

PRODUCTION STRATEGIES OF A DAIRY INDUSTRY IN URUGUAY

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ABSTRACT

Purpose: This article aims to analyze the production strategy of an industrial unit in the dairy sector, located in Uruguay.

Methodology/Approach: Qualitative research is employed, using the single case study method. Data collection was performed based on document analysis and semi-structured interviews. The results were analyzed by content analysis.

Findings: The predominant competitive priorities in the organization are differentiation, followed by quality. Such priorities are present in the organization's structural and infrastructural decisions, with a greater emphasis on infrastructural decisions, activities linked to the day-to-day production.

Research Limitation/implication: The considerations and analyzes carried out refer to the researched case, and cannot, in principle, be generalized to other organizations. In addition, the interview carries the subjective content of the interviewee's individual beliefs and values. From this research, other works on production strategy can be carried out in other units of the organization, in other companies in the same sector or under other approaches.

Originality/Value of paper: The investigation seeks to fill the theoretical gap on the production strategies adopted by organizations in the dairy sector. Insights are provided for managers, suppliers, and competitors in the sector, in order to boost and generate competitive advantages.

KEYWORD: competitive strategy, quality management, milk products, structural and infrastructural decisions.

ESTRATÉGIAS DE PRODUÇÃO DE UMA INDÚSTRIA DE LATICÍNIOS NO URUGUAI

RESUMO

Objetivo: Este artigo tem como objetivo analisar a estratégia de produção de uma unidade industrial do setor leiteiro, localizada no Uruguai.

Metodologia: Emprega-se uma pesquisa qualitativa, por meio do método do estudo de caso único. A coleta de dados foi realizada a partir da análise documental e entrevista semiestruturada. Os resultados foram analisados pela análise de conteúdo.

Resultados: As prioridades competitivas predominantes na organização são a diferenciação, seguida da qualidade. Tais prioridades encontram-se presentes nas decisões estruturais e infraestruturais da organização, com maior ênfase nas decisões infraestruturais, atividades ligadas ao dia-a-dia da produção.

Limitações e implicações da pesquisa: As considerações e análises realizadas referem-se ao caso pesquisado, não podendo ser, em princípio, generalizadas para outras organizações. Além disso, a entrevista carrega o teor subjetivo das crenças e valores individuais do entrevistado. A partir desta pesquisa, outros trabalhos sobre estratégia de produção podem ser realizados nas demais unidades da organização, em outras empresas do mesmo setor ou sob outros enfoques.

Originalidade: A investigação busca preencher a lacuna teórica sobre as estratégias de produção adotadas por organizações do setor leiteiro. São fornecidos *insights* para gestores, fornecedores e concorrentes do setor, com o intuito de impulsionar e gerar vantagens competitivas.

PALAVRAS-CHAVE: estratégia competitiva, gestão da qualidade, produtos lácteos, decisões estruturais e infraestruturais.

1. INTRODUCTION

There is a growing interest on the part of organizations to define a strategy compatible with their management in the search for ways to adapt to the changes that occur in the market. The strategy can be defined as a plane that indicates the path that the company intends to follow to achieve its organizational goals in the future (Cordeiro, 2009). The strategy can be defined as a mechanism for creating competitive advantages for long-term organizational maintenance (Teece, 2018).

In Mercosur, there is the specialization of the production base in the primary sector, mainly in products from the food sector (Silva *et al.*, 2016). Concerning the Uruguayan case, the dairy sector occupies 5% of the country's total territory with this activity. The country is the seventh largest milk exporter in the world, about 70% of national production is directed to the foreign market and 30% for domestic consumption. The Uruguayan milk production could feed the equivalent of six population of the country (Instituto Nacional de la Leche - INALE, 2019). It is noteworthy that there was an increase in the concentration of production in the sector in three organizations, being responsible for 71%, 5% e 4% of milk produced in the country (Oficina de Planeamiento y Presupuesto, 2019). The productive concentration of the sector is due to the financial situation compromised in some smaller companies, with high levels of indebtedness and inability to pay (Ministério da Pecuária, Agricultura e Pesca - MGAP, 2018).

Researchers have been dedicated to the analysis of production strategies in organizations. Oliveira, Maya e Martins (2006) analyzed the production strategy alignment with the development of cosmetics products, Guimarães *et al.* (2014) aim to understand the content of the production strategy and its contribution to the competitive strategy of an auto parts industry company. Despite studies such as Lohmann *et al.* (2019) and Reuber, Dimitratos, Kuivalainen (2017) that point out to the necessity of seeking the development of new production strategies and expansion in the market, based on the selection of options that satisfy competitive priorities, there is a lack of research in the agricultural sector, especially in the dairy sector, on the organizations' production strategies.

Considering this context, this research aims to analyze the production strategy of this industry. Specifically, it is intended to describe the organization's profile, characterize the competitive strategy, investigate the areas of production decision: structural and infrastructural. This research has as case study one of the main organizations in the Uruguayan dairy sector.

When observing the theoretical gap existing in academic production on production strategies, as well as limited literature on this subject in Uruguay, the relevance of investigating production strategies in the dairy industry is noted. This research is divided into five sections, including this introduction. In the second section, there is a theoretical review of strategy and production strategy. In the third section, the main research methodological assumptions are presented. In the fourth section, the results are analyzed and discussed. Finally, in the fifth section, the final considerations are presented.

2. COMPETITIVE STRATEGY

According to Porter (1980), the competitive strategy must relate the organization with the context in which it operates and the level of competition of the organization is based on five forces. These can be divided in: 1) threat of new entrants to the business, characterized by new companies entering a line of business with the objective of gaining market shares, implying a decrease in the profitability of the participants in the business segment; 2) customers, who, due to their bargaining power, can force the selling industry's prices to drop, as well as improve the quality of products or services, causing the group of selling companies to enter into fierce competition; 3) the bargaining power of suppliers also has great power over companies with threats of rising prices, decreasing quality, consequently implying a decrease in profitability; 4) the threat of substitute products and or services, these are companies that manufacture the same product or substitute products, leading

consumers to search for more price and quality alternatives; 5) the game between competitors, it is a dispute between companies to obtain market shares of the same line of business.

From the analysis of the five competitive forces, Porter (1980), identified three generic strategies that a company could adopt to obtain a competitive advantage, such as, leadership in total cost, differentiation, and focus. Total cost leadership aims to keep the cost ahead of its competitors and achieve a high volume of production, reducing prices. The differentiation strategy aims to create a product or service that is differentiated and perceived as unique in the market. Finally, the focus strategy seeks to focus on a specific group of customers (target audience), following a line of products or services in each geographic space. It is emphasized that there is a need to clearly know the market in which it operates.

The strategy can be defined as a set of concepts, policies, arguments, and actions, which seek to respond to certain organizational challenges. This definition includes the mapping of how the company will compete, the specific business model selection, market segments and its entry approach. The strategy allows creating and maintaining a distinct advantage in the market and, therefore, maintaining and sustaining it in the long term (Teece, 2018).

It should be added that the strategy has three critical components, which are the objective, the scope, and the advantage. The objective seeks to understand what is intended to be achieved after a certain period. The scope is intended to delimit which will be the market segments and the geographic space in which the organization operates. The advantage is what the company will do differently or better than the others. The advantage is the proposal to create value for the client, being necessary to manage the internal activities considering the external environment (Collis and Rukstad, 2008). The organizational strategy is related to the ability to anticipate the reactions of competitors, the defense of intellectual property, the realignment of the organizational structure and culture, in addition to the technological possibilities available for application and development. All of these factors make strategy the driving force of organizational competitiveness (Teece, 2018).

Its three hierarchical levels are: a) corporate strategy; b) business strategies and c) functional strategy. The corporate strategy covers the organization with the purpose of implementing objectives and goals to be achieved. The business strategy serves the different departments of the company, such as the sector of marketing, finance, human resources, production, among others. The functional strategy is aimed at meeting the specific requirements of the previous levels (Brønn and Brønn, 2018). It is important to note that the strategy can be classified by hierarchical levels, which are: corporate or global strategy (first level), competitive or business strategy (second level) and functional strategy (third level). The corporate strategy is the highest level of business strategy, covering marketing decisions, such as which markets the company participates in, how this organization structures itself to reach certain niches and how resources are allocated to corporate activities considered as elements (Hayes et al., 2008).

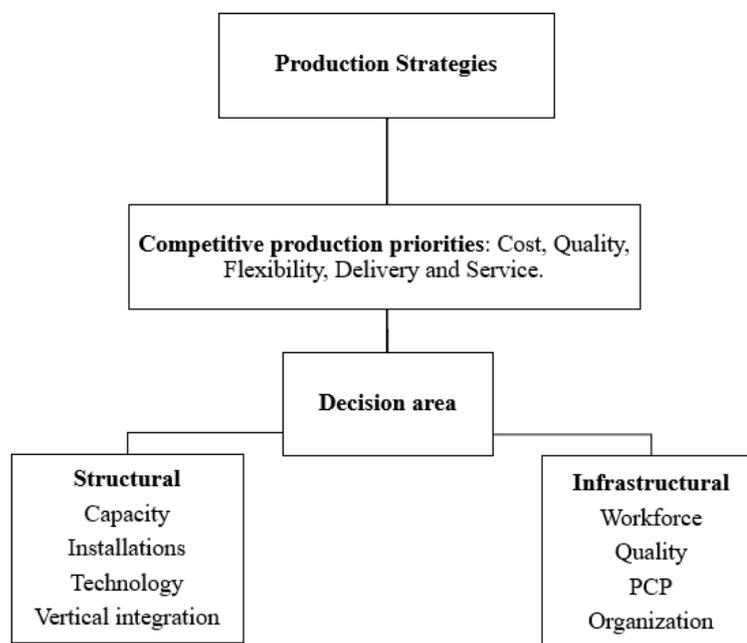
The business or competitive strategy as it is best known, it involves a competition strategy for each business unit, this strategy will define how, and where, it will compete, for that each unit will be deployed in specific functions. Functional strategies correspond to the way in which the functional areas will act, to meet the expectations and general objectives of the organization, allowing greater sustainability of business strategies (Wit and Meyer, 2010).

Among the functional strategies, there is the production strategy. The production strategy can be defined as a systemic effort to align internal production goals with the company's competitive interests in relation to its market. Production strategies originate from business strategies, which are a reference for guiding decisions: a) structural (productive capacity, facilities, technology and vertical integration); b) infrastructure (workforce organization, quality management and production planning and control) (Mohamad, 2014; Sellitto and Luchese, 2018).

Specifically, the production strategy is defined as a set of objectives, policies and self-imposed restrictions that jointly describe how the organization proposes to direct and develop all

the resources invested in operations, in order to better fulfill (and possibly redefine) its mission. The production strategy is based on the top-down approach, which seeks to align production management with the corporation's strategy, to convert production into a valuable strategic resource (Mohamad, 2014). The formulation of this strategy kind must meet competitive priorities and follow two areas for decision making, presented in Figure 1.

Figure 1 – Competitive priorities and production decision areas



Source: Sellitto e Luchese (2018).

As shown in Figure 1, the production strategies are developed from three stages. In the first, competitive production priorities are defined, which are: costs, quality, flexibility, delivery, and service. These priorities are the factors demanded by the market and which allow the positioning of products and goods, in view of the requirements and needs of the market/customers. In the second stage, resources are defined, which are the structural and infrastructural elements, such as productive capacity, facilities, human resources, process technology, among others. In the last stage, the development of new production strategies is sought, based on the selection of options that satisfy competitive priorities (Lohmann et al., 2019).

According to Espino-Rodríguez (2016), structural decisions require substantial capital investment and, when carried out, are difficult to change, this characteristic leads companies to trust their budget process as the first form of access to structural decisions. The first decision refers to the production capacity, which will determine the amount of production with a given machinery and labor in a specific period. The capacity is linked to losses in the production process, such as defects, the policy of supplying materials, monitoring, training, quality, among others.

Vertical integration includes supply decisions, because its objective is related to the structural aspect of a production organization, where it covers how much work is needed internally and how much must be purchased from external organizations (suppliers). Based on this decision and data collected from its customers and suppliers, there will be a plan with the proportion that should be used for outsourcing, according to the demand and deadlines required by customers. In the facilities, there is a need to pay attention to how operational capacity can be segmented into individual operating units, including the quantity and size of each location, where they will be located and their respective specializations. The technology involves the selection of information

and technologies to use in the production process, the best choice of equipment, where they will be installed, how they will be interconnected and coordinated.

Infrastructure decisions, on the other hand, are discussed by the authors, Diaz, Peña and Muiña (2007) and Lawrence and Victor (2019), with decisions about human resource systems involving choices related to the selection of people, required skills, compensation system and employee safety. Work planning and control systems determine the number of items to be purchased, the aggregate plan, the planning, control, and reservation of waiting time. The quality system deals with defect prevention, monitoring, intervention, and elimination, while measurement and reward systems deal with the choices associated with measurements, bonuses, and promotion policies. The product and process development system involves the decisions made by the leader and followers responsible for this system and the organization of the project team.

From this approach, it can be said that the production strategy is seen through two perspectives, that approach two decision sets, involving the structural and infrastructural decision. In the next section, it will be presented the methodology of the present research.

3. METHOD

This research aims to analyze the production strategy practiced by the Uruguayan dairy company. So, a qualitative approach is used. In this sense, qualitative analysis seeks to generate knowledge based on human experience, through a rigorous and methodical analysis to generate meaningful and useful results. In a complementary way, it consists of a set of interpretative practices that give visibility to the events that appear in the world. Qualitative research was carried out through thematic analysis, which aims to identify, analyze, organize, describe, and report themes found within a data set, focusing on applied research (Nowell et al., 2017).

The research is characterized as descriptive, as its primary objective is to describe the characteristics of a given population or phenomenon or to establish relationships between variables. In addition, it allows the construction of new views on a reality already known to the extent that there is objective and detailed observation, analysis, and description (Fritz and Vandermause, 2018).

The method employed is a single case study, where only one case will be evaluated, thus, the Uruguayan dairy industrial unit. This tool allows investigating a specific event (structural decisions and infrastructures), in a real situation, especially when the existing boundaries between the context and the phenomenon are not clearly defined, thus adopting varied data collection methods. With this research as a case, the dairy company and as a unit for analyzing production strategies, this case study can be classified as intrinsic or particular, because it seeks to better understand a particular case in itself (Yin, 2014).

This study is applied in one of the industrial units of the dairy company, located in the city of Rivera - UY, border with Brazil. As a data collection technique, there is document analysis and semi-structured interviews. Document analysis consists of investigating archives, whether texts, photos, videos, databases, and other types of documents, public or private, available, and accessible to researchers. There are some divergences in the literature regarding document analysis, as it can be considered as a type of research, procedure, strategy, or data collection technique, as addressed in this section (Silva et al., 2019). These files include municipal and national data from the Uruguayan Government, as well as legal documents from the organization and available statistical sources.

The semi-structured interview is the second source of data collection. This type of interview consists of open and closed questions in which the informant will be able to discuss the proposed topic, in which the context will be like that of an informal conversation (Yin, 2014). The interview

script (Appendix A) addresses questions about the general aspects of the organization and the industrial unit, the characterization of the competitive strategy, and the decision areas of the dairy industry, structural (production capacity, facilities, technology and vertical integration) and infrastructure (workforce, quality, Production Planning and Control, organization, among others).

The interview, was based on the procedures of Alves Filho, Nogueira and Bento (2011) there was a pre-tested with specialists in the field and was carried out with the current Manager of the Industrial Plant, 57 years old, with 40 years of experience in the company and 15 years in management of the production sector. The interview lasted an average of 53 minutes, being recorded, and then transcribed.

The data were submitted to content analysis proposed by Bardin (2008). Such method consists of four stages, which are: (1) analysis organization (elaboration and standardization of the data to be analyzed), (2) coding (aggregation strategies in homogeneous blocks), (3) categorization (conceptual grouping of data) and (4) interpretation (analysis of results in order to respond to the research objectives) (Filardi, Barros and Fischmann, 2018).

The industrial unit choice was due to the relevance of its activities to the Uruguay northern region because it is the only unit installed in the area, responsible for supplying the nearest cities. It is considered that the study of this unit is relevant, as it is in a border region, which enables the company's strong interaction with the foreign market, without leaving Uruguayan territory. After discussing the methodological procedures used, the following section presents and discusses the main results found.

4. ANALYSIS AND DISCUSSION OF THE RESULTS

This section is divided into three subsections. In the first, general aspects about the dairy industry are addressed; in the second, it is about the competitiveness of the researched company; in the third, production decisions are discussed.

4.1 General aspects of the organization and the industrial unit

At the beginning of the 20th century, the dairy sector had an unstable scenario of demand and supply, in addition to the lack of sanitary inspection of the product. From this context, in the early 1930s, five main companies were opened, including the organization under analysis, which became part of the dairy industry's heritage. Thus, producers were guaranteed the sale of their production, the supply of the population and the government's participation in the inspection of products. The mission of this organization is to collect, process and commercialize all the milk produced by the cooperation partners with the highest levels of efficiency, in order to maximize the value of the milk received in the short, medium and long term, with the lowest possible level of risk. Within the scope of the sustainability model, they are committed to sustainably improving the income of their producers and, consequently, their quality of life. The manager of the researched industrial unit, on the other hand, points out that:

“First of all, the mission involves taking care of the industry's goods, that is, mainly when referring to producers. It is essential to guarantee the worker safety, occupational health, everything that implies, not only health, but the employee's rights and obligations, the moment he enters the company he is referred to the Banco de Seguros del Estado (BPS), to obtain all your rights as a worker”(Interviewee 1).

This organization to be a relevant exporter of high-value ingredients and mixtures with world-class standards of quality, experience, and technology. In addition, the desire to continue growing in the marketing of cheeses in the world stands out, which makes it possible to add value to milk, as well as being one of the most competitive companies in the region in direct consumption

businesses, being the main one in the Uruguayan market. In other words, the manager confirmed this view by saying: “We want a market for innocuous products, products that seek to be market leaders” (Interviewee 1). Regarding the company's values, it is possible to mention some aspects, such as integrity, ethics, respect, teamwork, search for innovation and management of results, excellence in quality, productivity, and professionals in the industry.

In 2019, the organization had eight dairy plants, one was located near the Uruguay-Brazil border in the city of Rivera. The industrial unit was built in 1972 and has undergone multiple improvements due to its growth in production and better work adequacy. In this unit, pasteurized milk is mainly produced and works together with the dry products storage and distribution center (powdered milk and whey), butter, sour cream, dulce de leche, desserts, yoghurts, ice cream, juices and products frozen, thus serving the northern part of the country. Regarding the target audience, there is no defined positioning of the company, and its products are marketed to the public. However, it has been working on the development of products that aim to serve the segment of consumers concerned with health: athletes; celiac and diabetic people.

The industrial unit is composed of 31 employees, who are: 1 production manager (interviewee), 2 supervisors responsible for a entire unit control, 3 electromechanical, responsible for maintenance (stoker - Professional who operates steam boilers, conducting the fires and cleaning equipment), 3 laboratories, who perform product quality control, 5 administrative, responsible for sales and distribution, 6 machinists, for filling and pasteurization, 8 operators (conditioning) and 3 hired to provide services general and garden cleaning.

Logistics activities are carried out at four distribution points, which are divided by city regions. Daily, trucks go to the industrial unit to collect the goods needed to supply different sale points. Each distributor has 200 sale points, their data are entered in the system used by the organization, where monitoring is allowed, identifying who was sold and who was not. Currently, all sale points are already supplied with the company's products. The following subsection discusses the organization's competitive strategy.

4.2 Competitive strategy characterization

To analyze the organizational competitive strategy, Porter's five competitive forces were employed, which are the threat of new entrants, substitute products, bargaining power of buyers and suppliers, and competitors. In this context, we sought to characterize the competitive priorities of the dairy industry. Regarding potential entrants, the respondent argues that basically, there was no entry of business in recent years, but some industries were unable to maintain the business due to the country's economic situation. According to the unit manager: "An industry does not enter the market with price and quality, it is complex to carry out the business" (Interviewee 1).

Barriers to entry resulting from the absolute cost advantages for existing companies are present when they have exclusive access to certain assets or resources, which allows them to manufacture, with the same scale of production as a potential entrant, at a lower cost. low (Fagundes and Pondé, 1998). These advantages can be identified as access to the technology needed to produce products; amounts of expenses for brand disclosure; quality and complexity of products, installations of industrial units throughout the country, high consumption of the product in the population. In this sense, these elements allow the organization to be maintained in the long term, as well as its competitiveness (Teece, 2018).

Regarding substitute products, according to the interviewee, the dairy industrial unit competes with other products, mainly with products from an Argentine dairy manufacturer, which is present in the Uruguayan market. However, the presence of these substitute products in Uruguay poses no threat to the organization, since most of the milk received by the company is sent abroad, from its derivatives, that is, in cheeses and powdered milk. One of the reasons that lead a company to look for new market segments is the search for new consumers, products with worldwide

acceptance, possibility of production growth and reduction of unitary fixed costs (Reuber, Dimitratos and Kuivalainen, 2017). Regarding buyers' bargaining power, the market has been demanding from the organization a constant search for quality, if this is not met, sales have hardly occurred. According to Porter (1980), buyers compete with the industry by pushing prices down, bargaining for better quality and competitiveness among competitors.

A change occurred in the company's production process, where the milk from the industrial unit was previously distributed and preserved in dairy bottles, simple methods used by milk producers. In 2019, the unit has a more efficient structure, the use of cistern tanks, which enabled greater control over the temperature and conservation of milk. The requirements changed over time, previously a minimum quality was enough for the company to be a success, but given the changes in the market, the industry was forced to adapt to the new needs of consumers. Thus, there was the creation of value for the customer based on quality (Collis and Rukstad, 2008).

In this way, it is suggested that the organization applies generic differentiation strategies, as products present quality as a differential in relation to competitors, and focus, since it is diversifying its product portfolio for consumers and diabetics (Porter, 1980). The concept of innovation was, for a long time, associated only with technological development, just as it happened with quality, and this concept has evolved over time, currently talking about innovation in terms of strategy and operational processes and management. In other words, it is increasingly difficult to imagine innovation without quality and quality without innovation (Roldan; Ferraz, 2017).

Regarding the bargaining power of suppliers, the organization has 1,050 suppliers throughout Uruguay, with long-term contracts, subject to renewal, if these strictly follow the legal norms of the industry. The company's policy is passed on to suppliers, where compliance with legal standards is required, such as: safety, occupational health, and responsible environmental management. It is also required by industry, quality, and innocuous ingredients in the production of packaging materials. Communication with suppliers is permanent, through the internet portal, for purchases, orders, billing, and payment. In addition to the long-term relationship of trust between the organization and the suppliers, the existence of specific assets in the configuration of these transactions is highlighted (Chen; Chen; Wu, 2017).

Regarding competitors, the organization is highlighted within the market in which it operates, occupying the first place as the largest dairy exporter in Latin America. Industry products are present in 68 countries in America, Europe, Africa, and Asia. Industry exports represent 3% of the world dairy trade. In Algeria, the industry successfully participated in different tenders, obtaining important placements of powdered milk. In Brazil, the demand for dairy products continued to be important, given the brand's prestige in the country. In Russia, despite the difficult economic situation, consumption of dairy products has not decreased. Exports to Cuba and China have almost tripled, currently the industry is working to expand the placements in the Chinese market, since there are free trade agreements that the country has with New Zealand and Australia.

In general, according to the unit manager, the company's competitiveness is based on ensuring the availability of the product so that it can reach the customer in the right condition and in the right place. The organization is structured by a group of employees from the commercial marketing department, who carry out satisfaction surveys and monitor points of sale. The unit manager adds that:

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activity, everything must go through the team of engineers, so as to proceed with a certain operation”(Interviewee 1).

In this sense, the organization has quality as the main competitive priority of production, be it the quality of milk, as a basic raw material, or of its final products. Flexibility and delivery are emphasized as secondary competitive priorities, given that the organization supplies products to several markets, both national and international (Lohmann et al., 2019). The following subsection deals with specific decisions in the production area, which cover structural and infrastructural aspects.

4.3 Decision areas of the dairy industry

For the production system to be efficient, it is necessary to develop a standard of actions related to the structural and infrastructural decision areas. Structural decisions are those that seek to influence project activities, linked to the project (Espino-Rodríguez, 2016). Infrastructure decisions will influence the organization's workforce, planning, control, and improvement activities, linked to the day-to-day production (Lawrence; Victor, 2019). Tables 1 and 2 present a summary of the information related to the structural and infrastructural decision areas of the company and specific data of the studied unit.

Table 1- Structural areas characteristics of the dairy industry

Installations	<p>Organization: The organization consists of 8 industrial units, all in Uruguay, which are in Florida, Villa Rodriguez, Canelones, San Carlos (Maldonado), San José, Rivera, Soriano, and Montevideo. The production consists of whole and skimmed milk, powdered milk, yoghurts, cheeses, desserts, dulce de leche, natural juices, dairy drinks, frozen products, as well as hamburgers and fries. In addition to this production, the industry produces products suitable for celiac and diabetics.</p> <p>Unit: It is installed at the entrance to the city, on Route 5, the Uruguayan highway that connects Montevideo to Rivera. This same highway also passes through the cities of Canelones, Florida, Durazno, and Tacuarembó. It produces whole and skimmed milk and distributes the products throughout the north of the country.</p> <p>Aspects that led to the installation of the unit in this location: Excessive demand for electricity, available in that location for the functioning of the production process and for the adequate use of water for the preparation of the product. Proximity to the main raw material: milk (drum), a place suitable for truck circulation and a strategic point for supplying nearby cities.</p> <p>The building is approximately 2,200 m², divided into warehouses, workshops, dressing room, cafeteria, laboratory, and factory where pasteurization and potting are carried out. Service life / machine and equipment: 20 years (with maintenance).</p>
Capacity	<p>Organization: Installed capacity of 3,500,000 liters per day, 1,000,000 for internal consumption and the rest for export.</p> <p>Unit: Between 45,000 to 48,000 liters of milk per day.</p> <p>It contains 5 stock depots: Dulce de leche deposit (20 m²), by-products chamber (80m²), long life deposit (80m²), Milk chamber (150m²), deposit of inputs (180m²).</p>
Vertical Integrat	<p>Outsourcing services: Cleaning, equipment maintenance, transportation.</p> <p>Frozen Products: Hamburgers, tomato sauce and fries, are prepared by a third party company, which follows the requirements of the dairy company.</p>
Process and product technology	<p>Products made with the latest technology, such as: LED technology (Light Emitting Diode), cisterns, test apparatus for the analysis of antibiotics in raw milk, milking equipment, refrigeration equipment, tractors and agricultural machinery.</p> <p>GLF (Fresh Milk Management) system, which manages in different modules the entire milk collection operation, obtaining quality, sales and payments to producers and other processes in real time. GLF connects to SAP (Systeme Anwendungen und Produkte in der Datenverarbeitung) ERP (Enterprise Resource Planning).</p> <p>Well-defined processes (inputs and outputs): Development of new products and production processes.</p>

Source: Self elaboration.

It is noticed that the Rivera unit is restricted to produce only whole and skimmed milk, and to supply the nearby cities that do not have industrial dairy units, so this can solve possible failures

in the availability of the product in the region. Although the by-products (yogurt, cheeses, juices, ice creams, among others) are not made in Rivera, this unit must be able to store the same products that are sent by the head office located in Montevideo to the Rivera unit. About outsourced suppliers and services, these are managed and selected by the head office. However, the inspection of the services provided is the responsibility of the unit's general manager. To produce milk, it is extremely important to use the latest technology, from the moment of collection in the drum, until the moment it is received at the unit. The organization in general has levels of automation and products with similar technological content.

Regarding the infrastructural decisions presented in Table 2, it can be observed that the management tools in relation to quality, production planning, and control, work organization and product development are well structured and planned by the organization.

Table 2 – Infrastructural areas characteristics of the dairy industry

<p>Organization and Human Resources</p>	<p>Organization: It is a priority for the company to hire internally and offer development and progress opportunities for current employees, which creates high mobility for its team throughout the organization. This allows employees to be offered high job stability and opportunities for growth within the company. Responsibility positions: 109 employees (29% women, 71% men); age range: > 30 to <50; Monthly team: 675 employees (26% women, 74% men); daily workers: 1059 employees (11% women, 77% men). The company's directory is located at the headquarters (Montevideo), which is structured by 1843 permanent employees and has 1914 milk producers. Trainings, consultancies, and workshops for producers, 60 courses are given annually in the areas of preparation and use of mixers, calf rearing, artificial insemination, training for milking, handling of dry and prepared cow, implantation and management of pastures, operation. Unit: General production manager, 2 supervisors, 3 electromechanical, 3 laboratories, 5 administrative, 6 applied operators (train drivers), 8 operators (conditioning, 3 contractors (services)). 00 hours.</p>
<p>Quality</p>	<p>Organization: Center for innovation and quality in a state-of-the-art building with around 50 people working on innovation</p>
<p>Development Of products</p>	<p>Technological Laboratory of Uruguay (LATU). Certificates: ISO 9001: 2008, ISO 22000: 2005, ISO / TS 22002-1: 2009 UNIT-ISSO / IEC 17025: 2005, OSHAS 18001: 2007, ISO 26000: 2010 and ISO 14001: 2004. All units of the company are composed by a team of quality, Environment and SYSO (Segurança y Salud Ocupacional), dedicated to leading and implementing the guidelines of the Integrated Management System. Organization: Product development is carried out at the headquarters (Montevideo). In 2019, the company opened its nutritional products unit in the city of Villa Rodriguez, with important investments for those biotechnological products for the nutrition of newborns, athletes, and the elderly. The products are made to high standards in terms of safety, technology, and production, in line with pharmaceutical criteria and responsibilities to the environment and society. For the local and export markets, the company strives to know the satisfaction of its customers, through satisfaction surveys carried out periodically in Uruguay and abroad. Unit: Performs only the maintenance, preparation, milk, and distribution of products received by the headquarters, supplying the northwest region of the country.</p>
<p>PCP Logistics</p>	<p>Organization: Associated transport system that allows you to transport products in a timely manner to all your destinations, national and international. There are 1,500 shipments, 1,000 distributors and 350 trucks. Transport companies work exclusively for the company. Unit: Logistic activities form a system that is a link between production and the market, with incoming logistics (storage) and outgoing logistics (product distribution). The company maintains permanent communication with distributors. All coordination takes place through management software, applied to the distribution network with information from the points of sale, geographically referenced, with volume and transaction for the entire territory. The transport used by the unit is overland, where the unit's products are transported daily to different regions of the city and nearby cities, such as Salto and Tacuarembó. On Mondays, Wednesdays and Fridays, a truck moves from the Rivera unit to the city of Artigas, to supply the local commerce. A truck with by-products (yoghurts, cheeses, sweets, powdered milk) is received twice a week from the headquarters (montevideo), all products made by the organization, with the exception of the milk that is produced at the Rivera unit itself.</p>

Supplies	<p>Organization: The purchasing function is centralized at the headquarters, currently there are 1,914 contracts with dairy producers, 1050 suppliers, with long-term contracts, renewable if they comply with the legal requirements of the dairy company. Part of these suppliers works exclusively for the company, where they carry out product development together, working with innocuous materials and quality ingredients for the preparation of packaging and branded products.</p> <p>PROLESA (Produtores de Leite SA), a private company belonging to the dairy industry, is dedicated to providing a wide variety of supplies and services for the production of dairy establishments, becoming a fundamental part of the food production chain of the largest industry dairy products in the country.</p>
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Source: Self elaboration.

The organization in its general aspect, presented in 2018 a turnover rate of -0.5%. Thus, it is noted that 100% of women and 91% of men kept their jobs after 12 months of their reintegration. During this period, 65 men and 28 women in the company exercised their right to paternity and maternity leave. It should be noted that women have the benefit of reduced hours until the baby's year, exceeding the 6 months provided by law. The industry also promotes breastfeeding, since 2013 (before being a legal requirement), they have breastfeeding rooms in all industrial units and in their central administration, with the appropriate amenities. Even so, there is a lower number of women working in the industry, compared to men who occupy most jobs, regardless of the position.

The evaluation of its suppliers is constantly carried out, and work is carried out together to develop and qualify them. The qualification of the producing partners is a priority for the industry, since constant training is carried out, regarding the management of the field, animal care, financial management and inspection of the quality of the milk.

Considering the industry management, meetings are held weekly, divided into committees, classified according to the topic to be discussed, as well as the Human Resources Committee, composed of three members of the Board of Directors, the General Manager, the Human Resources Manager and the Operations Manager. Its responsibilities are to coordinate the execution of personnel policies approved by the Board of Directors, to have the initiative for changes in the personal policy to be proposed to the Board of Directors and finally to function as a crisis committee. In addition to the HR Committee, there is also the Audit and Surveillance Committee, Engineering Committee, Water Committee, Energy Committee, among others.

Concerning quality, can be observed that the organization is constantly looking for improvements in its production process to achieve the proposed competitive strategies. The quality level of the milk received meets a world-class industrial treatment that allows the company to meet the growing demands of its national and international customers. All units organize their activities under an integrated management system based on ISO 9001: 2015 certification.

The company has made efforts to launch new products on the market, investing heavily in differentiated products aimed at health and sustainability for the population. Cost reduction does not seem to be a priority for the company, as they demand a high degree of quality, specialization, and technology to produce their products. Brand consolidation is an important factor for the organization, which often works to represent the country as a quality factor. Free and responsible commercial communication is also carried out, transmitting values to society. Products are communicated through commercial notices and sponsorship of cultural events.

In the case of the Production Control Plan, we seek to correct certain aspects in logistics, such as the distribution of products and their availability at all points of sale. All units of the company rely on SAP, a German company that provides software services for the ERP business integration system, it is used as a way of controlling the activities carried out in the company and mainly the logistical part of it. The monitoring of each process, from the collection of milk from the producer to the final consumer, is frequently monitored by the industry through distribution channels. The Rivera facility has full responsibility for supplying nearby cities located in the north of the country.

The purchase of all supplies needed for operations is carried out by the Head Office in the city of Montevideo. Suppliers must strictly follow the company's standards, in terms of quality and sustainability. Dairy producers deserve even more attention, there are currently 1914 contracts, in recent years there has been a drop in enrollment, due to cultural and mainly economic issues in the country. The next section addresses the main conclusions of the research, about the profile, the competitive strategy and the production decisions of the case analyzed.

5. FINAL CONSIDERATION

This research made possible to analyze the production strategies of an industrial unit in the dairy sector, located in the northern region of Uruguay. The dairy company has been present in the market for over 80 years, with 8 industrial units installed, it is considered the largest private company in the country, due to its high performance and business development.

The data collected presented that the company has a historic notoriety, as it allowed the development of the dairy sector, generated benefits for the Uruguayan population and allowed a management of transparency before the State. It can be said that in 2019, in addition to being nationally recognized as the largest Uruguayan dairy company, it also grows internationally, ranking first in the largest exporter of dairy products in Latin America. However, to achieve the requirements of the current scenario, the company had to define its priorities as an organization and implement strategies to achieve its purposes. In this way, this research sought to analyze the competitive priorities used by the organization and it was noticed that it prioritizes aspects related to the differentiation and quality of its products.

In the structural decisions of the company, it can be highlighted that quality is present in the selection of information and technologies used in the production process, which are: LED technology, cisterns, test apparatus for analysis of antibiotics in raw milk, milking equipment, equipment cold, GLF system, which manages in different modules the entire milk collection operation, obtaining quality and other processes in real time.

In infrastructural decisions, the quality aspect had a greater development, as the company has a team dedicated specifically to carry out quality assurance activities, with analysis and inspection laboratories for the development of products and materials, with high standards in terms of safety, aligned with pharmaceutical criteria and responsibilities to the environment and society.

The organization frequently evaluates its suppliers, carrying out work together for their development and qualification. The producing partners qualification, since constant training is carried out, regarding the management of the field, care for the animals, financial management and inspection of the quality of the milk. Concerning mentioned aspects, it is clear that product differentiation is directly linked to quality, making itself present in the organization's infrastructural decisions, where greater application of the same in the company's day-to-day activities, that are related to the center innovations, differentiated products concerned with the well-being of consumers.

Although the company occupies a prominent position in the market in which it operates and in commercial relations with its customers, it seeks to correct possible errors identified through the survey's results on the satisfaction of its customers, to improve its competitive strategies. In short, the organization's competitive priorities, in the structural sphere, are technology and, in the infrastructural scope, is quality. Both are complementary, and the first facilitates and provides the necessary instruments so that employees, whether internal or external to the organization, reach specific quality criteria required by the market, which demands a differentiated product.

It is important to note that the dairy market belongs to agribusiness, which is predominantly formed by organizations and enterprises focused on the commodities production. In this analysis, the organizational strategy and, specifically, the production strategy were crucial for the construction of competitive advantages, maintenance and leadership in the Uruguayan market. As

limitations of the study, it is suggested that the conclusions and analyzes carried out refer to the researched case, and cannot, in principle, be generalized to other organizations. In addition, the interview carries the subjective content of the interviewee's individual beliefs and values. Therefore, it is suggested for future researchers to carry out studies within the theme of production strategies, with an analysis of all units of the company, being able to expand the theme studied to other companies in the same sector.

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Appendix A – Interview Script

Unit:

Interviewee:

Part I – Company general information / unit

1. Interviewee's name
2. Interviewee's position
3. Time in the company
4. Number of employees in the unit / (location)
5. Unit size
6. Mission, vision, and value.
7. What factors are essential for the manufacture of products?

Part II - Data on the organization's competitive strategy

8. How many companies in the same segment and product line entered the region in the last year? What were the factors that threatened them to enter the market?
9. What variables is the company's competition in the dairy sector based on?
10. Is there strong competition for substitute products? (for example, similar products produced with other raw materials / inputs)?
11. What is the number of clients?
12. What is the main commercialized product?
 - a) What factors does the customer value / appreciate?
 - b) Is there negotiation by customers when buying the product? If so, how does it occur?
13. Is there negotiation during the purchase of raw materials / supplies?
14. From which strategy can you identify a company's competitive position?
15. How does the production department participate in the company's strategic planning or management?

Part III - Structural and infrastructural decisions

16. Does the company have a system or computers integrated to a local net or internet?
 - a) Does the use of technology increase the company's competitiveness? If so, how?
 - b) Does the company have a production system for the projects and technical drawings development?
 - c) What is the average age of the machines and equipment that compose the current plant?
 - d) Are the unit's facilities close to the customer and suppliers?
 - e) What is the production capacity?
17. What is the maximum products capacity that can be produced? What are the main subcontracted components?
 - a) If the company outsources components to others, what is the production percentage?
 - b) Which are the indirect activities subcontracted?
18. Does the company conduct a customer satisfaction survey?
 - a) What is the main problem reported by customers?
 - b) What is the quality control system adopted?
19. What benefits does the company provide to employees?
 - a) Does the company have multifunctional employees?
 - b) What is the company's remuneration policy?
20. How do you analyze the production strategies in relation to the company's competitive strategy?
 - a) How do you think the strategy could be improved?
 - b) What is the main challenge for the production department and for the company in the future?

DECLARATION OF CONTRIBUTIONS TO THE ARTICLE - CRediT

ROLE	MLSilva	NLSCobas	IBMatta	LJJuliani
Conceptualization – Ideas; formulation or evolution of overarching research goals and aims.	X			
Data curation – Management activities to annotate (produce metadata), scrub data and maintain research data (including software code, where it is necessary for interpreting the data itself) for initial use and later re-use.		X		
Formal analysis – Application of statistical, mathematical, computational, or other formal techniques to analyze or synthesize study data.	X	X		
Funding acquisition - Acquisition of the financial support for the project leading to this publication.	X		X	X
Investigation – Conducting a research and investigation process, specifically performing the experiments, or data/evidence collection.	X	X		
Methodology – Development or design of methodology; creation of models.	X			
Project administration – Management and coordination responsibility for the research activity planning and execution.	X			
Resources – Provision of study materials, reagents, materials, patients, laboratory samples, animals, instrumentation, computing resources, or other analysis tools.		X		
Software – Programming, software development; designing computer programs; implementation of the computer code and supporting algorithms; testing of existing code components.		X		
Supervision – Oversight and leadership responsibility for the research activity planning and execution, including mentorship external to the core team.			X	X
Validation – Verification, whether as a part of the activity or separate, of the overall replication/reproducibility of results/experiments and other research outputs.			X	X
Visualization – Preparation, creation and/or presentation of the published work, specifically visualization/data presentation.			X	X
Writing – original draft – Preparation, creation and/or presentation of the published work, specifically writing the initial draft (including substantive translation).	X	X		
Writing – review & editing – Preparation, creation and/or presentation of the published work by those from the original research group, specifically critical review, commentary or revision – including pre- or post-publication stages.	X		X	X