

## **INNOVATION MANAGEMENT IN THE BREWER MARKET: THE WÄLS MADLAB CASE STUDY**

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## Abstract

It is proposed a discussion about the beverage sector represented by craft (or special) breweries. It was observed a trend to create new businesses from the craft breweries and their emphasis in the world scenario. To mark this discussion, the following question was used as a starting point: is there any strategy for innovation management in the national breweries? The objective was to elaborate a paper that approaches this discussion and helps to elaborate a Brazilian literature on the subject. To reach this goal, a bibliographical research was carried out that involved academic works (theses, dissertations, scientific articles, books) and through the observation of the national sector's behavior. It was concluded that even though the craft breweries sector is new, it begins to develop and to be concerned with the innovation management as a market strategy.

**Keywords:** Innovation Management; Market; Craft Breweries.

## 1. INTRODUCTION

The theme of innovation in the breweries has gained relevance in the last decades. Fomented by a growing share of craft (or special) beers in the alcoholic beverage market in Brazil. It has been noticed an opening of a new market niches through new products and services.

The microbreweries produce craft beers, which are known by the quality of the ingredients in their composition and by the care in their manufacturing processes. In this market niche,

consumers do not only seek for products with an outstanding quality, but also for the experience of tasting different types of products and innovating services, which range from interesting labels until tourist services related to the beer's world.

The need to develop studies about innovating products demonstrates great relevance for the current economic scenario. Whereas they determine the survival and success of a company in the market. In this context, this work proposes to address this topic related to the beverage production market of Brazil and also, the innovating strategies adopted by this sector. Specifically, in the brewing sector, the innovations in its production and the marketing of craft breweries.

A survey, conducted by Cerv Brasil (2014), indicated the Brazilian Beer Market as one of the four largest in the world. It was classified in the third position of the world's production of beer in liters, with 14 billion liters produced. Also, this value moved about 1.6% of the country's GDP. In addition to its large consumption, another survey indicated that beer is the preferred drink in 2/3 of Brazilians for celebrations, with 64% of preference (IBOPE, 2013). It generates 2.2 million jobs, connecting one million small and medium-sized companies in a productive chain that involves construction, agriculture, glass, aluminum, pulp and paper, logistics and other economic sectors (CERV BRASIL, 2017).

It is also worth to point it out that the first Brazilian brewery was created in 1853 and now it is present all over of the country. The Brazilian brewing sector

received investments of around R\$ 20 billion between 2010 and 2014, which reverberated in 14% of Brazil's processing industry (CERV BRASIL, 2017).

In a market that already produces significant amount of beer liters and moves a lot of resources, a new trend appears: the production of craft (or special) beers by the micro-breweries, with innovating products or services that add a certain value to this traditional drink. Such movement can be justified by several factors, among them, the consumer's search for products with different levels of sophistication and customization that can be provided by the craft market.

Given this scope, it is questioned: is there any strategy for innovation management in national breweries? Therefore, the objective is to elaborate a paper that approaches this discussion and helps to elaborate a Brazilian literature on the subject.

Considering the hypothesis that with the craft beers sector's growth, there is a need to look for strategies to remain competitive. One of them, it is the investment on innovation. In order to achieve the established goals, it was carried out a literature review based on dissertations, theses, scientific articles, graduation works, brewery sector researches carried out by governmental and private institutes. Also, it has been elaborated a paper with a brief history of beer; the brewing market and the micro-breweries; the innovation management; the innovations in the brewing sector; the industry trends and the Wäls MADLAB case study.

## **2. THEORETICAL FOUNDATION: BEER AND INNOVATION**

The references that support the presented discussion will be addressed in this thematic field. A discussion was organized to verify the existence of some strategy of innovation management in the national breweries; a brief history of beer; the brewing market and the micro-breweries; innovation management; the innovations in the brewing sector; the industry trends and the Wäls MADLAB (2017) case study.

### **2.1 A Brief History of Beer**

The beer is one of the oldest consumed products in mankind. It is estimated that it was originally produced by the Sumerians and the Egyptians in ancient times and it was developed with the technical progress in the management of the crops of maize, rye and barley. The beer was improved with the use of hops and manufacturing process techniques rules improved by German brewer masters from the 13th century, which gave a better characterization of the product, becoming very similar to what we can find today. The industrialization process in the Industrial Revolution had a distinct impact on beer production and distribution in relation to the old craft traditional model (SANTOS et al., 2011).

The act of brewing beer is ancient and it is part of the humanity's history, going through the civilizations and territorial expansions. Tornic (1986) illustrates this statement by saying that beer was produced by people between the years of 4000 and 5000 before Christ.

The Sumerians hold the record of the first brewing of beer as well as the Assyrians and the Babylonians. The drink produced by the Sumerians was made from ground grains and after cooking was consumed as “liquid bread.” Tschop (2001) states that “liquid bread” is a precursor to the current beer consumed in the world.

According to Morado (2009), the origin of the beer approaches the origin of the bread, but it is not possible to determine with certainty when the beer production method was invented. And it is possible that the discovery of the process of its manufacture occurred at random when farmers tied the crop in pots, and this input, by chance, had become wet. After this incident, the input was put to dry and became an ingredient for a soup that was abandoned and cultivated by microorganisms that started the fermentation process. From this fermentation process, alcohol was produced from the sugar in the soup of grains, resulting in a liquid close to the current beer consumed throughout the world.

For Beltramelli (2014), beer originated in the region of Mesopotamia, now Iraq, and it was produced by a woman who sought to produce bread, but she performed the process of drying grains, made a primitive soup and then abandoned it at random, causing the fermentation. After all this procedure, a primitive liquid was created from the current beer that was consumed to feed the whole family.

In the middle age, according to Morado (2009), the beer produced was homemade and it was the women’s responsibility, who produced it for the

family consumption. In addition to the Sumerians, the Germanic civilization is also prominent in brewing, as they pioneered the introduction of hops as an ingredient in the recipe, giving it the basic characteristic of contemporary beer (VENTURINE FILHO; CEREDA, 2001).

Subsequently, the German Beer Purity Law indicated that beer must be composed of water, malt and hops, respecting the traditional Germanic recipe. On the other hand, the dissemination of the product to the societies, according to Tschop (2001), was carried out by the Egyptians who produced the “Beer of Notables” and the “Beer of Thebes”, making possible the arrival of the liquid in Europe and also to other people.

Santos (2003) indicated that beer arrived in Brazil with the Dutch, around the 17th century, but with the expulsion of the same from the colony, it was only later to return with the arrival of the Royal Family, the opening of the Brazilian Ports to Friend Nations, and also because it was the favorite drink of Dom João VI, then King of Portugal.

Santos (2014) demonstrated that it was only in 1836 that the first brewery was registered in the country. The current Brazilian definition of beer was established by Decree no. 2.314, of September 4th, 1997, Art. 64 (BRASIL, 1997): “Beer is the beverage obtained by the alcoholic fermentation of brewer’s wort from barley malt and potable water, by the action of yeast, with the addition of hops”. However, part of the malt can be replaced by adjuvants such as rice, wheat, rye, corn, oats and sorghum.

Cruz (2007) pointed out the

empiricism in the beer brewing that only from the nineteenth century began to be permeated by techniques, processes and recipes in order to achieve a satisfying, durable and quality product. After the consolidation of the beer industrialization, induced by new fermentation techniques, the liquid was consolidated as with great appreciation and importance for modern society.

## 2.2 The Brewery Market and the Micro-Breweries

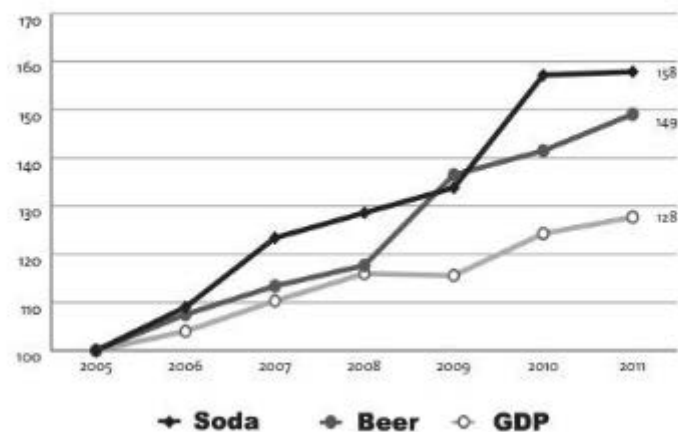
Considering the Brazilian economic growth in the last years, which allowed the consumers to rise to higher classes and also, the country's greater openness to the diversity of imports, caused by the favorable exchange rate; there was a higher demand for the craft drink in the

search for different ingredients, flavors, traditions, labels and sophistication.

In order to justify this point of view, it is presented two scientific looks. The first, coming from the economic sector and the other from sociology. Economic data show a straight connection between the population income's rise and the beer demand. Cervieri Júnior et al. (2014) and Freitas (2015) affirm the population income's rise is the main booster of the sales in the beverage sector.

Cirera and Masset (2010) say there is a direct relationship between the reduction of income inequality and the increase in the consumption of food products with higher added value. The following graph (Figure 01) shows the relationship between GDP's growth and sales growth of beers and soft drinks in Brazil between 2005 and 2011.

**Figure 01** - Accumulated GDP growth and sales of beers and soft drinks (Brasil – From 2005 to 2011).



Source: Cervieri Júnior et al. (2014, p. 119).

The data presented by the graph are corroborated by the idea that as a domestic demand can respond elastically

to the increase of income, which are added the redistributive movements that, irrespective of variations in total

income, have generated middle layers of consumption of non-essential through the migration of families from consumption classes E and D to classes C and B (CERVIERI JÚNIOR, et al., 2014, p.119).

In view of the presented, it was verified how the socioeconomic transformations occurred in Brazil, during the years of 2001 to 2011, had become the engines of the development of the beverage sector which has as its consumers the so-called “new middle class”. This fact also occurred in the early 1990s with the implementation of the Real Plan that made room for the enlargement of the purchasing grasp of the population (FERRARI, 2008).

Through sociology, we have seen that: the phenomenon of increased production and the consumption of special beers runs through Bourdieu’s (2007) theory that affirms the consumption of a food can be linked to a process of social distinction. The same author reminds us that the so-called “elite” uses the expenses on food, culture and presentation as a form of differentiation (BOURDIEU, 2007). In this way, the consumption of luxury goods is shown as representations of social distinction between individuals, since in them social differences are expressed in a clear and objective way (BOURDIEU, 2007).

In this context of a demanding consumer market, it appears the term of special beers. These beers may contain craft or industrial methods, but the product’s focus lies in its quality and its inherent characteristics as ingredients, color, flavors, bottle shape, label,

packaging and others.

The brewing market in Brazil is very concentrated. For Santos (2014), it is distributed among only four major companies in the sector: ABInbev (Ambev), Schincariol Group (Brasil Kirin), Petrópolis and Heineken.

Santos (2014), however, pointed out that there are new products being commercialized in the country, with different styles, and that was confirmed by ABRABE (Brazilian Beverage Association) that indicated a growth of 158% in the records of establishments focused on beer and craft brewing between the years 2008 and 2013.

Part of the diversification of the beer portfolio offered by the Brazilian market can be explained by Santos et al (2011) who pointed out that the favorite beer sensory profile in Brazil has been a lighter and more refreshing, less full-bodied and less bitter drink. Currently, other researches that seek to change the sensorial profile of the new consumer of special beers are in progress.

A survey of ABRABE (2012) illustrated that Brazil produces 13.7 billion liters of the beer, only behind China and the United States of America. However, the brewing of craft beers still remains small, when compared to the industrialized ones.

According to Morado (2009), the creation of micro-breweries in Brazil emerged in the second half of the 1980s, with dozens of small enterprises that settled mainly in the South and Southeast regions. The modern micro-breweries were based on a movement called Homebrewers or Homemade Craft

Brewers, which began in Brazil in the early 2000s as pointed out by Ferreira et al. (2011).

Homemade brewers embraced the craft brewing, which resembles a food preparation by a cook. This movement is linked to a worldwide wave of Slow food that seeks greater quality and characterization of food products, and to have in their production the reduction of the standardization process, artificial food and drink. (FERREIRA et al., 2011).

There are about 200 micro-breweries in the country, concentrated in the South and Southeast regions accounting for less than 0.2% of the total liters produced in the country. However, the appreciation for the craft beer and for being a homebrewer shows an expanding market in the country (ABRABE, 2012).

The entrepreneurs of this branch have a great challenge, to provide to their consumers a remarkable product that stands out in this growing market, with a great volume of varied products and with an increasing competition.

Naturally, the need for product innovation as an alternative to survival or as a form of consolidation in this broadly competitive market emerges from this scenario. From this context, it has appeared a need for a study on the mapping of practices and processes that aid the innovation in the craft brewing by these micro-breweries.

### **2.3 Innovation Management**

It is necessary to define neatly the term innovation to understand it in the context, where the process of making an

opportunity into a new idea and placing it in the market is the core of the discussion (TIDD; BESSANT; PAVITT, 2008).

Baregheh, Rowley and Sambrook (2009) proposed a diagrammatic definition for innovation, which is the multi-stage process whereby organizations transform ideas into new product, services or improved processes to advance, compete and differentiate themselves successfully in their market. The innovation typology implicit in the related diagrammatic definition provides means of classifying the innovations. The innovations can be classified as product, service, process or technique. And the resources or means used to drive and support the innovation can be identified in relation to the balance of technology, ideas, inventions, creativity and the market.

According to Tidd, Bessant and Pavitt (2008), the innovation process occurs in all companies. These are characterized by searching, that is based on analyzing the scenario to identify threats and opportunities for change; selecting, which consist on deciding among the signs presented in the scenario, the one that will respond; and finally, implementing, that is the translation of the new idea into something new and launch it to the market. It should be noted that for the innovation implementation phase, the following steps are essential: to obtain knowledge for innovation; the execution of the project under unpredictable conditions; the innovation launch in the market and its initial management, the sustainability of adoption and the use of innovation in the long term.

The Knowledge Managerial refers to the set of processes that guide the creation, dissemination and use of knowledge to fully achieve the organization's objectives. Thus, actions of capture, storage and allocation of organizational knowledge are required. It is a process characterized by the generation, coding, guarding, stocking, transfer, transformation, application, incorporation and protection of knowledge (SILVA FILHO, 2013).

There are a number of unknown and unused knowledge, know-how and best practices. In this way, companies do not exploit the potentiality of the knowledge they possess internally, and they do not know the existence of that knowledge and the sources from which they originate. As a result, they waste resources, stop innovating and lose competitiveness (O'DELL e GRAYSON, 1998).

O'Connor, et al. (2008) discuss ways to make the innovation a sustainable activity. The revolutionary innovation management requires the capabilities of several key people in various dimensions. These people must belong to internal and external networks, and place knowledge that reduces the uncertainties involved in the process. These uncertainties correlate with risks, which are linked to innovation efforts. Thus, the innovation management system is a system that aims to reduce these uncertainties and deals with those risks in the projects. A successful innovation function requires internal and external interfaces, as well as funding sources, technical sources, and sources of market access. Such mechanisms must work in parallel. The authors also emphasize that reality is often

different from the ideal in the context of innovation management. Innovation management systems are impaired if not aligned with other systems. It should be noted that the actions discussed by O'Connor, et al. (2008) are proposed for the large complex companies, not applying to the micro-breweries.

It should be noted that innovative small businesses have the following characteristics: similar objectives; organizational forces; technological weaknesses; differentiated sectors (TIDD; BESSANT; PAVITT, 2008).

Oliveira et al. (2016) emphasize that innovation must permeate the whole organization and be incorporated in its various organizational dimensions. Thus, another important approach is how to measure the results of this process to later manage it. Adams, Bessant and Phelps (2006) emphasize that while product innovation is undoubtedly important, it is only one dimension of an organization's innovation agenda. Process and organizational innovations are also recognized as critical to competitiveness, but these perspectives are inadequately represented in terms of measurement, showing gaps in these measurements, as well as lack of tacit knowledge measurements. Appropriate metrics are needed as well as portfolios decisions (O'CONNOR, et al., 2008).

The creation of wealth is subjected to internal technological, organizational and administrative processes within the organization in question (TEECE, PISANO and SHUEN, 1997). In this context, Teece (1996) emphasizes the importance of understanding the institutional



environment in which firms are placed. Some characteristics are fundamental to this understanding and influence the rate and direction of innovations, such as sources of financing, human resources, organizational skills, culture and values, organizational structure and incentives for innovation. In addition, there is the pressure of the environment where the organization in question is placed, as well as consumers, competitors, government, external sources of innovations, market structure, among others.

## 2.4 Innovations in the Brewery Market

In his study “The Theory of Economic Development”, Joseph Schumpeter (1978) elaborated the concept of creative destruction. For Schumpeter (1978, p. 65)

It is, however, the producer who, as a rule, initiates economic change, and consumers, if necessary, are ‘educated’ by them; they are, as it were, taught to desire new things, or things that differ in some way from those they have a habit of consuming.

From this passage, it is verified that, through the creative destruction, new products are elaborated, modifying and inducing the consumption. However, this theory failed to account for the demands of the innovations that appeared with the advent of capitalism and industrial revolutions emerged throughout the twentieth century. Therefore, the Schumpeter’s idea that innovation starts from the sphere of production and changes the economy in the direction of producer-consumer, began to be elaborated in greater depth from the

many variables that emerged throughout the 20th and 21st centuries.

These new approaches to innovation were undertaken by neo-Schumpeterian authors such as Freeman (2008) who addressed different ways of innovation, classifying them as follows: incremental innovations and radical innovations. The first approach is the elementary level of innovation and is not usually derived from Research and Development (R&D) investments.

The second nomenclature, radical innovation, transcends elemental innovation and can initiate an unprecedented technological trajectory. This type of innovation is the result of R&D. Giovanni Dosi (2006) addressed the mechanisms that induce innovation. The technological determinants in the micro-brewery sector are so much boosted by the technologies of new equipment that have emerged in the last decades that facilitate and cheap the costs in the beer brewing, as through the market is driven by what micro-breweries called the brewing culture according to Bizinelli et al. (2013).

Consequently, as Léa Velho (2010) points out, the new brewing market that seeks special beers breeds its innovations from the growing new consumers’ demand, which drive entrepreneurs to translate into new products and services. Also, it is used the innovative equipment that facilitate scalability and simplify the beer brewing process. The growth wave of the Brazilian brewing movement is due to a technological gap between Brazil (peripheral country) and the United States (central country). Every homebrewer

movement is mirrored in the market growth that occurred in the United States in the late 1990s when technologies for homebrewers equipment became popular. The growth of classes with greater purchasing power and the awareness of the beer culture through tourist trips foster the craft brewing that by the added value in the quality of the final product stimulates the nascent of an incipient and increasing consumer market that search for innovations in this product, usually known as traditional.

Micro-breweries use this window of opportunity and through international benchmarking deploy cumulative for the appropriation of the brewing technologies innovations of the economically and traditional central producing countries. As the revolutions between the paradigms and the trajectories will affect the firms of different countries, as well as their work and performance. Brewers entrepreneurs, together with the various social actors, change their production practices and are responsible for taking advantage of the new market potential that begins to emerge.

According to Figueiredo (2005), technological capabilities are not built, accumulated, sustained at the same time and at the same speed, for the different technological functions. It should be noted that routine and innovative capabilities accumulate in parallel within the company.

At the same time, they influence and are influenced by the techno-economic paradigm that has been developing and they become responsible for its application, since the new paradigm tends to become a prevailing habit among the

different agents of the productive sector (ALBUQUERQUE, 1996; PÉREZ, 2004; FERREIRA et. al. 2011).

## 2.5 Trends in the Brewery Market

In the European brewing market, the brewing production mixes the tradition of local and regional production. Studies such as Cruz, Beck, and Wazel (2017) demonstrate the traditional strength of these markets and how the brewing industry relies on community traditions and relies on strong links with community dwellers, as these factors are difficult to replicate in the new breweries that are trying to reach the market. These empirical analyzes confirm that geographical communities with a strong cultural appeal have an unfavorable effect on the entry of new organizations when historical breweries are deeply connected to local communities within a traditionally market context.

In recent studies Pechlaner, Raich and Fischer 2018 demonstrate in how Bavaria represents a place where other breweries are related to tourism, demonstrating great development in both sectors. The cooperative relations between tourism organizations and the brewing industry were perceived as being a cultural asset in Bavaria, which presents an important additional value to the guests, the beer tourism. Beer and brewing tradition can be used as subject matter for products oriented towards the regional development competence in the destination Bavaria. There are a large number of services that constitute relevant interfaces between tourism and the brewing industry. These services

are integrated into the development of tourism products and can contribute as points to increase the competitiveness of the destination. Bavarian beer becomes a part of the adventure of those who are traveling to Bavaria.

In the clustering studies by Beck et al (2009), they reinforce the cultural point of view of Bavaria's breweries and how their production demonstrates a strong example in relation to the consumption of traditional products that feel a rejection impact with the new brewing culture, which is not limited to traditional issues. Therefore, the beer industry is a strong actor in local development with bars, museums and in the valorization and its characterization, as local tradition strongly mark the productive arrangement in the sector.

In order to show innovating new breweries in Germany, a qualitative research was conducted in 18 different small and medium sized enterprises (SMEs) in Germany by Krauset al. (2018), demonstrating that german micro-breweries are engaged in competitive strategies in many different ways and foreign to the traditional market. But specifically in a different way through cooperation and collaboration strategies between small breweries which seek mutual benefit, confidence, commitment and friendliness to turn competing breweries into partners.

This competition partnership develops collaboration in the development of product innovation (beer), marketing and market strategies, and mutual growth through commercial aid as a strategic form of competition against the broader industrial brewing

market.

Murray and O'neil (2011) already showed in the American market that craft beer and microbrewery success were boosted by the Homebrew movement and that several additional services propelled the craft market, since this study realized that the demographic profile of consumers was promising presenting adequate age, high income and educational levels sufficient to boost the continuous growth of this sector, which is eager for innovations.

In a recent study in Brazil, Carvalho et al (2018) determines the demographic characteristics and habits of craft beer among consumers, as well as identify the motivational factors for its consumption. The results of the research corroborated with Murray and O'neil's (2011) notes that in the Brazilian market, there is a growing market segment with different habits and behaviors compared to traditional beer consumers through demographic statistics. It was found that these consumers are an attractive part of the beer market in terms of age, schooling and, more important, income, factors that indicate the probability of continued growth in the sector in Brazil.

Despite the economic crisis that began in 2015, Brazil is facing austerity measures with a forecast of 3.4% contraction and a fall of 0.5% in the Gross Domestic Product (GDP), the craft brewer market is growing while the traditional brewer market is shrinking (EBC, 2016, G1, 2016, O GLOBO, 2016).

Before the crisis, the scenario pointed to a relevant optimism in the growth of the craft brewer sector, with the brewers' diversification and in the construction of

a production and supply chain around the growing market. This optimism suggested the creation of points of sale, delivery, supply chain, raw materials importers, post-sales and high rate of employability. Even with the advent of the crisis, it can still see the reflection of this optimism by the multiplicity of factories, brands, labels, points of sale, tourist circuits and franchises that have multiplied in the sector (SEBRAE, 2015, O GLOBO, 2016).

### 3. METHODOLOGY

#### 3.1 Documental and Bibliographic Survey

The methodology elaborated for the construction of this article was written from two fronts: documental and bibliographic survey for the theoretical revision and for the Wäls MADLAB case study. The documental survey is important because the research needs information that contributes to the researcher until the desired information is collected.

Documentary research differs from bibliographical research because the nature of the source is different (GIL, 1999, p. 66). In this case, one does not search (Academic theses, scientific articles, dissertations), but the research is carried out on various materials such as official documents, websites, recordings, films, photographs, reports and others.

Pizzani (2012) understands that the documental and bibliographic survey is the revision of the main theories that give meaning to the scientific work, which can be realized in books, periodicals, newspaper article, internet sites, among other sources.

Galvao (2010, p. 01) shows the importance of this type of methodology, justifying that when carrying out a bibliographic survey:

[...] is to leverage intellectually with the collective knowledge to go further. It is to provide better cognitive conditions in order to: avoid duplication of research, or when it is of interest, reuse and replicate researches in different scales and contexts; to observe possible flaws in the performed studies; to know the resources needed to build a study with specific characteristics; to develop studies that cover gaps in the literature bringing real contribution to the knowledge area; to propose themes, problems, hypotheses and innovative research methodologies; to optimize resources available in favor of the society, the scientific field, the institutions and the governments that subsidize the science.

For Gil (1999, p. 65) the bibliographic research is carried out from “already prepared material, consisting mainly of books and scientific articles”. Generally, in all studies there is a need for bibliographic research. In others, it is the only methodology, as in this case.

After the bibliographical research, a literature review was made and as per Moreira (2004, p. 23).

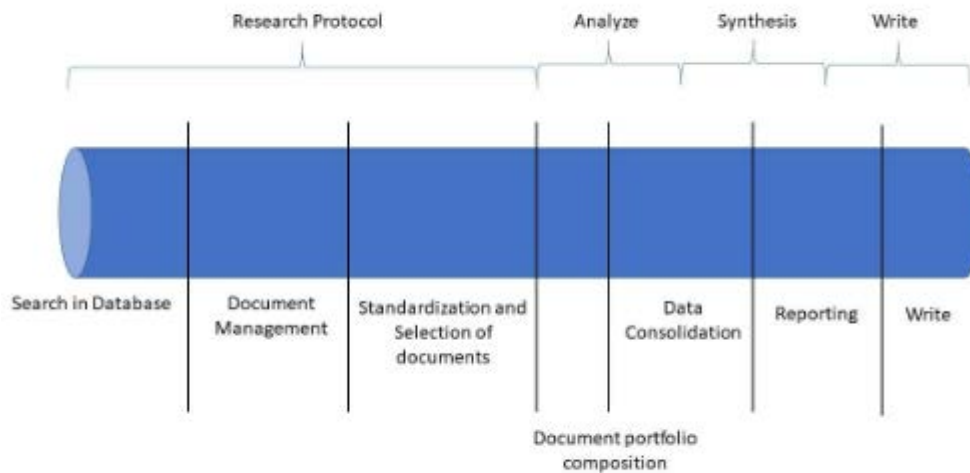
[...] serve to positionate the reader of the work and the researcher himself on the advances, setbacks or grey areas. Provides information to contextualize the extension and significance of the problem being handled.

The researches were carried out in two databases: Scielo and Bank of Thesis

and Dissertations of CAPES and Universities and Google Academic.

It was used the Systematic Search Flow methodology by Ferenhof and Fernandes

**Figure 02 - The Systematic Search Flow Methodology**



Source: adapted from Ferenhof, Fernandes (2016).

Initially, a search strategy was developed from the key words: innovation, microbreweries and brewery market in the cited databases, from 2007 to 2018, and with the following document types: articles, theses, dissertations and reviews.

The articles were separated using the Endnote software from the searched keywords.

The following quantities were found:

Innovation: 5.151 (Scielo), Capes (4.052), Google Scholar (59,200);

Micro-breweries: 2 (Scielo), Capes (17), Google Scholar (174);

Brewery market: 4 (Scielo), Capes (6), Google Scholar (261).

It was verified from the analysis of the scientific studies found, that there is a deficiency in scientific research made from the analysis of innovations in micro-breweries, management of

brewing innovation and innovations in beer production. The major part of the papers deals with these topics with the knowledge of Food Engineering or Chemical Engineering.

It should be said that scientific research on microbrewery and innovation is still shallow in the applied social sciences, especially in the fields of economics and administration. This fact also justifies the elaboration of this work that has the ambition of contributing to the dissemination of the subject in the field of knowledge of the applied social sciences. It is emphasized that the data, found in the works already mentioned, were synthesized in order to assist the researchers in the writing of the work.

## 4. RESULTS AND DISCUSSION

### 4.1 The Wäls MADLAB case study

Wäls was born on November 29th, 1999. Pedras Carneiro family, specifically the brothers Tiago and José Felipe, from Belo Horizonte - MG, run the company. It is characterized by being a creative and innovative company, having its products inspired by the traditional schools of Belgian, American and Czech breweries. After much research, the special beers' line of Wäls was launched in 2008, being the pioneer brand in the technique of re-fermented beers and new production processes, such as the champenoise method (second in-bottle fermentation) for beers.

In this innovative context, Wäls has established partnerships and received several awards. It is pointed out the title of the best brewery in South America in 2012, and in the same year, it was performed the first international partnership of a national microbrewery with an international one, with Garret Oliver, the editor-in-chief of the book "The Oxford Companion to Beer", of the University of Oxford and brewer of the Brooklyn Brewery of New York. They created the world's first sugar-cane beer, the Caipira Wäls Saison. In addition, they achieved the title of "beer of the year" with the Wäls Bohemia Pilsen in 2013, and the World Beer Cup award with Wäls Dubbel and Wäls Quadrupel, which is the largest international beer competition located in Denver (USA) (COSTA, 2017).

It should be noted that in 2014, Wäls expanded its work to the United States, Canada and France. It opened a brewery in San Diego, California, to strengthen its brand in the United States. In the same year, Wäls developed 14 special beer labels with a turnover of R\$ 9 million.

In the year of 2015, Wäls made an indirect merger with Ambev, through the Bohemia Brewery. Ambev had operations in 16 countries; 52 thousand employees, 35 thousand only in Brazil; 100 Brazilian executives working in the world; 32 factories; 100 direct distribution centers; and 30 brands of beverages, with its products distributed to two million points of sale (AMBEV, 2017).

The mentioned indirect fusion is an important factor to be considered for the maintenance of the micro-brewery of Minas Gerais. At the same time, Wäls gained greater access to production technology, expanded its distribution network, among other advantages. On the other hand, Ambev also appropriates an important market share, the craft beers.

Therefore, Wäls included in its portfolio the MADLAB, launching in April 2016, the StrawberrySour beer, an American Wheat Beer. It begins a production of fruits beers, among other different types of beers and original labels. In addition, the Wäls MADLAB has innovated by offering a service of beers' signature club, which monthly provides customers with a set of beers created exclusively for them. In addition, it offers a visiting and experimentation of several beers produced at Wäls MADLAB (DESTINO CERVEJEIRO, 2017).

The launch of Wäls MADLAB innovated in the beer world since it prized for the personalization and exclusivity of beer labels. The purpose is to connect the consumer to the brewing universe by creating the exclusive signature club, providing a unique tasting of unique beers and validating the creative process

of new labels through a direct connection with the consumer.

In the Wäls MADLAB case study, innovation strategies can be seen from the construction of technological capacities and the development of new products, through sectors and strategic initiatives in the innovation function. According to O'Connor et al. (2008) the innovation capacity should be considered as a corporate priority, be visible and audible in terms of support, and provide corporate resources to do so. It also stresses that it is not only necessary to find ways to maintain the constancy of the innovation function itself, but also to learn how to feed it according to the needs of the industry. In this way, it has made Wäls in its trajectory of partnerships, mergers and with the innovative strategy of Wäls MADLAB.

The Evita label launched in 2018 which is considered a mysterious charmat was probably influenced by dozens of sparkling labels released by Wäls MADLAB. The Verano Pale beer that has been repaginated, could had gained some improvements in its recipe due to the considerations mentions Sauvín Blanc (Ale) Wäls MADLAB, Everest Salt Caramel (Ale) Wäls MADLAB and Doble Doble (Ale) MADLAB.

Wäls Session Haze Ipa Beer probably considered HopRocket (IPA) Wäls MADLAB and Crazy Lambs (NEIPA) Wäls MADLAB ratings. From reformulations to new recipes, a large database with the spontaneous collaboration of the appropriate niche of drinkers and lovers of special beers. Various styles, condiments, fruits and extras are being tested and evaluated with the perception

of the subscribing members.

## 5. CONSIDERATIONS AND CONCLUSIONS

After analysis of the theoretical references, it was verified that the Brazilian brewing sector is in expansion and development.

It was born a growing market derived from the expansion and spread of the called "brewing culture". This last one was responsible for the multiplication of small brewers that had glimpsed economic potential, from the appropriation and the technological cumulative, that allow innovations with added value in the generation of new products and services.

These innovations enable the demand growth for a new consumers' market that stimulate and encourage the technological development of the sector. These consumers seek constant innovations that meet their needs and broaden their thirst for innovations that make micro-brewers seek to develop or acquire new technologies to meet the market expectations.

In this context, it is possible to analyze the Wäls MADLAB case study. It was found that Wäls' indirect merger with Ambev allowed a greater network of markets and expansion of its production processes, and consequently innovation management, expanding its portfolio of products, processes and services innovations.

The objective of this paper was to discuss the existence of some strategy of innovation management in national breweries.

Thus, it was observed that MADLAB

is an innovation management initiative in the brewing sector that requires the analysis of the potentialities opened by a technological appropriation and the dissemination of the new techno-economic paradigm. Observing a strategy that provides the implementation of portfolio innovations in the sector, during a period of economic fragility mixed with an enthusiasm for the sector growth.

The MADLAB strategy was presented as a strategy focused on the validation and spontaneous prospecting of the sensory profile of a niche specialized in the consumption of craft and special beers. Map this sensory profile in an organic strategy, where the users and subscribers of the experimental beer delivery service collaborate with their hunches, perceptions, evaluations that facilitate the development of new products through the mapped data.

This strategy is presented as a selector or filter that facilitates consumer profile access to commercial special beers and the inversion that can get the target audience to finance the development of new products.

Given the technological accumulation and new production practices in the brewing market, the craft breweries, at a micro level, play a decisive role and are directly responsible for the application of new practices in the brewing process. In addition to being responsible for the innovations implemented, in order to make feasible the use of windows of opportunity. Due to all these factors, it is possible to observe that although the special beers sector is recent, it begins to develop and to worry about the innovation management as a market strategy.



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