of over 90 articles.

All this attention to enhancing the product has had significant results: a 100g Matequero packet of tea, bought directly from the company's website, is equivalent to up to three times the return on normal loose yerba-mate.





Product development started with the construction of a business plan, through consulting with SEBRAE/RS. The company, which is a family business, is the product of a company incubator at the University of Passo Fundo. The relationship between the company and the university has been strengthened by the studies into yerba-mate drinks. These studies demonstrated the significant potential and versatility of the product. However, due to the size of the investment required for juice production, the creation of a line of specialty teas, in partnership with the university, emerged as a viable alternative. The research was fundamental in identifying the ingredients, the particle size and the processes to be used for each blend.



In order to produce the product, the company had to change its production line, which was dedicated to producing yerba mate for chimarrão. The leaves, humidity and other conditions for yerba mate for use in tea are different from that for chimarrão. They also needed to find suppliers for the other quality ingredients that were needed for the product they wanted. They also needed to consider the most suitable packaging to maintain the quality of the product, its composition, and reduce its exposure to light to a minimum.





Quality control begins in the field with Good Agricultural Practices, including traceability. The basic raw material for the teas, the yerba-mate, comes from Ilópolis (the city that produces the most yerba mate in the state), where it is produced by small farmers, and that is where Inovamate has its own production. The company works with SEBRAE, in traceability programs, and in the Juntos para Competir (Together to Compete) program. They also take part in the Ecological Farmers Group focusing on yerba mate, through the Ecovida network.

The company studied the best way to position its product on the market. That have been raising awareness with customers by working with some of the main tea sommeliers in Brazil and creating an experience for tourists called the Yerba-Mate Caravan, where tourists from all over the country visit the region to learn about the product and yerba-mate.

To reinforce the brand, Inovamate was present at tradeshows such as Expointer, Expodireto, at IUFRO - World Congress on Forestry Research, in the area of socio-biodiversity products, and at Mesa São Paulo, considered the largest gastronomy congress in Latin America.

Finally, the Matequero - Infusão Brasileira Line was developed to popularize yerba mate as an enjoyable tea in its own right, but also to make it an increasingly specialized culture. They wanted to give drinkers of yerba-mate tea an experience as refined and satisfying as Pu-erh tea (exquisite Chinese post-fermented red tea), fine wine, quality olive oil or specialty coffee.





Theme: **FOOD & DRINK**
Category: **MILK AND DAIRY**

LANGUIRU ORIGIN MILK

LANGUIRU

 Company: Cooperativa Languiru

 City: Teutônia

 www.languiru.com.br

 [cooplanguiru](https://www.instagram.com/cooplanguiru)

Before they started Origin Milk, Cooperativa Languiru, located in Teutônia/RS, were already producing UHT milk in packaging that could be traced using a QR Code to identify its origin and confirm its quality. However, the process was controlled from industrialization to sale. This feature was designed to alleviate concerns about the quality of the milk processing, but it did not add much value and was sold at similar prices as its competitors on the same shelf, who did not support any customer tracking. Between 2013 and 2017, incidents of adulterated milk made consumers suspicious of milk in general, even premium brands.

Although the Languiru brand was not involved in any cases of adulteration, there was work needed to demonstrate the origin and quality of the Cooperative's milk to the public. The Cooperative has about 6,000 members and 3,000 employees. It has been involved in many different businesses over its 65 years.





There were two options for the cooperative: try to compete on price or address and integrate its production chain to provide a new and identifiable product for the market for their commodity. The option chosen was to create room in the market.

In 2017, Cooperativa Languiru agreed a partnership with the multinationals SIG Combibloc and Siemens, and established the brand Leite Origem (Origin Milk). To receive the Origin label, milk has to be collected and packaged within 24 hours, with stricter standards for quality and handling the milk by the suppliers. The result is milk without any added stabilizers, which has particular characteristics - pure, fresh and flavor. The production and bottling standards are innovative for the milk industry.

The cooperative chose five properties as a pilot, located close to the Cooperative's industrial park, to ensure that they could meet the required bottling time. These farms were part of the programs managed and run by the Cooperative, which cover everything from farm management and dairy processes all the way to transporting the milk. The Cooperative's own technicians audit the parameters of food safety, animal welfare, sustainability, food conservation, sanitary control of the herd, and hygienic behavior in the milking environment and milk storage environment. In fact, producers associated with Languiru receive an extra bonus for the quality of the raw material, encouraging effort in the field.

Leite Origem is the only milk in Rio Grande do Sul that is traceable using an individual QR Code on each UHT one-liter carton that can be scanned by a smartphone. For the project to be possible, the professionalization of the production chain was essential.

Languiru and its partners in the project conducted a full market and feasibility study, which also involved the Cooperative's Research and Development department. From there, Languiru envisioned a market differential with the presentation of Leite Origem, an innovative and unique product with a final value 11% higher than the traditional Languiru.



CONTENTS



Theme: **FOOD & DRINK**
Category: **OLIVE OIL**

EXTRA VIRGIN OLIVE OIL

OLIVAS DO SUL



 Company: Olivas do Sul Agroindústria Ltda.

 City: Cachoeira do Sul

 www.olivasdosul.com.br

 OlivasDoSul

 azeitesolivasdosul

Olivas do Sul, the first extra virgin olive oil sold in Brazil.

Brazil is one of the largest consumers of extra virgin olive oil in the world, but until 2010, it had no production of its own. As a result, the product sold in the country, all of which was imported, was, to a large extent, of questionable quality. Therefore, there was a market opportunity.

In 2006, Olivas do Sul was born and decided to implement its orchard, with the objective of developing quality extra virgin olive oil in Brazil. Until then, there was no national production. A lot of research and study was needed to implement it. To learn the culture, it was necessary to hire Italian consultants in the agricultural, pruning and extraction areas. Throughout the process, there was support, through the exchange of information and research, from the Federal University of Rio Grande do Sul (UFRGS), the Federal University of Santa Maria (UFSM) and the University of Perugia, in Italy. The objective was to produce the first extra virgin olive oil in Brazil, although there were some doubts as to whether the business would be viable. It was a considerable risk at the time.

After years of studies on how to adapt the culture in order to achieve quality production, in 2010, a single varietal Arbequina was produced. It was a domestic pioneer ready to be grown locally. The variety produced an early harvest, which meant that a small press had to be imported hurriedly, so that this audacious project could produce some extra virgin olive oil in Brazil. At this time, knowledge about this process was limited in Brazil. Even though it had just been produced, it was included in the Italian Guide Flos Olei as the only Brazilian olive oil, and stayed there until 2015.

Although people were curious, it was difficult to explain to consumers in 2010, why a Brazilian olive oil, grown in the soil of Rio Grande do Sul, would be better than most imported products. It was necessary to invest in the brand, through participation in competitions abroad and in international guides that qualified the product, breaking the prejudice barrier. Arbequina has become the company's most sought-after oil, having received more than a dozen awards over the years.





Olivas do Sul continued to invest in product differentiation to access markets with high added value. In 2018, it sought to innovate again by introducing the single varietal Coratina to its product line. Even before it was introduced, research suggested that it would produce an olive oil with different sensory characteristics and that it would likely be able to adapt to being grown here. This variety produced an oil that was popular with those who enjoyed a stronger flavor. It was more noticeably bitter and spicy.



OLIVAS DO SUL

Coratina is a variety of Italian origin, which presents a medium/intense fruitiness, with hints of vegetables and dried fruits, with high intensity bitter and spicy notes. This variety has already received six awards in competition. Among them was the L’Orciolo D’ouro competition in 2020, which recognized the company with a special award for being an Innovative Oliviculture Company and growing Italian varieties in Brazil.

Olivas do Sul has tried to restore century-old trees, so that they can help with production and not just as part of the farm landscape. Olivas do Sul has therefore tried to show that by improving the soil you can grow fruit from old trees. This is how the company has taken advantage of these trees to produce a higher priced product aimed at a niche market. The implementation of Blend Oliveiras Centenárias (Centennial Olive Trees Blend) was a way for the company to respect and thank these trees.





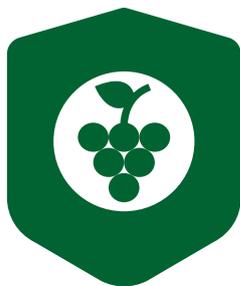
Blend das Centenárias was launched in 2019. It is a unique and unusual olive oil; a limited edition produced from 66 trees that are over 100 years old and still producing.

The idea of saving old olive trees has a great deal of environmental appeal, and so, despite its limited production, the oil has been very popular and received a silver medal at Brazil IOOC. Of Portuguese varieties, it is a medium/intense fruity oil, reminiscent of fresh vegetables, legumes, and red fruit, with medium intensity bitter and spicy notes.

In order to ensure proper care in the orchard to provide healthy fruit, improved quality control is required for all varieties. The harvest point is earlier, guaranteeing a more potent and lasting oil, with cooling of the fruit and immediate extraction in a controlled temperature environment. The press is designed to allow greater control over the oil to be extracted. It is then stored in stainless steel, cooled vats until it is time to be bottled. After bottling, the product is kept in a cold chamber between 16 and 18° C.

As a result, extra virgin olive oil production increases every year, not just by Olivas do Sul, but throughout the state of Rio Grande do Sul. As production is still well below the size of the potential market, the oil is sold online, through selected points of sale or directly and it is priced much higher than the extra virgin olive oil normally found in the supermarket.





Theme: **FOOD & DRINK**
Category: **JUICE AND FRUIT**

ORGANIC GRAPE SKIN FLOUR

ORGANOVITA



 Company: Econatura Produtos Ecológicos e Naturais Ltda.

 City: Garibaldi

 www.organovita.com.br/index.html

 organovitaorganicos

 organovitaorganicos



In order to get extra value from their raw material and provide something new and different, the company developed Organic Grape Skin Flour, made from the organic grape skins of their burgundy grapes used to produce Organic Grape Juice. After the juice is extracted, the skins are separated and dried, which makes for a better flavor and better quality.

In general, grape skins are a waste product from juice and wine production; normally they have less useful destinations. As a producer of organic grape juice since 1996, Econatura sought to expand its product line. Through research, the company realized that the grape skins and seeds are rich in compounds that are beneficial to human health, which led to research to find a way to make the use of this waste.

Grape skin flour has many benefits, including high fiber content, which helps to regulate digestion, and the high antioxidant content, such as resveratrol, which helps to prevent heart disease. Antioxidants are also useful in combating premature aging, helping to reduce cholesterol, and improve blood circulation.

While developing a technique to separate and dry grape seeds to produce oil and flour, the company realized that they could also use grape skins. Therefore, in 2013, the company's nutritionist began a Master's Degree in Biotechnology and Wine Management at the UCS (University of Caxias do Sul), in order to study how to produce flour from grape skins. By 2015, they knew enough about the nature and composition of this product to begin development. As it required some innovative designs, the entire process of separating, drying, and grinding the skins was developed in-house. The product was finally launched at the Bio Brazil Fair 2016, in 2016, under the Uva'Só brand.

In 2020, the flour adopted new packaging to fit the latest market trends (100g pouch packaging, ideal for individual consumption) and became Organovita. While the Uva'Só brand was designed to be sold to large chains, Organovita is aimed at premium markets such as smaller stores selling natural products. It is not common to use 100g packaging for this type of product. This sort of positioning adds value, and is more suitable for the trend for smaller packaging for the final consumer. It means the flour to be displayed in stores in a more appropriate manner. In addition to Organic Grape Skin Flour, the line also includes Organic Grape Seed Flour and Organic Apple Flour.

Econatura are therefore positioning the flour, produced from what was previously waste, alongside products that are rich in fiber, such as oats, granola etc., aiming it at customers who are willing to spend more on food in order to improve their own health. This means a greater financial return than selling it directly to other manufacturers as a raw material or as fertilizer, which was where the waste preciously ended up.

It is also noteworthy that Econatura's product is the only organic product on the market so far.

By comparison, the price of the 100g pouches is half the price of the 500g packages sold by other brands (which are not organic). Revenue from the pouches is therefore 2.5 times greater. Organic certification also allows Econatura to aim for the more demanding customer. The product earned the company an increase of up to 15% in its sales since the launch, either by direct sales, or by increasing the company's visibility.

It is an exclusive product in Brazil. It has drawn interest across the country and abroad, because of its high concentration of antioxidant and because it is pure, without any additives. It is rich in fiber, it has a high concentration of polyphenols, including resveratrol, which is very effective, and it is certified as organic by Ecocert, which is accepted in Brazil, the USA and Europe.

The entire production process, from the organic certification of raw material suppliers to processing, is carried out in accordance with the Hazard Analysis and Critical Control Points (HACCP) and Good Manufacturing Practices systems. HACCP is a process management and control system that is focused on food safety. It aims to identify and manage physical, chemical, and biological risks, from the production of ingredients to the finished product. It works preventively to ensure due care regarding quality. The flour is sold directly to customers online or through stores and supermarkets all over Brazil. It is also sold in large volumes as an ingredient for manufacturers, and in 2020, it began to be exported to the United States. The product is advertised through the company's social media and printed distribution, aimed at health professionals.





Organic grape skin flour has enabled Econatura to turn waste from production into something new, that can be sold to demanding customers, willing to pay more for something with health benefits. As it is organic, it becomes even more valuable. Research and innovation were essential for the company to be able to achieve this. They had been looking carefully at their range of products and were therefore able, not just to follow trends in the market, but also to lead them.





Theme: **FOOD & DRINK**
Category: **CRAFT BEER**

GLUTEN-FREE ORGANIC CRAFT BEER

STEINHAUS BLOND ALE



 Company: Cooperativa Agropecuária de Produção e Comércio Vida Natural

 City: Picada Café

 [cervejariasteinhaus](#)

 [coopernaturalorganicos](#)

 [cervejariasteinhaus](#)

Aiming at a niche market not yet served, SteinHaus brewery created the Blonde Ale Steinhaus gluten-free beer, the only organic beer in Brazil certified and naturally gluten-free, because it is made with rice.

The Steinhaus brewery targets a well-informed audience who are to pay more for craft beverages that are brewed differently and have different returns. The brewery is part of the Coopernatural cooperative. It only uses organic grain grown sustainably on land near the brewery by farmers in the Serra Gaúcha region. Ricardo Edson Fritsch, the Director of the brand, commented that farmers respect the environment; they diversify the crops they grow within the same area and support biodiversity in the fields:

“We don’t plant just barley in the one field; we always intercrop it with others, such as mate or araucaria. This happens all over. We don’t worry about weeds anymore; in fact, we help them grow in our fields, because weeds are important for a good harvest.”



Since its foundation in 2004, Coopernatural has always produced organic products. Over the years, the cooperative realized that the more products they had, the greater the interest from shopkeepers and consumers. Many of the products launched by the cooperative are still not found in conventional grocery stores, and its customers are characterized as demanding and curious for high quality new products. According to Ricardo, in organic production the biggest challenge is having a partner farmer, who is willing to challenge himself and produce organic grain. They need to spend a lot of time negotiating with the farmer and being quite clear and serious about what they want to achieve. “We are a 16-year-old company. Now farmers trust us, but for the first ten years, they needed a lot of work. Today, we are the eighth best-known company to organic consumers in Brazil, but this has taken a lot of effort from many people.”

Today, the cooperative produces 177 products, of which 21 are beers. To enter the brewing industry, they needed to invest in employee training on producing non-conventional beer, and in the latest equipment to improve the sensory and visual aspects of the product. Specialist agencies in design and development were hired to ensure that the products would meet the requirements of the intended customers.

Blonde Ale SteinHaus gluten-free beer, as well as being the only organic beer in Brazil, is the only naturally gluten-free beer because it is made from rice only. The rice goes through a craft malting process, in which it undergoes controlled germination and is then dried. This way, the starch in the grain partly breaks down and the enzymes that help with brewing are activated. This gives it its particular characteristics such as color, aroma, and flavor. No chemical additives are used to help extract the gluten, and all the rice used comes from cooperatives. As a result, it is totally organic and sustainable.

The company has been certified as organic, which involves an auditing process approved by the Ministry of Agriculture, and conducts laboratory analysis to ensure the beer meets safety and quality standards. All the beer sold is accompanied by an invoice, the organic certificate, and in the case of gluten free SteinHaus Blonde Ale, a laboratory report on the batch that confirms that the product is really gluten-free. This is all designed to provide assurance to the retailer.



STEINHAUS BLOND ALE



Innovation in Action

The beer is sold mainly in stores, emporiums and restaurants that specialize in organic, natural, celiac-suitable, vegetarian and vegan food. The price to the final customer is higher than traditional Blonde Ale, which the company also produced. The latter is already priced higher than other available lagers. With the differential of offering only beers with organic ingredients and with a wide variety of labels, the company has been consolidating itself in the competitive and sophisticated craft beer market.

The director summarizes the product in a few words: “In ecological agriculture, we grow produce based on the principles of nature, always working with it. We only interfere with nature to correct the imbalances that man causes, and the plant corresponds with beautiful and tasty fruits, because everything is done with love. We produce because we enjoy growing produce, and when you do something that you really enjoy, you do not even think of it as work, it’s just satisfying. Gluten-free Blonde Ale beer is a combined effort that has resulted in a product never made before. Success is never comes without plenty of effort and dedication. ”





Theme: **FOOD & DRINK**
Category: **CACHAÇA**

VELHO ALAMBIQUE

CACHAÇA



 Company: Ivandro Remus ME (Velho Alambique)

 City: Santa Tereza

 www.velhoalambique-rs.com.br

 [cachacariavelho.alambique](https://www.facebook.com/cachacariavelho.alambique)

 [velhoalambiquecachacaria](https://www.instagram.com/velhoalambiquecachacaria)



Velho Alambique is located in Santa Tereza, where cachaça has been produced for over 100 years. The city is a national historical and artistic heritage site.

Before Cenário, the company only had two types of cachaça; both were cheap to produce and were not aged for very long. The company identified that other traditional cachaça producers started to launch products with different flavors, obtaining good positioning in niche markets. Velho Alambique realized therefore that, although they were a small producer, they needed to invest in technology and improve quality. This led to the creation of products such as Cenário cachaça, which was a specific blend from barrels with unique flavors, and updated packaging to reflect the heritage and history of the area.

Cenário Extra Premium Cachaça was produced in 2009 from a specific set aside batch from that year's harvest to produce an extra premium cachaça. Cenário is a cachaça aged in French oak barrels for four years, and after that, for another year in grábia and angico wood barrels. This mixture of flavors and aromas has helped to produce a unique cachaça for the Brazilian specialized spirit market.

As well as being a drink aimed at a more discerning market, Cenário Extra Premium Cachaça includes a tribute to the history of drink producers, a story in which an entertainer summarizes the history of sugar cane and cachaça production and people's dedication and appreciation of it.



Nosso Cenário é a pequena cidade de Santa Tereza, na Serra Gaúcha. Com diversos prédios históricos tombados pelo IPHAN. Neste espetáculo somos o malabarista, personagem que nos representa nesse produto. Ele conta nossa história, através de muita dedicação e apreço pela cana. A cachaça envelhecida durante cinco anos em barris com blend de três madeiras: carvalho, grábia e angico. Combinação única.





The drink, which is a limited edition and sold in numbered bottles, undergoes strict quality control all the way to the consumer. The process also begins in the field, with soil correction and certification of organic production, including milling and fermentation using imported yeasts and temperature control to separate the distilling parts (head, heart and tail). Finally, after all this, it is aged in quality barrels.

The packaging for Cenário was developed through a special project with specialist companies. The bottle was designed in France and the lid was imported from Portugal. The packaging for this product made in the city of Santa Tereza, listed by the National Historical and Artistic Heritage Institute - IPHAN, is like a stage that opens for a performance.

The Velho Alambique distillery, as well as its cachaça being certified as organic, has also won many national and international awards in the last four years, such as the Gran Ouro at the World competition in Brussels in 2018 with the cachaça Blend and the Grande Ouro Nacional with the cachaça Carvalho in 2019 at Expocachaça.

The product is sold throughout the Brazil through emporiums, supermarkets, restaurants, distributors and specialized websites. According to the CEO Ivandro Remus, “Customers who buy Cenário usually contact us to find out more about it and how it was produced. We always get positive feedback on the quality.” The high added value can be seen by the financial return of the product, more than ten times that of a traditional cachaça sold by the same company.

The Velho Alambique distillery shows that innovation, dedication and an entrepreneurial spirit, it is possible to create a product of excellence that can receive awards and recognition internationally, even for small producers.





Theme: **FOOD & DRINK**

Category: **RICE**

WHOLEGRAIN ORGANIC BIODYNAMIC
CATETO RICE

VOLKMANN



 Company: Volkman Alimentos Ltda.

 City: Sentinela do Sul

 volkman.com.br

 [volkmannelimentos](https://www.facebook.com/volkmannelimentos)

 [arrozvolkman](https://www.instagram.com/arrozvolkman)

The Capão Alto das Criúvas farm is an agricultural business located in the municipality of Sentinela do Sul, 30 km west of Lagoa dos Patos and 100 km south of Porto Alegre. It is owned by the Volkmann family. João Batista has been cultivating biodynamic rice since 1983, as well as vegetables and fruit, and rearing cattle and buffalo for the meat industry.

Volkmann Alimentos is a pioneer in Brazil and was established in 1999 to process and package biodynamic rice to specific quality standards and specific organic and biodynamic certification standards.

Biodynamic production, developed in 1924 by Rudolf Steiner, is an agricultural method that, as well as taking into account organic practices, does not use chemical fertilizers, herbicides, genetically modified seeds, antibiotics or hormones. The natural fertilizers used are made from medicinal plants, manure and silicon, and are prepared, buried in the soil, and left to the elements. Natural fertilizers are made in two ways: those that are sprayed on the soil and plants and those that are inserted into compost or other types of organic fertilizers, such as biofertilizers and manure. It is always prepared at the winter solstice, which is when the mineral crystallization forces are most acute.

The purpose of rice production using the biodynamic method is to provide the consumer with a food that contains all the nutrients in its composition, which are lost in conventional methods due to pesticides and poor soil.



Volkman Biodynamic Rice has been certified by IBD Certificações since 2002, in accordance with the Demeter seal, recognized worldwide as ensuring the highest organic agriculture standards required by Brasil Orgânico, the USDA and the EU. Volkman Alimentos and the Capão Alto das Criúvas farm have been part of the Ecovida Network since 2018. This is a pioneering voluntary certification scheme in Brazil, which involves everyone that produces, buys and sells the products in question.

Wholegrain cateto rice was first planted in 1983, as part of a scheme to preserve local seeds. It is the result of a cross between the wholegrain versions of the Cachinho and Formosinha varieties. It is sold in vacuum-packed packages to preserve its color, flavor and texture. This prevents wholegrains going rancid when exposed to the air and infestation by weevils, insects that feed on rice.

For product development, Volkman Alimentos invested in assembly equipment, a dryer, silos, mill for processing, packaging and a flourmill. The company uses an internal laboratory, Good Manufacturing Practices and the Hazard Analysis and Critical Control Points (HACCP) System, and is always on the lookout for new standards to improve quality.

The company's marketing strategy is to speak directly with the organic/biodynamic market and maintain a relationship with their customers by providing them with information on the types of rice and what makes them different. This relationship is based on direct contact by phone, e-mail or messaging apps and by taking part in trade shows.

The company chooses not to have representatives and intermediaries in the production and sale process. Sold throughout Brazil, the products are present in health food stores, restaurants, and small markets and even in large national retail chains. The average sales volume of Wholegrain Biodynamic Cateto Rice is 16,000 kg per month, and is the variety with the highest price among those produced by Volkman, 50% above similar ones available on the market.

This has enabled Volkman to achieve a market position in a niche area that is not met by mainstream companies. It shows that it is possible to add value and be innovative in a well-populated industry and respect the environment.



Innovation in Action

STARTUP LAB



Theme: **Startups**
Category: **Startups in General**

ANOTA AI



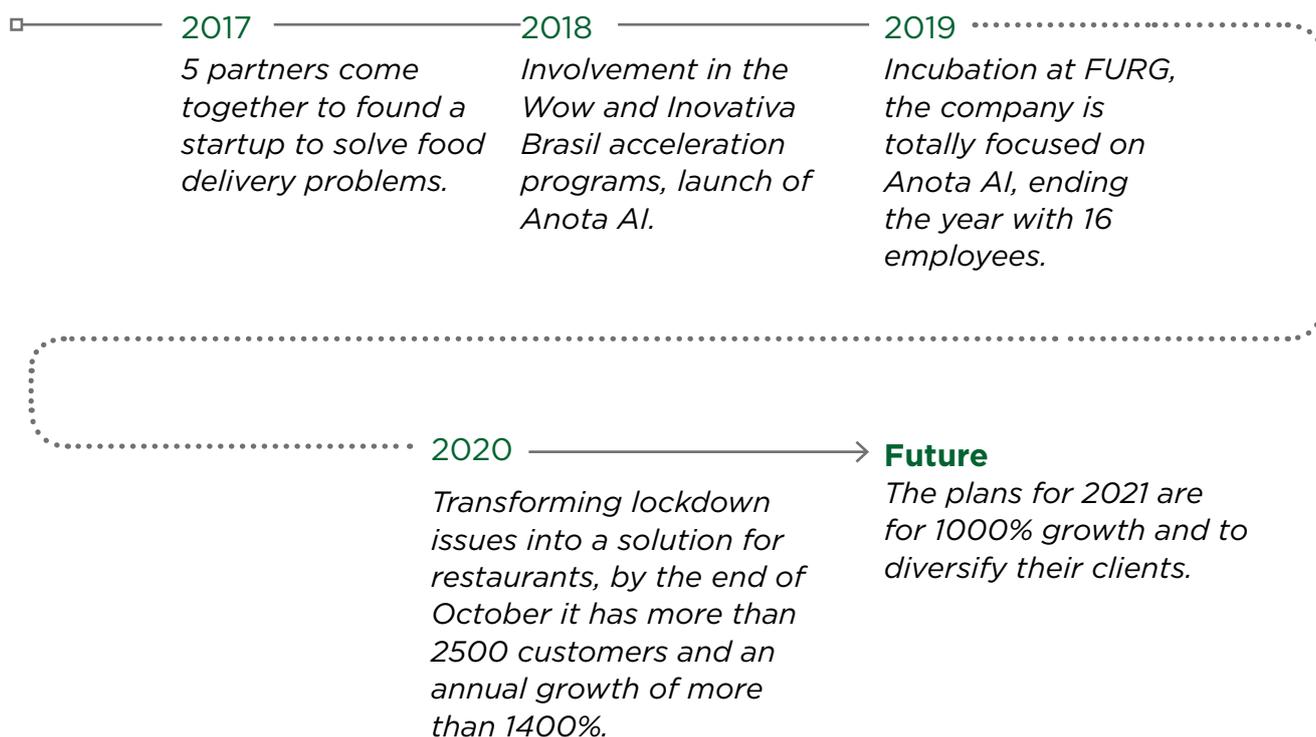
anota AI

-  Category: Foodtech
-  Beginning of current model: November 2017
-  Employees: 60 (including the five partners)
-  Customers: 2500 base customers (commercial premises) in 26 states + the Federal District
-  Target Audience: B2B
-  Revenue model: SaaS
-  Region: South

TIMELINE



anota AI



*“Purpose
is what
drives us.”*



Home deliveries in Brazil, which had been expanding steadily for years, took a huge leap forward in 2020, due to the coronavirus pandemic. To give you an idea: On March 6, when the Ministry of Health announced that the virus had started to spread within the country, there was an increase of 120% of downloads of home delivery applications, compared to the same date in the previous year. In 2017, 47% of smartphone users used apps to order meals, a number that jumped to 72% in 2020.

Forecasts suggest that transactions could reach around USD 6.3 trillion dollars worldwide by the end of 2021. In Latin America, Brazil currently accounts for 48.77% of the sector, in a market dominated by four major international players.

In November 2017, five young people, fresh out of the university and working for a software house in Rio Grande spotted an opportunity in this sector. Even though food orders over the internet had become an increasingly common habit among people, social media was rarely being used as a channel. “Restaurants and snack bars post promotional photos on their feed. Customers are interested, but they can’t immediately contact them to place an order,” said Jonas Casarin, CEO of Anota AI. Therefore, they designed an artificial intelligence platform to reply to consumers and requests directly, using social network chat features.

Anota AI focuses on putting restaurants and snack bars online, through a product that improves the shopping experience and makes it easier for users. The system is currently available in 26 Brazilian states. Over 7 million orders have already been placed and around BRL 350 million spent. “We always first think about how we would use the product ourselves, and we do it from there.” In addition, they believe that not every problem implies installing a new application to solve it: “People can’t stand downloading apps anymore!,” said Jonas. Anota AI has never had a problem transiting to different sectors in a region and this is reflected in the startup’s future plans. Jonas confirmed that he does not intend to move the company from Rio Grande, where they were part of the Oceantec incubator, the Technological Park of the Federal University of Rio Grande, which is an important hub for talent. They also emphasized

the importance of being involved in promotional events by SEBRAE, mainly to give them confidence for dealing with customers and investors. They also received support from the Wow company accelerator and benefited from mentoring and the investors involved. Contact with other more developed startups and events promoted by the accelerator also helped. They were chosen by a professor at FURG, who was impressed by the results they had had and the attitude the team showed in continually trying to learn and develop additional skills.

The social distancing caused by the pandemic considerably increased the number of customers, which led Anota AI to experience rapid and somewhat unexpected growth, which generated some technical challenges, such as server overload. Initially, they also had issues with home working, since relationships within the company were very fluid and horizontal. On the other hand, this new moment has made it easier to hire employees from all over the country. Finally, they have preferred to hire junior-level employees who were at junior levels at their previous companies. This helps to bring in new ideas and alternative views.

CONTACT

<https://anota.ai/home/>



Theme: **Startups**
Category: **Startups in General**

ATENDARE



Category: Business Management



Beginning of current model: 2018



Employees: 10



Customers: 420 active users of the platform, in 86 different companies



Target Audience: B2B



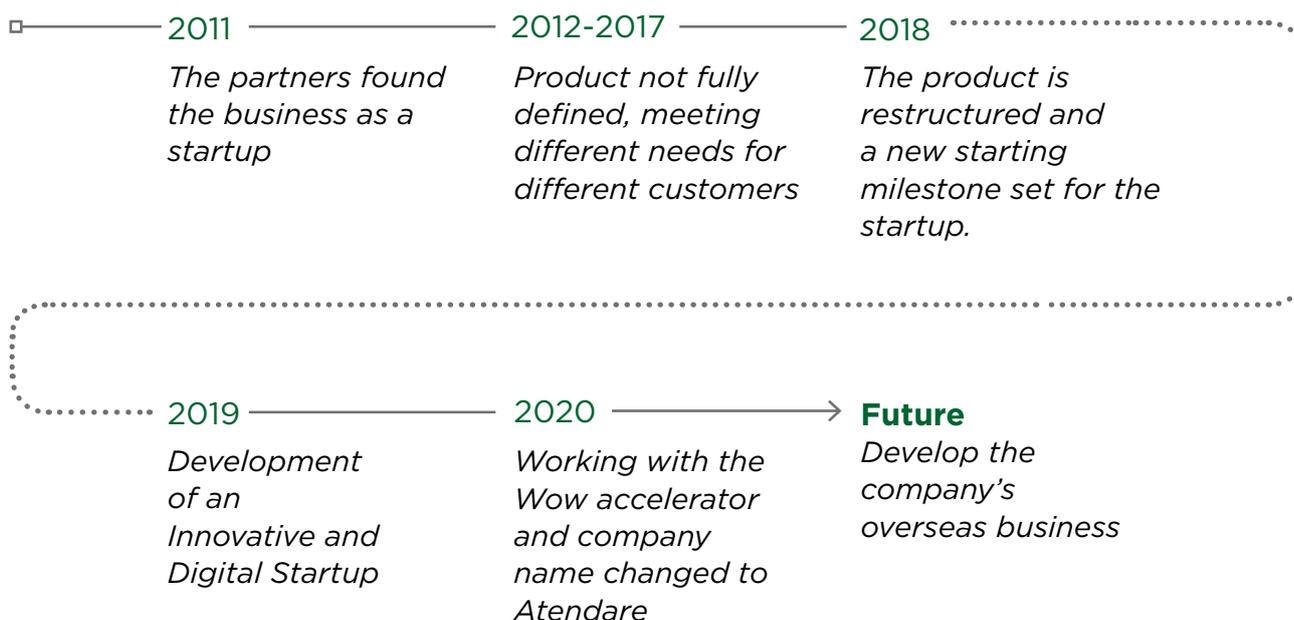
Revenue model: SaaS (licenses)



Region: Noroeste e Missões - Três de Maio



TIMELINE





***“Dreaming big
and dreaming
small takes
the same
amount of
effort”***



CRM (Customer Relationship Management) is one of the most active sectors in digital transformation. In 2018 it turned over 39.5 billion dollars, more than Database solutions at 36.8 billion. The data comes from Gartner, a consultancy specializing in technology.

Gartner also predicted that some CRM segments, especially the management of leads and on-site services, would continue to grow at more than 20%, because of mergers and acquisitions by important players in the industry. The driving force behind this is the growing need for companies to break down internal information silos and build a 360° data-based view of the customer, supported by artificial intelligence and machine learning.

The startup Atendare is focused on the opportunities in this heated market. It provides its customers with a CRM that has commercial automation and marketing tools to optimize prospecting, selling, and retaining customers.

The software allows teams to track the entire customer experience in one place, and includes features such as opportunity management, pipeline management, the availability of multiple sales funnels, management of offers and contracts, organizing schedules, goals and tasks, and integration with corporate email.

The company has had various forms of development support, such as the Startup RS Digital and Startup RS Scale programs from SEBRAE RS, as well as the national Inovativa Brasil program.

Katiuscia and Maurício are both business partners and life partners. They stress the importance of these programs in helping them work with other startups and mentors, as well as developing contacts, publicity and providing access to other initiatives, such as the WOW accelerator, which they joined for 2019.

The accelerator had a profound effect on the company's management. It led to some important insights for the entrepreneurs, which helped them to change their company, set it on the right track, improve its sales system, and set up indicators for all its activity.

In 2020, the startup was completely restructured, which resulted in clearer business objectives and a change of name.





Based on experience with customers, the company's team estimates that using Atendare reduces the time spent on processes by approximately 62%, in addition to a 30% increase in sales.

The company is based in the municipality of Três de Maio. When asked whether they planned to move the startup's headquarters to a major city, the entrepreneurs said that they had learned what they needed to create the company in this region and appreciated it for that. They also stated that they intend to pass on their expertise to the local people, encourage new initiatives and help the region grow by creating jobs, developing technology locally and supporting skilled young people.

CONTACT

<https://atendare.com/br/sistema-crm>





Theme: **Startups**
Category: **Startups in General**

AUSTER



-  Category: Agtech
-  Beginning of current model: 2019
-  Employees: nine employees, including the partners
-  Customers: more than 20 customers - contract renewal rate of over 90%
-  Target Audience: B2C
-  Revenue model: SaaS
-  Region: Central

TIMELINE



2016 — Company founded at the Pulsar incubator (UFSM).

2017 — Remotely Manned Aircraft production for various uses.

2018 — Focus on Agriculture, issues developing the MVP, resort to lectures and training to increase the budget.

2019 — The “Smart-N” MVP is designed, angel investment and company remodeled to focus just on the product: an intelligent distribution system for fertilizer and growth regulators using drones with special cameras.

2020 — Company growth, customers throughout the south of Brazil, as well as the southeast and mid-west.

Future — To have covered 500,000 hectares in 2022, with a product that is completely scalable



***“Anyone
can deliver
a variable
nitrogen
rate. Only
Auster has
Smart-N.”***

Agribusiness has been one of the main drivers of the Brazilian economy for the past ten years. In 2019, the sum of goods and services generated by the sector reached BRL 1.55 trillion, or 21.4% of Brazil's GDP. The largest segment is agriculture, which corresponds to 68% of this amount (BRL 1.6 trillion), while livestock corresponds to 32%, or BRL 494.8 billion. This sector has consistently played a bigger part in the Brazilian GDP; mainly thanks to the development and adoption of new technology that has improved productivity.

The Agtechs Brasil 2019 survey listed 1,125 startups focused on agriculture; of these, 261 were from Rio Grande do Sul. AgTechs (Agitechs or Agrotechs) cover many different areas, including precision agriculture, laboratory analysis, biological control, image diagnostics, genomics and biotechnology, Internet of Things, meteorology and irrigation, remote sensing, telemetry, process automation and management systems. Moreover, even though the pandemic has accelerated digital transformation in all sectors of the economy, it is believed that there are many opportunities to be developed and exploited in the field.

Auster was founded in 2016 by a group of college colleagues who designed radio-controlled aircraft for cargo, with the idea of producing remotely piloted aircraft, or drones, for different uses, both civil and military. From 2016 to 2019, they were incubated at Pulsar, from the Federal University of Santa Maria. According to the CEO of the company, Saulo Penna Neto, this period was fundamental for the development of the company, especially regarding management and networking. It allowed them easy access to researchers and professors and they could find partners for new research and new business.

At the time, they offered different types of services so that they could keep the company running, testing more than 20 projects with different solutions. They also provided training courses for agricultural science students at universities such as UNICRUZ, the Federal Institute of Panambi, and UFSM, on remote sensing with drones, as well as courses and workshops in Santa Maria, guided tours at Auster, and lectures and panels at conferences across South America.



It was then that, in 2019, the team made an important decision: focus on its strongest point, distributing crop inputs at a variable rate. Aircraft were now only to be manufactured for the company's own use and the training department was closed. With a more focused purpose, the startup was able to raise funds and begin expanding. It specialized in plant nutrition, specifically nitrogen fertilizers. Thanks to the strategic movement, they currently occupy a prominent position in this market for having developed a prescription system with unprecedented efficiency.

Thanks to the angel investment, they remodeled the entire company, product, and visual identity and created Smart-N. This followed a new and different methodology, based on research studies written by the partners. Smart-N also uses data that farmers already possess, but had not been making use of, to carry out tests and forecasts and produce a customized, automated, and accurate assessment. In some cases, with the use of Smart-N, the cost reduction reached BRL 1,000 per hectare.

When asked about the future, Saulo believes that, they will be able to cover more than 100,000 hectares in 2021 and more than 500,000 hectares in 2022. He also explained that they were creating software that would provide advice to farmers on how to use their products better. They also plan to improve the automated distribution system, from two hours at present to just forty minutes, which will ensure it can be scaled up or down as needed.

CONTACT

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Theme: **Startups**

Category: **Startups in General**

BIMACHINE



Category: Business Management



Beginning of current model: 2014



Employees: ~50 people



Customers: Over 11000 users, throughout the South region, SP and a few other states 3000 active BI and analytics projects, 11000 active users, 60 partners



Target audience: B2B



Business Model: SaaS



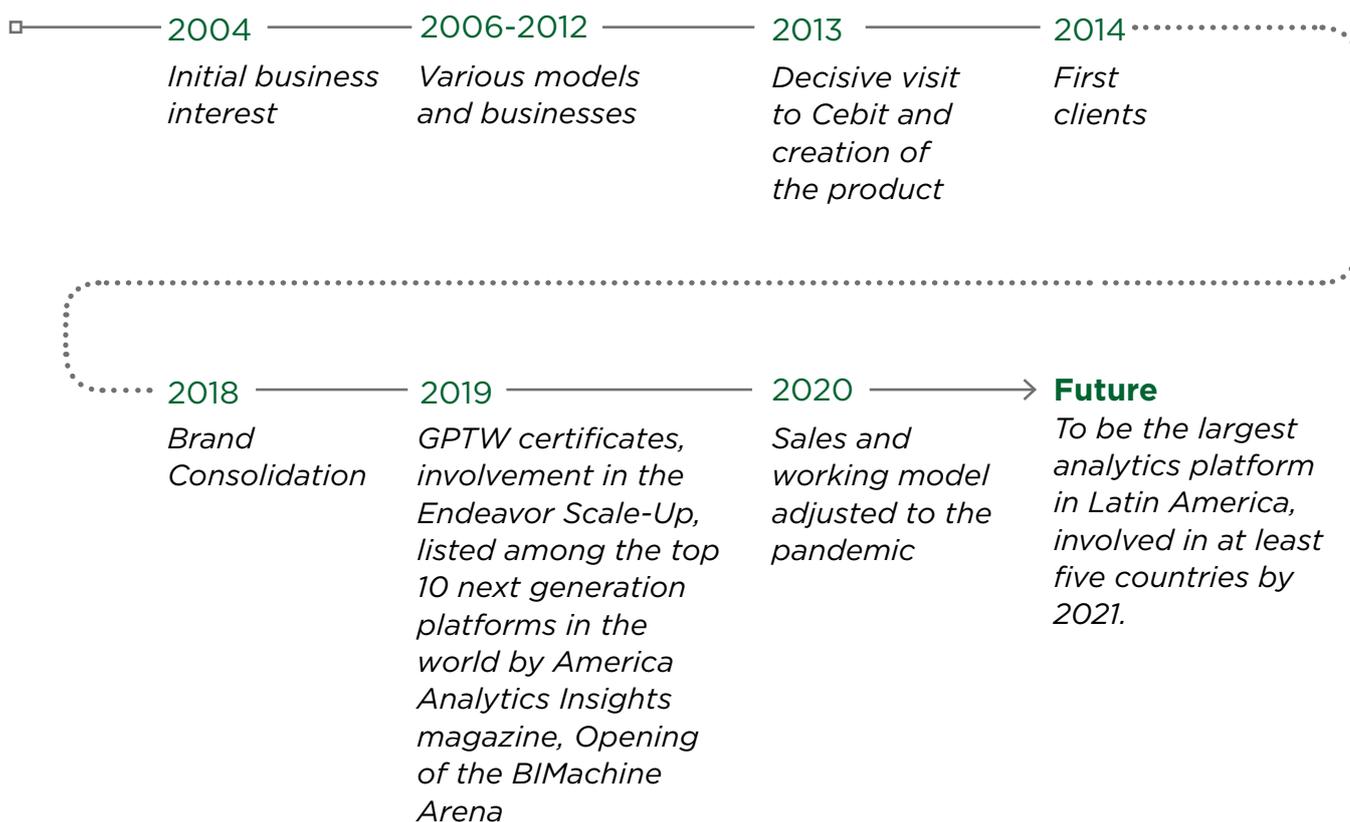
Monetization model: subscription



Region: dos Vales



TIMELINE





***“When in
doubt, grow
tenfold.”***



A well-known saying from the technology industry is that “data is the new oil.” Although this sentence is clearly trying to demonstrate the importance of data in decision-making and the development of new products, services, and sources of income, the metaphor can also be extended: just like oil, data is not so valuable if it is not properly extracted, refined, distributed and used. Hence the importance of BI systems, or business intelligence.

According to estimates by IDC, International Data Corporation, the data analysis market is expected to surpass the USD 200 billion mark in 2020, showing annual growth rates of 11.7%. Sectors such as services, banking, government and healthcare will be largely responsible for driving this market, closely followed by the telecommunications, insurance, and transport segments.

In Brazil, according to MicroStrategy’s Global State of Enterprise Analytics 2019 survey, 60% of companies already use BI and data analytics to make strategic decisions. In addition, with the relentless development of artificial intelligence and machine learning technologies, the trend is that this market will grow, not only in areas that have not yet been explored, but also because it will benefit as companies that have already adopted these platforms invest further. One of the companies that has taken advantage of these opportunities is BIMachine.

During college, colleagues at Univates decided to participate in the incubation offered by the institution to develop a BI tool aimed at small and medium-sized companies. During this period, they realized that the market was not yet prepared to implement this solution. To survive, they decided to offer the implementation of market solutions and provide consulting in the field.

In parallel, different ideas were tested until, in 2013, after a visit to Cebit, a traditional technology tradeshow in Germany, they began to work hard on the creation of the current product, winning customers since 2014. During this period, internal adjustments of the team and the business were necessary and challenging, requiring dedication from the founders.



Participation in programs such as Endeavor’s Scale-Up and constant dedication to studies in the area of business and entrepreneurship were essential for the partners to be able to develop the business and establish relationships with the technology ecosystem. It was during the program that they identified the possibility and the need to encourage the development of the ecosystem in the Vales region and took that responsibility upon themselves.

They then created Arena BIMachine, in Lajeado, to help inspire and empower people and companies in relation to innovation and digital transformation. Since its inauguration in November 2019, they have been encouraging a culture of sharing experiences and knowledge among entrepreneurs. By February 2020, they had held more than 50 sharing events.

They also introduced the Stars accelerator from Santa Maria to the region and took part in various events, organizations, and initiatives, such as the SEBRAE ‘Like a Boss’ competitions and the Inova RS program. They consider that it is vital to take part actively in this environment. It is always important to look for innovation, to teach and to learn. When asked about how the startup fared during the pandemic, they explained that they did some “war planning” and began remote working from home, which has carried on since.

Despite having lost some developers during the period, they created segmented platforms, focused on specific sectors of the economy to adapt the product to the needs of each sector, in addition to improving the sales process. They are currently negotiating with associations focused on entrepreneurship and technology to carry out mentoring and development programs with companies in the Vales region.

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Theme: **Startups**

Category: **Startups in General**

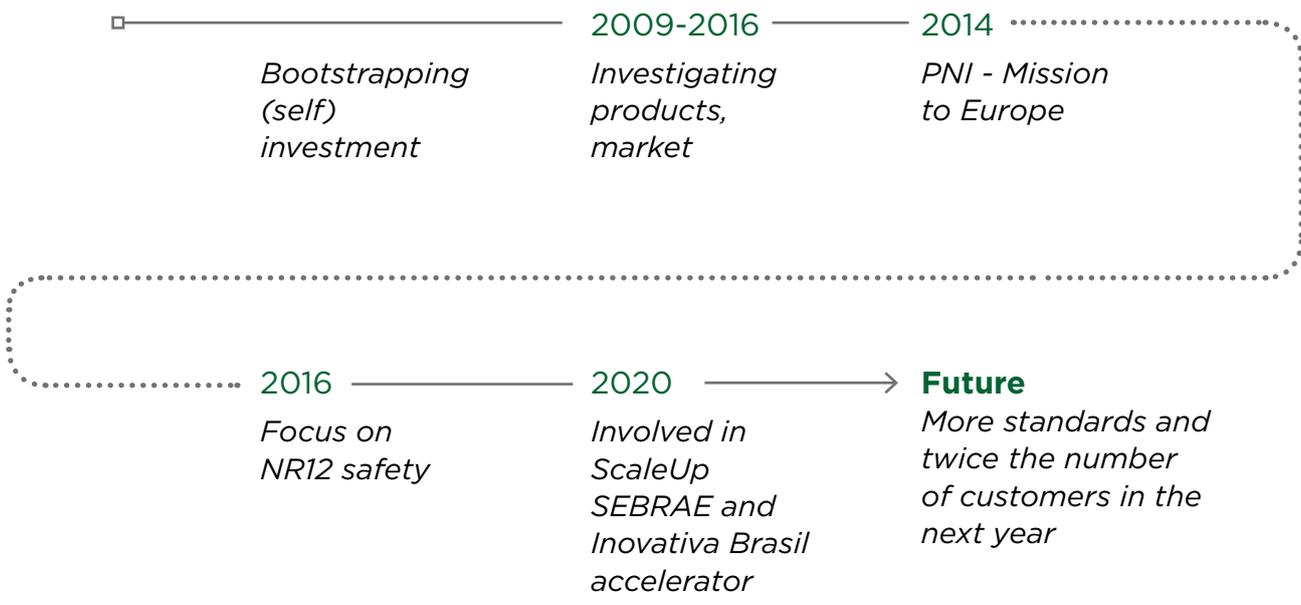
GÁUTICA

gáutica®

-  Category: Regtech
-  Beginning of current model: 2016
-  Employees: 5 to 10
-  Customers: +400
-  Target Audience: B2B
-  Revenue model: SaaS
-  Region: Serra e Hortênsias

TIMELINE

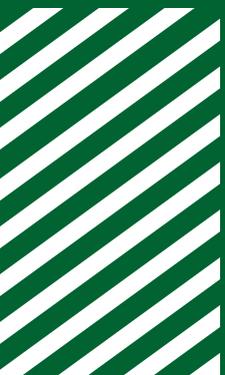
gáutica®





“We save lives by improving safety in the workplace.”

Éderson Almeida,
da Gáutica.



Accidents at work represent a major challenge for the Brazilian economy, generating considerable impacts and losses. Every minute, a Brazilian worker suffers an accident while performing his duties. In 2018, the Pension system recorded 576,951 occupational accidents, but this mark only covers employees with a formal contract. It is estimated that, considering informal and self-employed workers, this number can be up to seven times higher, with about 4 million people injured each year.

In addition to their impact on workers and their families, accidents at work cost the employer, the public health system, and society as a whole.

If you consider direct and indirect costs, accidents at work can cost more than BRL 70 billion a year, according to a study by the University of São Paulo.

Éderson Almeida and Estevan Rech, from Gáutica, came up with a great idea to improve this situation. Their startup produces systems for work safety, automating companies' daily tasks using artificial intelligence. The consolidation of its current business model began in 2016, after a process of analysis and strategic planning identified the strengths and opportunities of the company.

Before that, however, the entrepreneurs underwent tests for different ideas and business models, facing difficulties with partners and products, but viewing each opportunity as learning opportunity. In 2014, they were selected by the National Innovation Award to participate in a mission to Europe based on the approach with local innovation agents, in particular SEBRAE.

The opportunity was used to the fullest, and the knowledge generated was applied to changes in the company, in its business plan, its processes, and especially in the product. The mission showed that the impact of industry and the universities working together was so successful that the entrepreneurs approached the University of Caxias do Sul (UCS) and CNPq (National Council for Scientific and Technological Development) and held events focused on startups in the Serra Gaúcha.





After Gáutica completed their strategic planning, they decided to focus on the NR-12 standard, which defines the technical references, fundamental principles and protection measures required to ensure the health and physical safety of workers, and establishes minimum requirements for preventing accidents and occupational illness for every type of work.

Its main solution, the GRisco application, offers more agility in the composition of reports about company equipment, in order to register and quantify the risks offered by their operation.

The entrepreneurs at Gáutica currently trying to scale up. They are adept at using agile methods and take part in an online incubator, hosted outside the State. They continue to improve their relationships through lectures and mentoring. During the crisis generated by the pandemic in 2020, they allowed customers to suspend their monthly fees and adapted the monetization system, making it more flexible. They also began offering engineers an agreed amount for each machine, which improved the company's revenue.

The purpose of the startup is to make the world better, safer, and more innovative, by developing customized systems for its clients, able to automate many of the routine tasks, make them more productive and free up more time.

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Theme: **Startups**
Category: **Startups in General**

POSTMETRIA



-  Category: Big Data
-  Beginning of current model: December 2014
-  Employees: 15 (including the five partners)
-  Customers: 20 contracts with a base of more than 200 customers, in all five regions of Brazil
-  Target Audience: B2B
-  Revenue model: SaaS
-  Region: Metropolitana e Litoral Norte

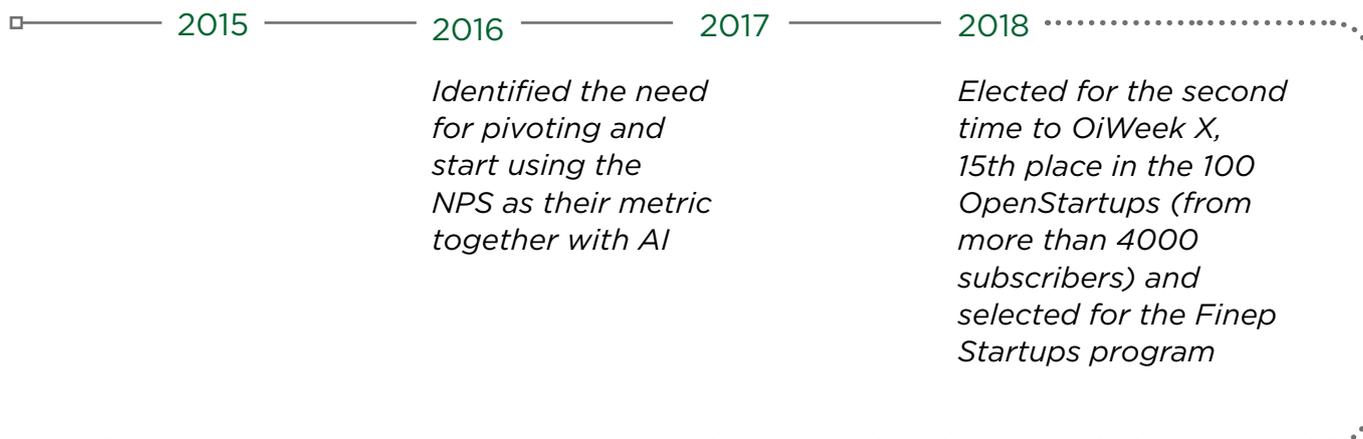


TIMELINE



Start of the company's activities. First angel investor in October

Establishment of the AI platform for interpreting data



2015

2016

2017

2018

Identified the need for pivoting and start using the NPS as their metric together with AI

Elected for the second time to OiWeek X, 15th place in the 100 OpenStartups (from more than 4000 subscribers) and selected for the Finep Startups program



2019

2020

Future

Second angel investor Consolidation as a Multichannel Big Data Platform that identifies, through Artificial Intelligence, the degree of spontaneous consumer satisfaction.

One of the five startups selected at Startup Lisboa 2020 in partnership with WPP. Revenue doubled compared to 2019, already exceeding BRL 1 million.

Scale up sales and focus on international expansion. They want to be a global impact metric. Use the metric to handle data that is not being used by customers.

Time

#Desafio: Inteligência de Mercado

Operacional / Pré-Scale Up



Dirceu Corrêa Junior
CEO



Eduardo Moschetta
CTO



Jéferson Weber Santos
CFO



Carlise Garbin Debona
CCO



André Dias
Tecnologia



Gabriel Schulte
Tecnologia



José de Oliveira
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Jéssica Maciel
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Roberta dos Santos
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Vilmar Fonseca
Tecnologia

*“Opinion
has value.”*



Customer Experience, commonly known by the acronym CX, deals with the interaction between companies and their customers. According to data from the consultancy firms Deloitte and Gartner, 90% of North American companies already have Customer Experience departments, and LinkedIn stated that CX was the sixth most promising career in 2019. On the other hand, according to the global report Digital Trends 2019, produced by Adobe in partnership with Econsultancy, 44% of these companies still consider themselves immature in their CX development and lacking a joined-up strategy. Further supporting the idea that this area is booming was the fact that half of the respondents said that their company planned to increase investment in CX technology in 2020.

While they were creating a website for a client, Postmetria's partners realized there was a business opportunity in analyzing the comments made about companies, and providing an assessment of how their image was perceived, based on this data. As they gained new customers, it was no longer feasible to search for and analyze comments manually. They needed software.

Therefore, in 2017, they produced a multichannel platform that could record the degree of customer satisfaction based on their online comments and a metric called the Spontaneous NPS (Net Promoter Score), which was determined through data mining, machine learning, artificial intelligence, and big data. Postmetria has already monitored more than 400 companies, through 15 different channels, that have provided artificial intelligence analysis of more than 10 million customer comments.



The partners highlight the construction of a team that complements each other as the company's strong point, bringing a lot of market experience to the business. The partners have complementary abilities. Their different degrees, MBAs and master's degrees were an essential combination in contributing to the company's success and development. They have written two theses already on the work and products of the startup, showing how important their approach has been.

They took part in the pre-accelerator from Inovativa Brasil and the accelerator from VISA and Startup Garage Mutante (ACE). They believe these proved important in terms of mentoring, learning from design thinking and a commercial approach based on open innovation, as well as how to manage the business

During the 2020 pandemic, they could not continue as they had been, so they started offering customers a new product: specific analysis based on the coronavirus, which used it as an indicator for market analysis and positioning. They also offered new and different forms of subscription for their existing products. For the future, they have plans to scale up sales and focus on the internationalization process, making their product a global impact metric.

CONTACT

<https://www.postmetria.com.br/>

POSTMETRIA





Theme: **Startups**

Category: **Startups with a social impact**

TRASHIN



trashin



Startups with a social impact



Category: Cleantech



Beginning of current model: 2018



Employees: 17 (plus 5 partners)



Customers: operations in five Brazilian states



Target Audience: companies and condominiums that generate waste



Revenue model: reoccurring revenue



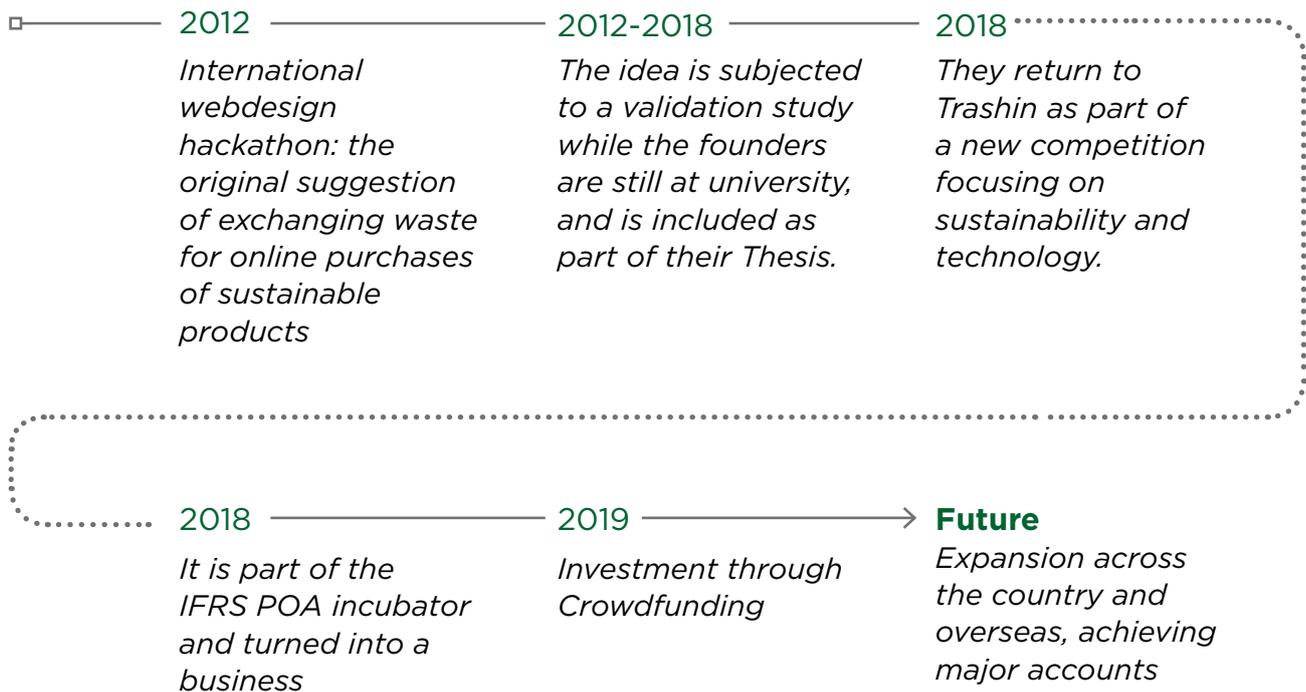
Region: Metropolitana e Litoral Norte



TIMELINE



trashin





“Trashin was created to turn waste into resources.”

Clean technology solutions represent one of the greatest economic opportunities of this decade. According to the Smart Prosperity institute, the global market for solutions focused on environmental sustainability is estimated to represent USD 2.5 trillion in 2022. In addition, McKinsey consulting believes that by 2030, energy efficiency and sustainable use of resources will offer opportunities in the order of USD 3.6 trillion.

According to data from the 2019 Cleantech Startups survey, Brazil has 136 companies in the area, 71% of which operate a business-to-business (B2B) model. They operate on eight main verticals: clean energy production, energy storage, energy efficiency, transport, air and environment, clean industry, water and agriculture.

Trashin was the result of the founders' decision to take part in an international hackathon. The idea they came up with was one of the 15 selected for the final, in Limoges, France. It was obvious, at that moment, that their idea had the potential to have a global impact.

At the time, they had other priorities, so the students used the university period of their Administration course to validate the idea in different disciplines, but focusing professionally on their individual careers. They came back to the idea in 2018, because of a new competition on the theme of sustainability, and began investing effort into turning it into a company.

With the help of the IFRS incubator and with the arrival of new members on the team, they managed to develop the business over six months, starting the validation process in the condominium of one of the founders. In the first three months, they already had customers and were chosen to be part of Inovativa Brasil's accelerator.

In early 2019, the startup expanded and became a benchmark for waste management. The partners began focusing on the company full time, which helped save significant costs and increased productivity. In mid-2019, Trashin came second, in the most innovative startups in Rio Grande do Sul from the 2019 Innovation Award. Other awards followed.



In search of new investment, they tried crowdfunding. Through CapTable, they raised BRL 1.1 million from more than 400 investors across the country by October 2019, and began to operating in four more Brazilian states.

Through its service platform, Trashin has obtained important metrics, such as a 74% rate of waste utilization and an average of 1,615 kg collected per collection point. Approximately 250,000 people are served and directly impacted by the initiative, and the partner cooperatives had an income increase of around 25%.

Despite the pandemic, the company continues to grow. They recently opened their own waste sorting shed, which serves as a model for other cooperatives in the waste management chain. As well as managing the entire chain, the startup wants to train and show greater appreciation for the workers.

What makes the company different is the constant training and the way it tries to find ways to increase the income of those working in its sorting units. It regularly monitors its social impact. Another important aspect is that they appreciate the business environment the company was born in: the founders constantly repeat the importance of the processes of development and acceleration they went through, highlighting what made it special and the ideas they had from networking and mentoring.

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TRASHIN



Innovation in Action

FUTURE TECH



Theme: **Future Tech**
Category: **Health**



BHIOQAP KIT

the only Brazilian Chemotherapy Aerosol Delivery Device

bhiosupply

UFCSPA



Name of the Company: Bhio Supply Indústria e Comércio de Equipamentos Médicos Ltda.

Market: Countrywide

Product: BHIOQAP KIT

Technology for the future:
Others of relevance

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Lead researcher: Rafael Seitenfus

Field of Research: Peritoneal Diseases Program of Santa Casa de Misericórdia de Porto Alegre

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The incidence of intraperitoneal cancer can reach 60,000 cases/year in Brazil, and until 2017, there was no aerosol treatment delivery system for carcinomatosis in the country. In 2016, Bho Supply developed the BHIOQAP KIT, to try to reduce the importation costs of treatment and to develop and promote the PIPAC technique (Pressurized Intraperitoneal Aerosol Chemotherapy) in Brazil. The kit has a PIPAC device. This is a surgical technique developed in 2014 in Germany, which consists of a pressure injection system that releases the liquid chemotherapeutic solution as a therapeutic aerosol mist. The device is more effective at delivering substances to the tissue and penetrating it than the traditional chemotherapy methods, in relation to the peritoneal area.

The BHIOQAP equipment was developed through a partnership between the company Bho Supply and the institutions Irmandade Santa Casa de Misericórdia de Porto Alegre (ISCMPA), Porto Alegre College of Medical Science Foundation (UFCSPA) and PIPAC Brasil. Bho Supply was responsible for the overall coordination of the entire project, for the development of the medical product and registration with ANVISA. Both UFCSPA and ISCMPA, under the leadership of Dr. Antonio Nocchi Kalil, were responsible for the institutional relationship, implementation care, and technical assistance for the first cases. PIPAC Brasil, run by doctors Rafael Seitenufs and Eduardo Dipp de Barros, was responsible for providing scientific, medical, and technical support as well as evaluation and checking. Today Bho Supply and PIPAC Brasil are directly responsible for promoting the technique in Brazil and providing training.

The design for the device was based on technical specifications obtained from previous research, advice from surgeons in Brazil and France, advanced engineering techniques (CAD/CAM) and the results of differential equations, such as those relating to finite element methods (FEM). It was therefore possible to improve the equipment by reducing the size and thickness of the walls, improve resistance to pressure, and consequently, to improve the effectiveness of the aerosol delivery.

After doctors had validated the prototype, a pilot batch was manufactured. This underwent simulated in-vitro and pre-clinical trials on animals. Then began ANVISA product registration and property registration, as a way to protect the product and generate a patent for the invention and the industrial designs.



BHIOQAP KIT

BHIOQAP KIT, the only Brazilian aerosol delivery device for chemotherapy drugs in the abdominal cavity that is approved by ANVISA

Today the kit is recommended by the team of Dr. Rafael for patients with peritoneal carcinomatosis in gastric cancer, colon cancer, and ovarian cancer. It has had a positive impact and the use of PIPAC is increasingly considered as an option al form of treatment for these diseases.

Bhio Supply has become the only Brazilian company, and the second in the world, to develop a chemotherapy aerosol delivery device to treat peritoneal carcinomatosis (cancer). It is important to mention that the BHIOQAP Kit is different in two important ways from its competition: first, it only requires one entry point, while the competition uses two, so there are fewer incisions; second, PIPAC is sold as a complete kit: in addition to the equipment itself, it includes the accessories necessary and protective material too.

Sales of the product started in 2017, and today approximately 100 oncology surgeons have already been trained in theoretical/practical courses, and more than 30 patients have been treated with the technique. The kit was first used in October 2020 at the Albert Einstein Hospital. The product is already referred to scientifically as “the Porto Alegre technique.”

The product currently on the market is the third iteration. Two new BHIOQAP technologies are under development and promise to revolutionize the PIPAC technique.

BHIOQAP KIT



Theme: **Future Tech**

Category: **Electricity, Electronics and Automation**

iMCP HT32SX

Unique microchip for the Internet of Things

HT MICRON semicondutores



CHIP
Instituto Tecnológico
de Semicondutores

UNISINOS

 Name of the Company: HT
Micron Semicondutores Ltda.

 Market: International

 Product: iMCP HT32SX

 Technology for the future:
Software & hardware

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 Field of Research: Semiconductor
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HT Micron developed and produced the first domestic microchip to make Brazil a player in the IoT internationally and break the country's industry out of its dependence on imported connectivity components. The company focused on achieving a quality product that could perform at a similar level to others on the international market and at a competitive price.

The partnership necessary to develop the iMCP HT32SX was based on the expertise of the manufacturer HT Micron - in semiconductor packaging and testing - and the laboratories and professional training provided by ITT Chip (Unisinos Semiconductor Technological Institute), who together developed and prototyped the encapsulated packages.



The first IoT microchip developed and produced in Brazil.

iMCP HT32SX



The idea and kickoff for the first Brazilian chip came from an interest in strategic positioning around the IoT market, which is a growing global trend with immense business potential. The product description was a collaborative effort between several partners; in particular, Sigfox, ST Microelectronics and WND do Brasil, including both their workers and customers.

Work also began in 2018 on product design and development, through a partnership between HT Micron and ITT Chip, under the coordination of Professor Celso Peter. ITT Chip has a large (750 m²) clean room in the University of Latin America, all the software and equipment needed for development and an excellent quality infrastructure. It should also be mentioned, as it was so important to the project, that there is also a prototyping laboratory and all other necessary ICT support.

The initiative was attended by research professors, academics and Master's and Doctoral students, design engineers and interns, as well as employees of HT Micron.

To start the work, a team of professionals, from both the company and THE INSTITUTION, was sent for training in South Korea. Thus, in addition to gains from the development of the chip, the project resulted in a significant number of highly qualified professionals.

Shortly after the start of development in September 2020, they made their first sales to the Brazilian companies Sigmais and Promont and to the Indian company iWire Technologies. The company expects to make sales worldwide in 2021, including Russia, the first country to approve a Sigfox chip. The first chip developed and manufactured in Brazil has therefore been launched and is competing across the world.

The initiative was supported by the FINEP, Sigfox and ST Microeletronics, and incentivized by the PADIS Law, the Information Technology Law and the State of Rio Grande do Sul.





Over 1000 samples have been sent out and more than 100 products have used the iMCP HT32SX chip.

The chip uses the Sigfox network with coverage in more than 70 countries, and is able to change regions automatically, thanks to the Monarch feature. The iMCP HT32SX is a connectivity chip that is just 13mm x 13mm in size. It is a complete system with more than 60 components in a single package. It contains a microcontroller, transceiver, power amplifier and passive components, among others. In addition, it has several interfaces and facilities to create devices with sensors and with greater complexity, characteristics that allow the reduction of the total cost and development time for IoT devices.

Many different IoT devices and solutions can be built with the SiP (system-in-package) iMCP HT32SX, such as a connected trash can that monitors its fill level, an intelligent water meter that monitors the flow and leakage, a cargo tracker for an international shipment or a smart watch that can monitoring the vital signs of an elderly person or a patient in a hospital.

iMCP HT32SX





The iMCP HT32SX, when compared to competing imported products, has better characteristics in several technical aspects: smaller size, more powerful signal and lower consumption, representing an incremental innovation for the category of connectivity components.

The chip can be acquired directly from HT Micron or its authorized distributors in Brazil and abroad.

The innovation cycle is long; and therefore, the impact is not immediate. With its constant sales growth and worldwide expansion, the revenue is increasing every month. By 2025, it is forecast that revenue from the iMCP chip range will represent half of the company's turnover.

Brazil, through the iMCP HT32SX, becomes part of the international technological landscape, supporting the objectives set out in the National IoT Plan, as well as strategies and policies in the field, at the federal, state and local levels.



Theme: **Future Tech**
Category: **Agroindustry**



LEAL SANTOS

Innovation at sea



 Name of the Company: Indústrias Alimentícias Leal Santos Ltda

 Market: Domestic and abroad

 Product: Sustainable Skipjack Tuna fishing

 Technology for the future: Advanced fishing method

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 ICT: Federal University of Rio Grande - FURG.

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 Field of Research: Fishing Oceanography

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Indústrias Alimentícias Leal Santos is based in Rio Grande. It is a leader in sustainable fishing and the ecological capture of Skipjack tuna and has environmental certificates from Friend of the Sea, Dolphin Safe, and the IPNLF (International Pole & Line Foundation). The company has worked a lot with the Federal University of Rio Grande (FURG), exchanging technology, experience and knowledge.

Skipjack tuna is a species of tuna that can be caught by several different methods, including rod, line and live bait. The latter is selective and sustainable, only skipjack tuna is caught. Using this sustainable method makes the product more valuable, which means it has a greater added value when it is sold abroad. The price obtained is 20 to 30% higher from this method.



Fishing with pole and live bait for Skipjack tuna.

However, the industry has faced a serious issue, which has threatened Leal Santos fishing after decades uninterrupted: the increasing cost of catching the bait. There have been more restrictions on capturing the bait used by the company up to 2013, sardines, in relation to the fishing areas, which have become environmentally protected. This has meant longer journeys to find alternative sources. To keep this fishing method viable, they needed to change their approach.



At the start of the decade, the company worked with FURG to design a solution: change the bait from sardines to anchovies, which could be caught nearer to the fishing routes. Operational Oceanography was therefore used to identify the best way to optimize the time at sea. Data was collected from the ocean to provide forecasts and analysis.

It was the partnership between the company and the FURG Oceanography Institute that led to this development, and resulted in a project run by Dr. Lauro A. Saint Pastous Madureira. The Institute is based in Rio Grande, next to the Atlantic Ocean and the Lagoa dos Patos, and has been applying science to fishing for forty years.

In the first stage of the partnership, anchovies (*Engraulis anchoita*) were identified as a possible substitute for sardines. FURG studies indicated that it was abundant, but more fragile than the traditional bait. It was necessary to study the feasibility of capturing and transporting the species live and in good condition on board tuna vessels on the high seas for periods that could last from three to thirty days. A definitive test was carried out in 2012, when the tuna vessel KM7 returned after 28 days of fishing with 160 tons of skipjack tuna, using exclusively anchoita as bait. The operation was considered a success. After a year, most of the company's six boats had already tried the new bait, with positive and encouraging results. Thus, fishing with pole and live bait was maintained.

Leal Santos also purchased licenses in 2013 for Operational Oceanography software to enhance the process further. This type of software is a valuable tool, as it provides environmental and weather information, with daily updates. However, the company needed a team capable of extracting the data from the software and turning it into useful information.

It was at this point that the partnership with FURG proved to be of great use again, and the work moved on to the second stage. The same university team that had worked on the exchange of bait study became responsible for managing and processing the data. This made it possible to start comparing the data on the fishing locations of both skipjack tuna and anchovies over the years, with environmental variables such as surface temperature, and for a depth of up to 50m, plankton density, depth of the thermocline, altimetry and others, which they could keep up to date. The team were able to select the best fishing areas each day, based on the database, trying to identify the closest environmental





characteristics to those of the most substantial catches made in the past. This manages to remove some of the uncertainties in fishing.

The work with FURG went even further: the group began collecting marine weather data from 1992 to 2013 (which was not available in the software they had) from various sources that specialized in fishing spots, to try to add further certainty to the fishing locations. They standardized the parameters and added that information to their statistical analysis.

This proved to be quite effective: the analysis of fishing locations based on Operational Oceanography generated savings in diesel of around 30%, reducing the environmental impact and increased the business's economic viability.

The results of this public-private partnership emerged gradually, as the theory was applied to daily operations. From the beginning, there was integration and direct participation of undergraduate, master's and doctoral students, and of fishing masters. During the execution of the partnership, which remains to this day, the university also sought the help of specialists from other public universities, such as UFRGS, UFF, UFRJ and UNICAMP, in addition to FIPERJ (Foundation of the Fishing Institute of the State of Rio de Janeiro).

To give you an idea, it was calculated in 2016 that, in 2014 and 2015, Leal Santos vessels emitted about 4,281 tons less of CO₂ into the atmosphere because of more efficient diesel consumption. For its actions, the company was able to apply for environmental and sustainable production seals. It enabled them to obtain the three previously mentioned international certificates, which has had a direct impact on the value of their product as it meets stricter requirements. The university has benefited from a successful partnership that has lasted for years and is still developing. The work has produced studies for Brazil and abroad and they have been involved in a book published on the topic. It has also been a major learning experience for many students and academics.

Leal Santos, using innovation and FURG as allies, has thus become an international benchmark for sustainable fishing, adding value to its product and demonstrating that a company with more than 130 years of history can always innovate and reinvent itself.



Theme: **Future Tech**
Category: **Health**



RIGID TRACHEOBRONCOSCOPE

Airway orthosis applicator



 Name of the Company: Bhio Supply Indústria e Comércio de Equipamentos Médicos Ltda.

 Market: Countrywide

 Product: Rigid Tracheobroncoscope

 Technology for the future: Others of relevance

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 ICT: Hospital de Clínicas de Porto Alegre (HCPA) /Universidade Federal do Rio Grande do Sul (UFRGS)

 Department: Airway and Pulmonary Laboratory (VAP)

 Lead Researchers: Amarílio Vieira de Macedo Neto and Rogério Gastal Xavier

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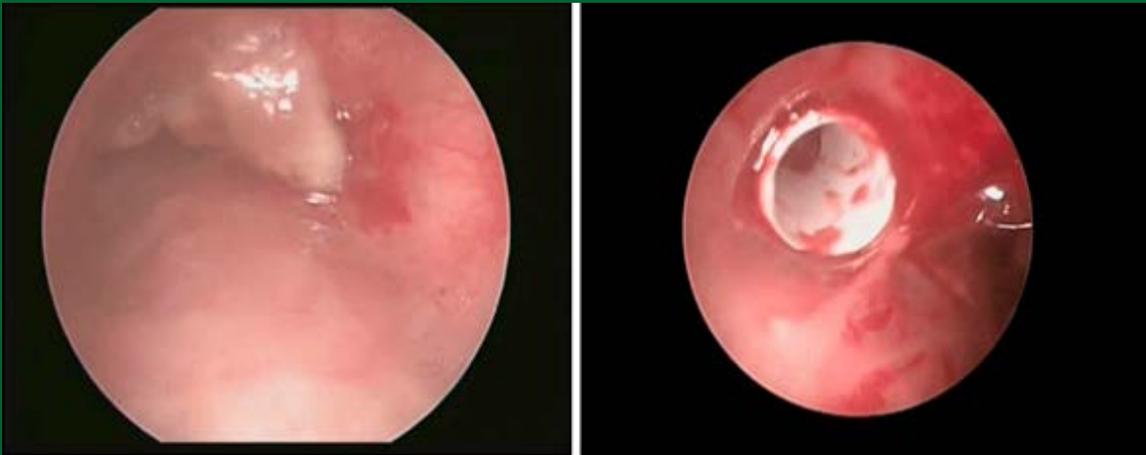
 www.hcpa.edu.br

 hcpa fundmed



Lung cancer and benign strictures (abnormal narrowing of the body's tubular structure) in the airways are common respiratory tract disorders that can cause considerable suffering for patients. In Rio Grande do Sul, it is estimated that 4,000 patients a year are affected by lung cancer. Approximately 30% of these patients require intervention to alleviate problems in their chest, as a result of this disease. Airway obstruction represents one of the most frequent and perhaps the most dramatic problems.

Orthoses are components made of various materials, such as medical grade silicone and titanium, which are inserted into organs or tissues to compensate for, correct or prevent lack of function. In the case of airway orthoses, they try to correct and prevent further obstruction of the airway after removal of the carcinoma. Among the causes of the obstruction are mainly lung and esophageal cancer, where the formed carcinogenic material ends up closing the airway. Other reasons for using orthosis, although less frequent, include post-intubation stenosis resulting from damage caused by intubation for prolonged periods (for example, in a patient undergoing Covid-19 treatment, who may spend months on assisted ventilation), and tracheomalacia, which is characterized by a "softening" of the cartilages, which end up obstructing the airway.



Example of orthosis implant after carcinoma removal



About twenty years ago, after training in France, Prof. Dr. Rogério Gastal Xavier, from UFRGS - Federal University of Rio Grande do Sul, brought the idea and the need to start producing airway orthoses in Brazil. This innovative idea produced the first Brazilian orthosis, patented by the Hospital de Clínicas de Porto Alegre.

At the time, the validation tests revealed a deficiency in the hospitals regarding instruments necessary for the application of orthoses, since the instruments used were imported. A partnership was therefore developed between the Hospital de Clínicas de Porto Alegre, UFRGS and Bho Supply to develop a national applicator.

The beginning of the equipment construction project was the approval of a FINEP project in 2010, involving the UFRGS School of Engineering, the Porto Alegre Hospital de Clínicas (HCPA) and the company, under the coordination of Prof. Dr. Luís Alberto Loureiro dos Santos. The basis for the prototype was a not for commercial use model developed by Dr. Luiz Felipe Judice, from the Universidade Federal Fluminense, who is one of the main specialists in the area and actively involved in the project.

Together, the institution and the company improved the functional aspects of the initial prototype, as well as the materials, and made Professor Judice's proof of concept more practical, developing new prototypes in the process that were tested on mannequins and trying orthoses already available, until they were happy with the product.

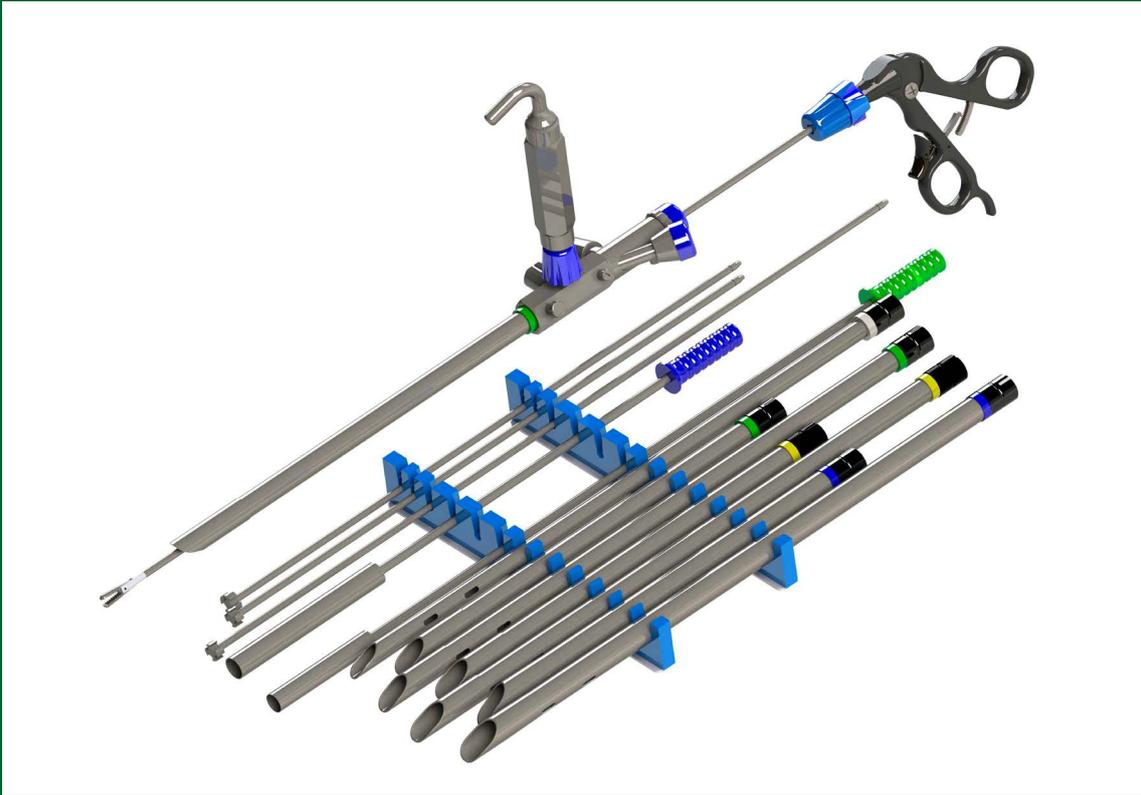
By obtaining funds from a DECIT Notice from the Ministry of Science and Technology in 2010, under the coordination of Prof. Dr. Amarílio Vieira de Macedo Neto (HCPA), they were able to advance to the clinical testing stage. Two trials were carried out: the first involving 35 patients and the second, 77 patients and 9 institutions (university hospitals) throughout Brazil. This step took 24 months to complete.

Based on these studies, the product was approved and registered with the National Health Inspection Agency (ANVISA) for use in Brazil. As well as receiving training in the use of the technique and in acknowledgment of their contribution to the assessment process, the healthcare units involved in the trials were donated the applicator units, and these have been used many times to treat respiratory tract stenosis. Thus, product development has made this type of treatment available in the Unified Health System (SUS).





The applicator/instrument of the developed orthosis includes a rigid bronchoscope (a straight instrument with lighting to do endoscopies in the respiratory tract), which can switch out cannulas of different sizes, in order to choose the best one for the patient. It is also capable of passing lights and optical systems and has folders, clamps and rods, to allow foreign bodies/obstructions to be removed and to transfer the orthosis to the site of implantation.



First Brazilian orthosis applicator, developed by Bho Supply



Since it is a permanent piece of equipment, it is difficult to measure how useful it has been. To give you a basic idea, the bronchoscope is currently used in procedures three to four times a week, and in orthosis implant surgery about two to three times a month, at the Hospital de Clínicas de Porto Alegre alone.

Hospital de Clínicas, UFRGS and Bho Supply developed together the first (and currently the only) rigid orthosis applicator in Brazil, which means that there is no need to buy imported products that cost more than twice the amount of the model made in Brazil.

The company has sold 34 units of the tracheobronchoscope. Bho Supply markets the product to public and private hospitals throughout Brazil, where they are used alongside several orthosis models, including ones from abroad. It is an example of a successful technology transfer between universities, hospitals, and companies in the healthcare field, and its benefit to society cannot be estimated.





Theme: **Future Tech**

Category: **Electricity, Electronics and Automation**

INLEVEL

Technology for Sustainable Agriculture



 Name of the Company: Inel LTDA

 Market: Countrywide

 Product: InLevel

 Technology for the future:
Software & hardware

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 ICT: Universidade de Passo Fundo
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 Department: School of Agricultural
Science and Veterinary Medicine

 Lead researcher: Vilson Antonio Klein

 Field of Research: The Physical
Properties and Management of Soil

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Soil erosion and low rainwater use, especially after long periods of drought, led Professor Dr. Vilson Klein, from the Graduate Program in Agronomy at the Universidade de Passo Fundo, to conduct research into planting techniques that could help farmers in preparing the soil and crops.

His research revealed a very serious problem in the fields. The technological developments of recent decades, had led to manual operations being systematically replaced by mechanized ones. As a result, many previously common practices, such as terrace planting, were being abandoned. In this technique, lines are planted along the contours of the land. In other words: By maintaining the same altitude, this practice can be an important way to help soil conservation and considerably reduce losses, which can reach up to 50% in the case of soil erosion. However, small farmers lacked a technology that would facilitate the application of this technique with their machinery.

The research showed that the development of an auxiliary level indication tool would be very useful for the adoption of the technique. With the help of a research grant, they began to investigate and look for such a tool. After countless unsuccessful attempts, the professor, through UPFTech, now Conecta, took the case to the company INEL, which was then part of the UPF Technological Park incubator. The challenge was to develop a low-cost autonomous machine that would help small and medium-sized farmers with contour planting, terracing, and subsoiling.

After countless meetings and exchanges of information and presentation of results, InLevel was born, a device that can be easily attached to the panel of tractors and agricultural vehicles, and whose purpose is to indicate to the operator the forward slope of the vehicle. Its use is quite simple: once installed and calibrated by the operator, the instrument panel indicates whether the tractor is positioned in an uphill or downhill condition during its movement. This allows the operator keep the vehicle level while driving it, because the light signals from the LEDs allow them to correct the route at every degree of inclination, whenever necessary. This way, the small farmer has a practical means of cheaply adapting affordable machinery to be able to control its level.



InLevel installed on a tractor

When farming in contours you can have up to three degrees of slope. Using this device, it is possible to monitor variations of up to one degree in the slope. Although simple to operate, InLevel is extremely important for soil management: it makes it much easier to practice terrace planting and cultivate along the contour lines. Among the benefits are less erosion, better use of rainwater, less traction required by machinery, less fuel consumption, lower risk of accidents, less seed and fertilizer loss from runoff, and greater productivity.

Developing the product took several stages, from the initial concept to a finished product on the market. A prototype based on the requirements was designed, the housing had to be designed, it needed to be integrated with the mechanical and electronic components, the software for the microprocessor needed to be developed, the prototype built and tested, together with the final analysis and then the pilot batch manufactured.

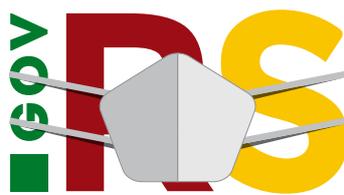
Currently, the device, which has already been patented, is in its third year of sales, and during this period, it has undergone only one update to waterproof it. The project was designed by INEL and it is manufactured through partner companies using Brazilian and imported components.

In March 2018, the device had great repercussion when it was exhibited at Expodireto Cotrijal, one of the largest international agribusiness tradeshows. Its sales today represents the second largest item in the company's sales volume and 10% of annual revenue. One of the main difficulties encountered in marketing the product is to convince the farmer to adopt planting techniques on the contour lines, since many farmers have stopped applying it and resist changing their practices, thus ignoring the productivity gains that could be achieved.

The company has a trained workforce with extensive experience in technological and competitive markets. The company's focus is on research and development of new technology, and product sales are mainly through commercial partners. In the case of InLevel, the product can be purchased directly from INEL or online. It is already being sold through a major manufacturer of agricultural machines accessories and equipment throughout Brazil.

The partnership between the company and the institution was very important. It was not just limited to sharing facilities and using the laboratories, but also in promoting the product, by using the university place at tradeshows, and their communication channels. In addition, the patent was filed as a partnership; the company and the institution are co-owners.

InLevel is a simple device to handle, is low cost, and is very useful for small and medium sized farmers, one of the most important production chains in the state.



NOVAS FAÇANHAS

NA INOVAÇÃO, CIÊNCIA
E TECNOLOGIA