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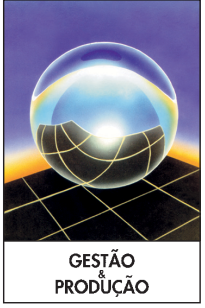

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Strategic management in the meat processing industry: an application of SWOT Analysis in storage and shipping stage

Gestão estratégica em frigoríficos: aplicação da análise SWOT na etapa de armazenagem e expedição

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Abstract: Companies need to perform systematic diagnoses to prospect the market positioning strategies and remain competitive in the current industrial scenario. Each of the company's sectors must be analyzed because they all lead to business success. Based on the understanding that diagnosis is essential for maintaining the competitiveness of a company, this document aims to propose improvements in processes and activities of storage and shipping stage of a meat processing company. A SWOT analysis is used to classify strengths, weaknesses, opportunities, and threats and to correlate these factors. The information for the diagnosis was collected initially on literature and then through on-site visits and interviews with employees from the meat processing company. The results indicated that the storage and shipping stage of the analyzed company is positioned on the second matrix quadrant, called Maintenance. Based on the achieved results, a correlational study between strengths and opportunities has been carried out, converting threats into opportunities, using strengths to eliminate weaknesses, and also suggestions of strategies to the storage and shipping stage are presented. Among the proposals, the training of workers, activity automation and improvement of product packaging can be highlighted.

Keywords: Meat processing industry; Storage and shipping stage; SWOT analysis; Diagnosis tools.

Resumo: *Para permanecerem competitivas no cenário industrial atual, as empresas precisam realizar diagnósticos de forma sistemática a fim de prospectar estratégias de posicionamento no mercado. Além de análises globais, é necessário examinar cada uma das etapas do processo produtivo da empresa, pois todas concorrem para o sucesso do negócio, em maior ou menor grau. Considerando o diagnóstico essencial para a manutenção de uma empresa em um patamar competitivo, este trabalho tem o objetivo de propor soluções para a etapa de armazenagem e expedição de um frigorífico, com vistas ao aperfeiçoamento dos processos e atividades internas. Para isso, utilizou-se a ferramenta Análise SWOT, a qual permite organizar por ordem de relevância forças, fraquezas, oportunidades e ameaças à empresa ou à etapa de armazenagem e expedição, e correlacionar esses fatores. Para subsidiar o diagnóstico, foram utilizadas informações disponíveis na literatura e realizadas visitas in loco e entrevistas com trabalhadores do frigorífico. A Análise SWOT indicou que a etapa em estudo se encontra no segundo quadrante da matriz, denominado Manutenção. Com base no resultado da análise, fez-se um estudo relacionando as forças e as oportunidades destacadas, seguido da conversão das ameaças em oportunidades e da utilização das forças para eliminar as fraquezas, além de sugestões de estratégias para a etapa de armazenagem e expedição. Dentre as propostas, destacam-se, por exemplo, capacitação dos trabalhadores, automatização de atividades e melhoria das embalagens dos produtos.*

Palavras-chave: *Frigoríficos; Etapa de armazenagem e expedição; Análise SWOT; Ferramentas de diagnóstico.*

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1 Introduction

In Brazil, the meat packing industries are very important, especially for the economic scenario. According to the Central Business Register, there are approximately 5 million of such companies in the country, among them, according to the CNAE (Economic Activities National Classification), the meat slaughtering and processing represent about four thousand companies, which have near 505.581 employees (IBGE, 2016).

However, despite the satisfactory economical ratings, these organizations face several challenging issues, especially regarding market competition. To Porter (1989), the competition is the key to an organization's success or failure, leading to activity adjustments to improve performance. According to the author, a solid and competitive strategy is needed to achieve a prosper market share regarding the competition. Barney (1991) explains that a firm is said to have a competitive advantage when it is implementing a value creating strategy not simultaneously being implemented by any current or potential competitors.

Because of this matters, organizations search for suitable methods that provide competitive improvement. Frozen meat producers and processing industries, need to generate and sustain competitive advantages to remain alive in the market. Its main challenges are: to distinguish products, to reduce costs, formulate innovative market strategies and discover new business models (Raimundo & Batalha, 2015).

To Porter (1989), competitive advantages rise mainly from the value that an organization creates to its purchasers, which surpasses the organization's producing costs. Brito & Brito (2012) affirm that besides the impact in the profitability, the competitive advantage can affect market share and operational performance of the company as well, in various moments and situations. To Tavares (2000), the competitive analysis of the internal and external environments will determine the most appropriate strategy for the organization at a given moment in order to provide a competitive advantage.

According to Porter (1989), there are two kinds of aspects for the competitive advantage: cost and differentiation. The first aspect highlights that continuous improvements to the company's processes are necessary to achieve productive efficiency. The differentiation aspect emphasizes that the product or service has attributes that differentiate it, and that is valued by the purchasers, despite more expensive prices. To Frontini et al. (2008), competitive advantage can also be achieved through an approach in which the organization chooses to attend a particular slice of the market, focusing on a specific segment.

Barney (1991) stands out that a company's resources can only generate sustained competitive advantage when they are: valuable, exploit opportunities and/or neutralize threats in the firm's environment; and have several other characteristics as rareness, inimitability, non-substitutability.

Peteraf (1993) defines as pillars of competitive advantage the heterogeneity, the competitive limits, based both on real results on forecast, and imperfect mobility. The goals of this model are to point out the importance of each one of these conditions and explain the specific role that each one performs in creation income creation and maintenance.

Organizations are able to improve profitability by means of a management system, developing ways to direct performance of activities to effectively aggregate value to it (Michelon et al., 2006). Thus, SWOT Analysis stands out as an important supporting tool for the decision-making process, which is used to systematically analyze firm's internal and external environments (Gao & Peng, 2011). Lepak et al. (2007) affirm that a better understanding of the concept of value creation may help organizations individuals and society to advance and prosper in a competitive world.

Whereas the importance of the meat processing field to the Brazilian economy and the companies' need of a strategic position achievement to remain competitive, this work has identified as problematic the improvement of the internal processes and activities in meat packing companies. It is assumed that the diagnosis stage is fundamental for a firm's strengths and weaknesses identification, and, therefore to the proposed solution-regarding the productive process. Therefore, through a diagnosis realized by SWOT Analysis, this work aims to propose solutions to meat processing industries storage and shipping, emphasizing internal activities and processes improvement.

2 Theoretical references

2.1 Characterization of the meat processing field

According to the NR36 regulatory standard, a meat processing/slaughter company is an establishment with complete facilities and adequate equipment for the slaughter, handling, elaboration, preparation and conservation of butchery species in various forms, with a complete, rational and perfect use of non-edible by-products; has industrial cold installations (Brasil, 2013).

The organization of work in companies of the meat processing industry, even today, does not consider the psycho-physiological characteristics of workers, nor techniques that seek to reduce the inherent risks

of work. One of the most aggravating factors in this work process is the pace of work (Sarda et al., 2009).

The reasons why these workers sicken and are at risk of several illnesses are: intense pace of work, monotonous activities, unhealthy environment, pressure for production, and accidents with working tools and instruments. The above listed factors contribute, more and more, to the illness of this working class (Reis, 2012; Marchi, 2012; Evangelista, 2011; Takeda, 2010).

Workers performance is influenced by the climate, particularly temperature and environment humidity. The physical environment of the fridges is cold and noisy, which demands more muscular effort from the workers. Cooling of peripheral tissues, especially of hands and feet, reduces strength and neuromuscular control, increasing the probability of mistakes and accidents (Sundstrup et al., 2013; Iida, 2005). One way to decrease or even eliminate the high rates of illness and work accidents is through an intervention. It is important to reduce physical demands and working hours, adopting a work rotation scheme, reducing the repetitive workload and, consequently, reducing the risk of musculoskeletal injuries (Vogel et al., 2013; Sundstrup et al., 2013).

On the other hand, strategic planning can also help in this matter, because it is mandatory to structure the way organizations operate. Through it, goals and objectives are defined according to the situation a firm is going by. A company, by adopting a strategic management will have the planning inherent to the process (Dutra, 2014). To realize prospections, a company needs to have a full understanding of its current situation, that is, to build diagnosis. One of the tools used to elaborate corporative diagnosis is the SWOT Analysis, which, according to Melo et al. (2010), remains as an important tool, despite being criticized. Al-Araki (2013) affirms that SWOT is currently one of the most commonly used instruments to strategic analysis and other evaluative studies. To Pai et al. (2013), SWOT has been commonly applied in company's strategic planning, market analysis and industry analysis, and is generally viewed as a practical and effective approach.

2.2 SWOT analysis

Dutra (2014) states that due to the SWOT Analysis interdisciplinary characteristic it is possible to use it in several study fields. SWOT Analysis is used to help organizations identify their strategic direction, that is, to know themselves and their environment (Andrade & Amboni, 2010). It is realized through a mapping of the strong and weak points of the internal environment and of the opportunities and threats of the firm's external environment, aiming to achieve goals through strategic planning (Martins et al., 2013; Paliwal, 2006).

Dantas & Melo (2008) explain that the word SWOT is an acronym of Strengths, Weaknesses, Opportunities and Threats, developed by two professors of the Harvard University, Kenneth Andrews and Roland Christensen. The strengths and weaknesses of an environment are established by the company's current situations and are related to internal factors. Strengths represent resources that can improve performance and weaknesses are flaws or defects that can cause a loss of competitive advantage, efficiency or financial resources. Opportunities and threats, related to external factors, represent forethought of the future (Dantas & Melo, 2008; Paliwal, 2006).

SWOT Analysis is used especially to help in the strategy development, and may be applied in several situations, such as integration system analysis, information flow and tasks (Kotler & Keller, 2006). The main benefits of this analysis, according to Ferrell & Hartline (2009, p. 127) are: 1) simplicity, because it does not require extensive training nor technical abilities to its successful utilization, "[…] the analyst needs only a full understanding of the company's nature and of the sector he works at"; 2) lower cost, because besides the lack of training it reduces strategic planning related costs; 3) flexibility, because "[…] the SWOT analysis is able to improve an organization's strategic planning in terms of quality regardless of great marketing information systems"; 4) integration and synthesis of several information, whether of a qualitative and quantitative nature, widely known or newly acquired, from different sources, "SWOT analysis helps to transform information diversity, formerly a weakness into one of the major strengths in the planning process; and 5) collaboration and exchange of information between the managers of different operating areas.

Several works that use SWOT Analysis have been found, oftentimes applied along with other methods, aiming to have a better comprehension of a reality and indentify improvement opportunities, or to develop deepened future works. In Brazil, it is possible to quote works applied to various sectors: Scheidegger et al. (2015), in an university restaurant, Sousa & Silva (2015), in the textile field, Hennig et al. (2012), in *the fitness business*, Souza et al. (2010), in the fast-food area, Bornia et al. (2007), in a software company, e Michelon et al. (2006), in the food and beverage branch.

Abroad, there are also several studies that use SWOT Analysis, such as: Kurttila et al. (2000), applied to Forest certification, Markovska et al. (2009), in the development of sustained energy, Zhang & Chen (2013), in the recycling industry, e Dzonzi-Undi &

Li (2015), in environmental regulation and safety in the coal mining industry. Therefore, SWOT Analysis is a tool that has been applied to various contexts, from services like fitness, until extractive industry. Cruz et al. (2015) affirm that no method is able to meet all the requirements during an analysis, yet this factor depends on the depth of the analysis, on business current situation and on the needs of the decision maker. Queiroz et al. (2012) affirm that from the analysis realized with SWOT an organization is able to clearly realize what must be changed, what measures must be taken and what strategies must be adopted to achieve the company's goals and objectives.

Melo et al. (2010) stand out the difficulties identified by executives of a large Brazilian wholesale group regarding the SWOT Analysis: more difficulties to identify strengths than what is perceived as wrong in the organization; assume that managers always have the knowledge and information that allow them to perceive strengths or weaknesses of the organization; implementation of strategy depends on the power and influence of the involved staff, therefore, it must concentrate on the directors; effects described as weaknesses, however without identification of the causes.

Some researchers have been developing studies to improve the SWOT Analysis tool. Al-Araki (2013) presents two frameworks from SWOT Analysis, which can be used separately or along with the original tool to identify why's and how's. Pai et al. (2013) have developed a SWOT Analysis mechanism based on the ontology used by the eWOM (online shared customer experience about purchase and use of products and services) information structure to reveal strengths, weaknesses, opportunities and threats of a company. Gao & Peng (2011), on the other hand, researched a new quantified SWOT Analysis method based on the multicriteria decision supporting method, to provide a more effective and flexible decision making support, and improve the tools usability.

In this study it is used the approach developed by Dutra (2014), which consists in an adaptation of the SWOT Analysis made from the evaluation of various uses. The detailing of these uses is presented next, in section 3.1. The author has chosen the Dutra (2014) proposition because she has identified the best existing usages and has proposed an adaptation of the analysis, to make it more scientific, effective, and clear.

3 Materials and methods

This research is classified as applied, aiming to elaborate knowledge to a practical usage, directed to specific problems solution. Regarding the problem approach, it is classified as a qualitative research and from the point of view of the objectives it is exploratory. The technical procedures used were: field research, bibliography, survey and participant (Marconi & Lakatos, 2010; Silva & Menezes, 2005).

A diagnosis has been carried out in a meatpacking company's storage and shipping stage, aiming to improve processes and internal activities by means of the SWOT Analysis. This method has been proven as effective by the fact that it helps the organization in its managing processes, and it is presented in section 3.1.

The studied storage and shipping stage, for purposes of analysis, have been organized into ten work stations, as represented in the Figure 1: 1 - Tunnel exit control; 2 - Notation; 3 - Control – import; 4 - Control – export; 5 - Plastic Wrapping; 6 - Palletizing (1); 7 - Palletizing (2); 8 - Pallet Transport; 9 - Loading of products; 10 - Forklift Operator.

The research has been carried out based on four steps, as presented in the Figure 2. Firstly, an analysis of the literature, to explore the analyzed kind of plant, the meatpacking industry, and the SWOT Analysis tool, investigating adjacent concepts and uses in various contexts.

The second step has been carried out by means of visiting the storage and dispatch stage of the meatpacking company studied by this research. With these visits, it was possible to acquire a detailed knowledge: the means of work organization, the work stations, as presented in the Figure 1, among other issues. During these visits, informal interviews were conducted with the workers (Step 3), which, according to Gil (2008), are the least structured way of interview and aim to obtain an overview of the problem to be researched, advised to exploratory research.

The interviews were conducted with the staff of the meatpacking company, including the production manager, the occupational safety engineer, and two occupational safety technicians. In the case of storage and shipping workers, 33 interviews were carried out, of which 21 were warehousemen, 10 were dispatchers and two were in charge of production. The interviews aimed to identify and to know the storage and shipping stage and were carried out from September 2014 to February 2015.

Formerly to the interviews, it was individually explained to the interviewees the purpose of the research and presented the Free and Informed Consent Term (TCLE), signed by the interviewees. The TCLE was submitted to the Ethics Committee in Research with Human Beings of the university and approved through the consubstantiated opinion number 891622.

By means of the on-site visits and the interviews with the workers, the direct data were able to be collected, which were subsidized for the diagnosis with the SWOT Analysis (Step 4), specified in section 3.1.

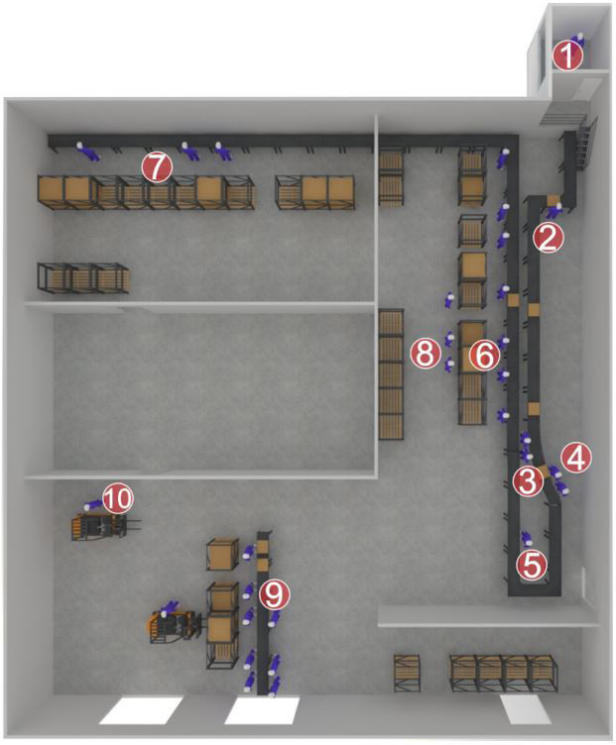

Figure 1. Storage and shipping stage of the studied meatpacking company. Source: Elaborated by the authors.

Figure 2. Steps of the research. Source: Elaborated by the authors.

3.1 SWOT analysis implementation

The SWOT Analysis has been carried out in three steps and had as a basis the model presented by Dutra (2014). The first step consisted of a research about the company and its market, in which several aspects have been considered: internal factors, making a delimitation regarding the storage and shipping stage (strengths and weaknesses); and external factors (opportunities and threats). Besides the perspective obtained by the on-site visits and by the interviews with the workers, further information related to the company has been researched in official vehicles that are provided by the company itself in the internet.

The second step consisted in the classification of the listed items, (strengths, weaknesses, opportunities and threats) organizing them from the most to the least important. To classify the importance of each one of the factors, the model proposed by Ferrell & Hartline (2009) and Dutra (2014) has been used, which suggest to evaluate each one of the items regarding its magnitude and importance. The magnitude refers to the intensity that each one of the factors influence the organization, that means that strengths and opportunities are classified in a 1 to 3 grade, being 1 low magnitude, 2 medium magnitude, and 3 high magnitude. Weaknesses and threats are classified in a -1 to -3 grade, being -1 low magnitude, -2 medium

magnitude, and -3 high magnitude. The importance refers to the current priority that each item has in the organization, being 1 little important and 3 very important. The magnitude and importance values are multiplied for each of the factors listed to obtain their classification in relation to the others.

The third step refers to the construction and validation of the SWOT Matrix, in which a correlation of the presented factors is made, that is, strengths and weaknesses are confronted by opportunities and threats. Dutra (2014) orientates to organize the elements as presented in the Figure 3, locating the strengths, weaknesses, opportunities and threats with higher grade in the center of the matrix.

By putting the elements in the SWOT Matrix, a multiplication is made with the elements that cross themselves in the matrix. For example, if the first Opportunity has a value of 9, and the first strength has a value of 6, the crossing of these two elements will result in 54, value that will be registered at their meeting point.

Next, summing all the values of each quadrant (Strengths × Opportunities; Strengths × Threats; Weaknesses × Opportunities; and Weaknesses × Threats) it is possible to notice which quadrant is the most representative to the analysis. This quadrant represents the positioning of the analyzed object and the conduct that should be taken based on the diagnosis, as observed in the Figure 4.

Lastly, based on the built Matrix, it is possible to relate the items of each quadrant according to Dutra (2014) (Figure 5). The goal of this activity is to deeply analyze strengths, weaknesses, opportunities and threats, establishing relations between them, to associate strengths and opportunities, convert threats into opportunities, and use the strengths to eliminate the identified weaknesses.

4 Results and discussion

Based on the perspective obtained by the on-site visits and interviews made with the workers, it is possible to highlight the internal and external factors that influence the storage and shipping stage of the meat processing company. To each one of these factors, magnitude and importance values have been assigned, as suggested by Ferrell & Hartline (2009) and Dutra (2014). Table 1 presents the result of these two first steps of the analysis. It has been opted to identify the raised elements in the following way: Strengths (St); Weaknesses (We); Opportunities (Op); e Threats (Th).

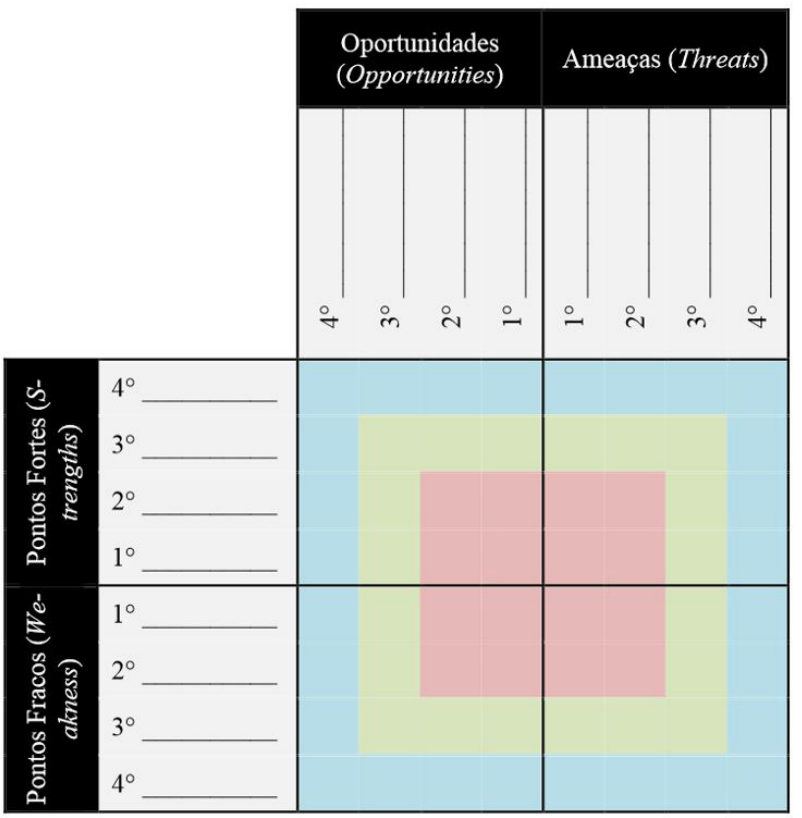

Figure 3. Location of the elements in the SWOT Matrix. Source: Dutra (2014).

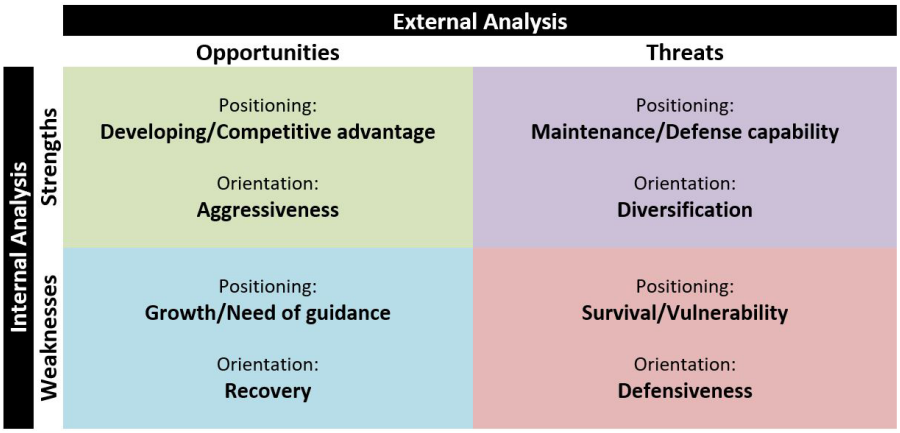

Figure 4. Scenarios and strategies identified from SWOT Matrix. Source: Adapted from Dutra (2014).

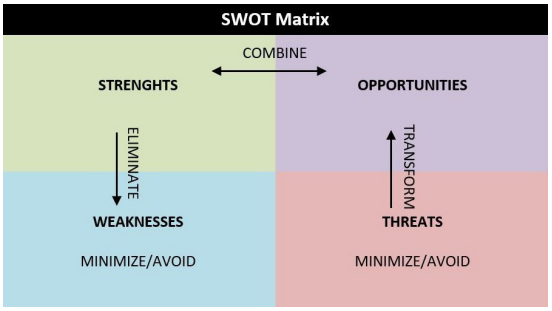

Figure 5. SWOT Matrix and its quadrants. Source: Dutra (2014).

As may be observed in Table 1, the strengths that stand out in the analyzed step are the adequacy to the rules and legislations and the rigid control of quality. The most influential weakness is the workers risky physical surroundings. As for the external influences, the absence of competition can be highlighted as a great Opportunity and the high rate of turnover of employees and lack of workforce as Threats.

The adequacy to rules and legislations is mainly due to the existence, since 2013, of a specific Regulating Standard regarding the meat processing industry, the NR-36. This strength along with the main Opportunity of this step, the lack of competition, can provide the company the capability of overcome weaknesses and threats.

The main weakness of the stage of storage and shipping of the studied company corroborates with what has been presented in the bibliography: the physical surroundings are risky to the workers. Motoki et al. (2013) stand out the high levels of illness and work leave. Evangelista (2011) highlights the high risk of accidents, while Al Amin et al. (2013) affirm that the number of accidents and occupational illnesses in meat processing companies are twice higher than the average rate.

The factors that lead to the main Weakness, presented in the bibliography and corroborated by this work, have also influence in the highlighted Threats: high rate of turnover of employees and lack of workforce, which besides the aforementioned factors, may be related to the work rhythm issue, presented by Sarda et al. (2009).

Based on the highlighted factors, the SWOT Matrix has been created (Figure 6). In the upper part of the figure, it is possible to observe that the factors in each one of the quadrants have been multiplied, to conclude the matrix construction by means of the quadrants sum, presented in the lower part of the same figure.

The quadrant that detains the highest result between all the comparisons is the most representative, that is, the current position of the company and its conduct. According to the Figure 6, the most representative quadrant in the studied case is the one that combines Strengths with Threats, indicating that the current position of the storage and shipping stage is Maintenance and Defense Capabilities (Figure 4). The conduct, in this case, would be diversification (Dutra, 2014). According to Dutra (2014, p.130), "this quadrant will highlight what could be the defense mechanisms which the company might arm itself against market threats". Companies with many internal strengths and many external threats have a lot to offer, however the external factors weaken its capability of pursuing aggressive strategies, according to Ferrell & Hartline (2009).

After the element identification and after the SWOT Matrix concluded, information regarding the strengths, weaknesses, opportunities and threats must be used, according do Dutra (2014), to: associate strengths and opportunities; use the strengths to eliminate weaknesses, and convert threats into opportunities, as presented in Figure 5. Thus, the conclusion of the SWOT Analysis is presented next, firstly by means of association between strengths and opportunities, followed by conversion of threats into opportunities and by the use of the strengths to eliminate weaknesses.

Table 1. Quantitative evaluation in the SWOT Analysis of the storage and shipping stage of the at processing company.

		Magnitude	Importance	Classification
Strenghts	St1: Adequacy to rules and legislations	3	3	9
	St2: Rigid quality control	3	3	9
	St3: Merger with the industry leader company	3	2	6
	St4: Training offered by the ergonomics staff	2	1	2
	St5: Employees as one of the focuses of the mission	1	1	1
Weaknesses	We1: Workers' risky physical surroundings	-3	2	-6
	We2: Work rhythm exclusively machine dependent	-3	1	-3
	We3: Low pay	-3	1	-3
	We4: Obsolete machines and equipment	-3	1	-3
	We5: Insufficient training	-1	1	-1
Opportunities	Op1: Absence of competition	3	3	9
	Op2: Process automation	3	1	3
	Op3: Packaging improvements	2	1	2
	Op4: Applied research in the sector	1	1	1
	Op5: Free training offer	1	1	1
Threats	Th1: High rate of turnover	-3	3	-9
	Th2: Lack of workforce	-3	3	-9
	Th3: Changes in the legislation	-2	2	-4
	Th4: Delay in the shipment and transporting of loads	-1	1	-1
	Th5: Population ageing	-1	1	-1

Source: Elaborated by the authors.

SWOT Matrix **Storage and shipping stage of a meat processing company**			**Opportunities**					**Threats**				
			Op5: Free training offer	Op4: Applied research in the stage	Op3: Packaging improvements	Op2: Process automation	Op1: Absence of competition	Th1: High rate of turnover	Th2: Lack of workforce	Th3: Changes in the legislation	Th4: Delay in the shipment and transporting of loads	Th5: Population ageing
			1	1	2	3	9	9	9	4	1	1
Strengths	St5: Employees as one of the focuses of the mission	1	1	1	2	3	9	9	9	4	1	1
	St4: Training offered by the ergonomics staff	2	2	2	4	6	18	18	18	8	2	2
	St3: Merger with the industry leader company	6	6	6	12	18	54	54	54	24	6	6
	St2: Rigid quality control	9	9	9	18	27	81	81	81	36	9	9
	St1: Adequacy to rules and legislations	9	9	9	18	27	81	81	81	36	9	9
Weaknesses	We1: Workers' risky physical surroundings	6	6	6	12	18	54	54	54	24	6	6
	We2: Work rhythm exclusively machine dependent	3	3	3	6	9	27	27	27	12	3	3
	We3: Low pay	3	3	3	6	9	27	27	27	12	3	3
	We4: Obsolete machines and equipment	3	3	3	6	9	27	27	27	12	3	3
	We5: Insufficient training	1	1	1	2	3	9	9	9	4	1	1

Sum Strengths x Opportunities	=	336	54	42	=	432
Sum Strengths x Threats	**=**	**528**	**70**	**50**	**=**	**648**
Sum Weaknesses x Opportunities	=	168	57	31	=	256
Sum Weaknesses x Threats	=	264	81	39	=	384

Figure 6. SWOT Analysis of the storage and shipping stage of the meat processing company. Source: Elaborated by the authors.

4.1 Association between strengths and opportunities

This section presents the relations between Strengths and Opportunities, which are gathered in Figure 7. The St1, adequacy to rules and legislations, may be directly related to the Opportunities, Op3, Op4 and Op5. For example: The Regulation Standard NR-36 can be quoted once again, which establishes guidelines to the meat processing companies, in which the accessible equipments and tools must favor the adoption of appropriate postures and movements, easy using and comfort, in order not to compel the worker to excessive use of force, pressure, hold, flexion, extension or twisting of the body segments. For that matter, one of the improvement ways would be more automatic processes (Op2). Another Opportunity would be to improve the packaging (Op3) in such a way that the handhold would be done in a secure and comfortable way, by the fact that the studied step has as main activity the shipment and material handling.

The St1 is also related to new research regarding the storage and shipment stage (Op4), which represent an opportunity to improve the factors that have been pointed as negative, by means of the considerations and the analysis, considered harmful especially for the workers of the productive sector. Through research, the following aspects can be improved: physical surroundings (especially thermal environment, noise and lighting), physical workload, qualification and training of the workers. The NR-36 also provides guidance about the trainings that must be realized both in admission and periodically. An opportunity is also the offer of free qualification (Op5), as provided by public schools, in which workers are able to improve their skills and knowledge and have better chances for personal growth.

The rigid quality control adopted in the studied productive step (St2) is a strength that, along with the various highlighted opportunities, helps to preserve the company's positioning. On the other hand, it can be used in a more aggressive way when related to Op2, automation of processes, given that optimized processes provide better results.

The St3, merger with the industry leading company, is directly related to Op1, absence of competition. By belonging to a big group of the meat processing industry, the studied company has a dominant market share, which eases its evolution. This strength also has a strong relation to Op2, automation of processes.

The St4 is directly related to the Op5 since they complement each other to have workers that are qualified for their functions. Thus, the results of this connection impact the St2, relating to the quality control of the studied sector. Qualified workers work better, also obeying to the rules and legislation, mentioned in St1.

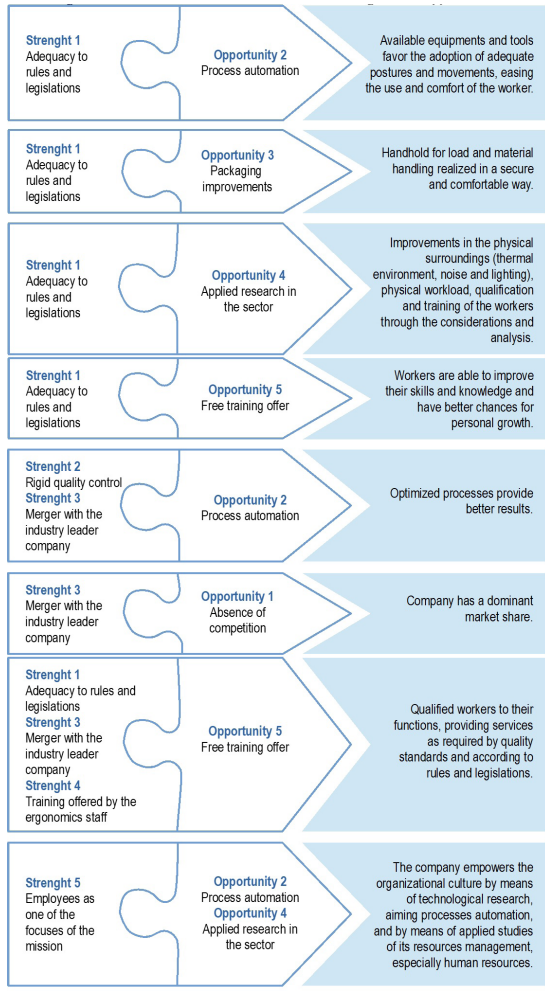

Figure 7. Associations between the identified Strengths and Opportunities. Source: Elaborated by the authors.

Regarding the St5, it is possible to point out that de institutional mission is one of the strategic elements of a company. Linking this strength to the Op4, which comes to applied research of the sector, the company is able to develop strategies to empower the organizational culture. The institutional mission, presented as one of the focuses the warranty of a better future to the workers, is revealed as one of the main paths for the company to improve its workers quality of life, which has a positive impact in its productive rates.

4.2 Conversion of threats into opportunities

Threats must be used to maximize existing opportunities and generate new ones, as demonstrated in the Figure 8.

The main verified threats to the storage and shipping stage of the meat processing company, according to

Figure 8. Conversion of threats into opportunities. Source: elaborated by the authors.

the SWOT Analysis, were the high turnover rates, and the lack of workforce (Th1 e Th2, respectively). They can be minimized by opportunities Op2, Op3, Op4 and Op5. These threats stood out, since the studied productive step is characterized by high rates of illness and work leave, which establishes the work at the meat processing company as risky. That is mainly due to the low temperatures, which leads to muscle stiffness, circulation issues, as well as dexterity reduction, increasing the risks of accidents. Besides that, the rate of repetitive-effort injuries is very high, as presented in several studies, such as Ferreira (2015), Al Amin et al. (2013), and Motoki et al. (2013).

Such factors characterize and emphasize the reason of the threats Th1 and Th2, and through opportunities as automation of processes (Op2) it is possible to reduce the human mistakes, save time and resources, generating productivity gain. On the other hand, packaging improvement (Op3) is necessary, since in this step of the productive process products are handled and moved, and an appropriate handhold is necessary. NR-36 (Brasil, 2013) establishes that the handled elements must

> […] have appropriate devices or shapes to a safe and comfortable handhold, be free of edges or corners that can cause wounds or rashes; must have shape and dimensions that do not increase the physical effort of the worker, and be stable.

The regulation also establishes that in the

> […] lift, handling and individual transport of loads, the sites for handhold and storage of loads must be organized in such way that the loads, accesses, spaces for handling, handhold heights and deposition do not obligate the worker to do excessive flexions, extensions, and upper body rotations and other positions and movements that are forced and harmful to the body segments.

There can also be highlighted, as a way to minimize and avoid threats Th1 and Th2, applied research to the sector (Op4) and offer of free qualification (Op5).

The Op1, absence of competition, could minimize Th1, since that the workers may have difficulties to find other work options in the region. However this opportunity does not appear to be sufficient to decrease the high turnover of workers, suggesting that the company must search for other strategies to retain its workers, related, mostly, to programs of corporate quality of life. Opportunities related to the improvement of the workers quality of life must be noted and used by the company.

The Th3, changes in the legislation, relates to the Op5, offer of free qualification. Technical Schools are aware of law updates which impact workers and the productive processes, offering qualification that overcome emerging needs of the professional world. Furthermore, changes in the legislation may mean opportunities of process improvement (Op2), as well as more or less significant innovation in the storage and shipping stage and in the company as a whole. New legislations that bring upgrades to the workers' rights are also opportunities of process improvement, since they have an impact in corporate quality of life, and might even minimize the turnover rates (Th1).

On the other hand, Th4, delay in the shipment and transport of loads, can be minimized and even eliminated by the opportunities Op2, Op4 and Op5. The automation of processes (Op2) would lead to a further greater standardization in the productive process, and, therefore, more quickness and agility, with elimination of wasting in the process. In case automation is not accomplishable, it is possible to minimize that threat through the offer of a greater qualification of workers (Op5). Applied research in the sector (Op4) are also a way to mitigate or even eliminate Th4, to identify what is causing storage and shipping delays and solve this problem.

The Th5, ageing population, is able to be converted into opportunities related to programs for the elderly. Brazilian population is ageing and, therefore, several social actions are arising, aiming to improve the elderly quality of life, as well as reinserting them in the labor market. The Th5 converted into opportunity may also help to minimize Th2, lack of workforce, in case processes are automated (Op2) and packaging in improved (Op3), through research (Op4), making it possible to the studied step to hire elderly workers.

Therefore, it is necessary to the work conditions to allow the accommodation of the capabilities and limitations of the elderly. Certainly not all the work positions of the storage and shipping stage will be appropriate to receive elderly workers, however if some of them would, it would be an opportunity to be explored.

4.3 Use of strengths to eliminate weaknesses

One of the main benefits of the SWOT Analysis use is the possibility to use the identified strengths to eliminate or reduce weaknesses. Figure 9 presents a summary of this analysis. The St1, adequacy to rules and legislations can and must eliminate weaknesses We1, We2, We4 and We5, since they are about aspects covered by NR-36. On the other hand, the adequacy to labor legislation related to remuneration of workers appear not to be sufficient to maintain them in their jobs (therefore generating high turnover – Th1) or, furthermore, keeping them satisfied with their salaries, which leads to We3. The company has control over its workers' remuneration, e, if they are considered one of the focuses of the institutional mission (St5), the company must use that strength to minimize We3, low remuneration.

Besides that, St5 may directly impact in reduction of weaknesses We1, We2 and We5. In the studied step, it is possible to highlight two essential factors: environment factor such as thermal comfort, and the physical workloads, especially manual loads handling. Thus, having the worker as the focus of the study, it is possible to improve the physical surroundings (We1) and the rhythm of work (We2). Moreover, it is possible to qualify these workers, since as Ferreira (2015, p. 160) affirms, it is necessary to involve "techniques for lifting, handling and transport of materials". It is also important that

> […] the position of the load is the closest possible to the worker during the handling of the loads, consequently, there is an attenuation of the flexions of movements, risk of back injuries and musculoskeletal disorders, such as in neck and shoulders.

A very practical way to eliminate We5, insufficient training, is with the use of St4, training offered by the ergonomics staff. A study can be carried out, aiming to identify what the main characteristics and specifications of the suited step are, in order appropriate training to be provided, so that the workers will be able to carry out their activities in a safe and efficient way.

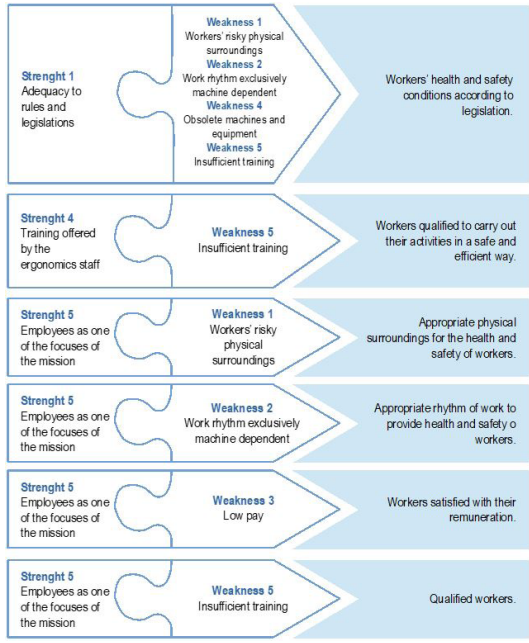

Figure 9. Use of strengths to eliminate weaknesses. Source: Elaborated by the authors.

5 Final considerations

Based on the developed study, is possible to consider the proposed objective as achieved. Through diagnosis, using SWOT Analysis tool, it was possible to propose solutions to the storage and shipping stage of a meat processing company, aiming to improve processes and internal activities. Among the proposals there can be highlighted, for example, qualification of workers, automation of processes, and improvements in the products packaging.

The created matrix pointed out that the storage and shipping stage is positioned in the second quadrant, indicating that it has many strengths and threats. Therefore, several correlations between strengths, weaknesses, threats and opportunities have been made, to indicate strategies to the storage and shipping stage. The research assumed the possibility of optimizing this step of the productive process by means of strategic management tools, starting by the diagnosis, initial and fundamental step to the implementation of any other managing tool which may lead to innovation of the sector.

This work demonstrates the possibility of implementation of a managing tool, specifically diagnosis elaboration in a clear and concise way, based on the methodology developed by Dutra (2014). It was possible to perceive the main benefits of the SWOT Analysis highlighted by Ferrell & Hartline (2009): simplicity, low cost, flexibility, integration and synthesis of various information, and collaboration

in exchange of information. Furthermore, the tool allows a deep analysis to indicate the need of actions with the potential to benefit the studied step, both from the point of view of the company and for workers. The wealth of SWOT Analysis resides in the possibility of establishing connections between the various identified factors (strengths, weaknesses, opportunities and threats) to bring innovation to the processes, improvement in work quality of life, and growth for the company with no harm to the employees.

It is possible to understand, from the realized study, that it is necessary for the company managers, and especially for those who act closely to the studied step to carry out an analysis of the created matrix aiming to identify strategies, since they have a deeper understanding of the reality in which they are inserted in.

Despite the studied company being the global leader in the meat processing industry, it is not possible to generalize the results of this research to other companies. It is suggested further research deeper this field of knowledge, giving continuation through proposing new strategies or even implementation of other managing tools from the presented diagnosis. This study was limited to a step of the productive process of a meat processing company, therefore the presented results are not applicable to the other steps. However, the bibliographic research, the field one, and the analysis demonstrate that the used tool provides the systematization and integration of disperse information in a simple way, being suitable for the other steps of production, which also represent relevant objects of study to researches of the managing field.

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