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## PROPOSITION FOR THE ALIGNMENT OF THE INTEGRATED MANAGEMENT SYSTEM (QUALITY, ENVIRONMENTAL AND SAFETY) WITH THE BUSINESS STRATEGY

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**Abstract:** *With the current globalized and increasingly competitive organizational scenario, organizations increasingly need strategies to survive in the midst of excessive competition. In order to optimize efforts and resources, the companies, especially industrial companies, started to develop their own Integrated Management System (IMS), namely, quality management system, environmental management system and safety management system, among others, as a plausible and efficient alternative in this sense. However, few companies are aware of the difficulties in aligning their IMS as a strategy. This paper is classified as qualitative, and has used the bibliographic research method for its execution. Therefore, the aim of this paper is formulate the propositions that assist the IMS alignment as a business strategy. The results of this paper allow identify that really exists an interaction in both senses, i.e., the IMS influences a strategy and the strategy influences the IMS. The main contribution of this article is to support in the development based on the articulation of the IMS-related theory and business strategy.*

**Keywords:** *Integrated Management System, Business Strategy, Alignment.*

### 1. Introduction

The economy globalization and the recent financial crisis have taken organizations to live with new challenges, featured by the intense competitiveness, scarce natural resources, constant technological progresses, new market demands and increasingly demanding clients that wants more concerning new products, quality and price, which impose constant needs of operational and managerial changes to the business scenario (Santos & Barbosa, 2006; Oliveira, 2013; Marques et al., 2018).

To enhance their chances of surviving in this scenario and satisfy these demands, the organizations have searched for opportunities of operational, technological, managerial improvements, among others, that allow, in an equitable form, to evolve in a productive, environmental and social point of view (Simon et al., 2014).

The characteristics and the degree of impacts in industrial companies vary regarding the sector in which they act, from the used raw materials, process characteristics, manufactured products and, obviously, the technological and managerial mechanisms for its control (Holton, Glass, & Price, 2010);

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Schaltegger, Lüdeke-Freund & Hansen, 2012).

The current business context has driven the organizations to develop business strategies even more flexible, with the aim of helping the organizations to understand and subsidize the action planning in the environment in which they are inserted in (Teece, 2010; Tansey, Spillane & Meng, 2014). Thus, the business strategy aims at offering a unit, path and purpose sense to all the organization sectors, facilitating the necessary changes induced by the environment (Agarwal, Grassl & Pahl, 2012; Abraham, 2013; Santos et al., 2016).

The implementation of certifiable management systems has become a common practice among the different types of industrial organizations. In this context, the Quality Management System (QMS) certification, according to the ISO 9001, Environmental Management Systems (EMS), according to the ISO 14001, Occupational Health and Safety Management System (OHSMS), according to the OHSAS 18001/ISO45001 and the Corporate Social Responsibility Management System (CSRMS), according to the SA 8000 are the main center of attention, due to its great applicability in the entire world, especially in the industrial sector (Nunhes, Barbosa & Oliveira, 2017).

Besides these, the certifiable management systems can be integrated as a crescent variety of other implemented subsystems pursuant to other standards, including the ones regarding risk, social responsibility, human resources (Carvalho, Santos, & Gonçalves, 2018; Oliveira, 2013; Wening & Refflinghaus, 2015; Santos, Bravi & Murmura, 2018b).

Usually, the systems that compose the IMS are normalized and certifiable, however, there are exceptions, such as ISO 26000 that instead of the requirements, they propose not only orientation guidelines to companies but also social responsibility issues. Thus, for instance, QMS follows the ISO 9001 standard, EMS follows the ISO 14001

standard, OHSMS follows OHSAS 18001 and ISO 45001 standards, and the CSRMS follows the SA 8000 and ISO 26000 standards (Santos et al., 2014; Rebelo et al., 2016; Nunhes, Barbosa & Oliveira, 2017). The implementation and certification of these management systems have continually increased in the last 20 years (Ribeiro et al., 2017; Bernardo et al., 2017; Rebelo et al., 2017), with the purpose of obtaining excellence in business (Santos et al., 2018a; Bravi et al., 2017; Doiro et al., 2017; Santos, Murmura & Bravi, 2018c)

According to the ISO, in 2017, there was 1,644,357 certifications of all types guided through ISO throughout the world, from which 1,106,356 certifications are related to ISO 9002 and 346,189 to ISO 14001. Regarding OHSAS 18001 and SA 8000, in 2017 there was 92,315 and 9,081 certifications, respectively (BSI Group, 2016; SAAS, 2018). Thus, in order to optimize efforts and resources, mainly the industrial ones, have chosen for the development of IMS as a plausible and efficient alternative in this sense.

The integration of management systems, the innovation strategy and client's satisfaction are relevant issues for the competitiveness of any organization. The difficulties in the integration of management systems and its relation to the innovation strategy and client's satisfaction must be explored, by proposing a model that aims at uniting these three concepts (Simon et al., 2014). However, as observed in the scientific literature concerning these themes, few companies are aware and alert of the difficulties for the development of a management system that aligns, in a cohesively way, the IMS with the business strategy, since in many cases the current strategies can become a bit dispersed from the ones initially planned (Santos, Mendes & Barbosa, 2011; Simon et al., 2014; Santos et al., 2017).

However, if they are aligned in a concise and coherent form, they can facilitate and allow the organizations to fully reach the integration

of IMS with the business strategy, which can have a positive impact in its innovative skills, as well as in their employees and clients' satisfaction (Simon et al., 2014; Abad, Dalmau, & Vilajosana, 2014; Gianni & Gotzamani, 2015).

This research explores this gap, aiming to show how the business strategy approaches and models and techniques arising from it, as well as the certifiable management systems, can be used for the formulation of the alignment propositions of IMS to the business strategy.

Before these arguments, the research issue that will surround the development of this article can be enounced as follows: how is it possible to align IMS to the business strategies?

Consequently, the main goal of this article is the formulation of propositions that assist in the alignment of IMS with the business strategy. For this, this article is structured as follows: following this introduction there is the theoretical reference about IMS and business strategy, afterwards it is presented the research method, followed by the presentation of results and discussions about the postulates for the alignment of IMS with the strategy. Finally, there are the conclusion and references.

## 2. Theoretical Reference

### 2.1. Integrated Management Systems

The advance in globalization, the increasing competitiveness among companies and the need of a continuous improvements as a market requirement, have lead the companies to consider the integration of their management systems as a good opportunity to rationalize processes, reduce costs, enhance productivity and satisfy their employees and clients, once the development and maintenance of management systems and programs that are treated in an individual way, can create avoidable problems of many kinds, such as the duplicity of documentation,

overlapping of tasks, redundancies, wastes, a lot of bureaucracy, etc. (Santos, Mendes & Barbosa, 2011; Oliveira, 2013).

There are different definitions in scientific literature about IMS, however, it is noticed that the concepts within these definitions are convergent, once the system is a set of interacting and interdependent parts that form a unitary whole with a determined objective and perform such task generating one or more results. Therefore, a truly integrated system is the one that combines different management systems that make it possible to put all the relevant management standards into practice in a single system (Simon, Karapetrovic & Casadesús, 2012; Simon et al., 2014; Rebelo et al., 2016).

IMS deals with the integration of practices and procedures of different normalized management systems. This integration process normally consists of a merger of the Quality Management Systems (QMS), Environmental Management Systems (EMS), Occupational Health and Safety Management System (OHSMS), and, most recently, the Corporate Social Responsibility Management System (CSRMS) (Oliveira, 2013; Wening & Refflinghaus, 2015).

Among the benefits that the IMS development can offer to the organizations are: cost and tasks reduction, decrease of bureaucracy and conflicts among the systems, simplification of the documentation, manuals, procedures and registrations. It also allows the structured and systematized conformity to the current legislation, enables time and resources saving through its senior management, besides having a systemic approach for the risks, organizational, communication improvement and organizational performance management. (Santos, Mendes & Barbosa, 2011; Oliveira, 2013; Bernardo et al., 2015; Nunhes, Barbosa & Oliveira, 2017).

Rebelo, Santos & Silva (2016) highlights the main justification for the integration of management systems is the positive effect that it can have on their employees, since the

synergy generated by the integration have made them reach better performance levels. On the other hand, the difficulty that must be highlighted is that there isn't an agreement about the ideal manner of establishing and managing IMS in organizations yet (Simon, Karapetrovic & Casadesús, 2012).

The systems that integrated IMS are generally normalized and certifiable, and have continuously increased in the last twenty years (Bernardo et al., 2017). However, there are exceptions, such as in ISO 26000 case that instead of the requirements, it proposes orientation guidelines regarding the social responsibility issues. Thus, for example, the QMS follows the ISO 9001, EMS follows ISO 14001, OHSMS follows the OHSAS 18001 and ISO 45001, and CSRMS follows SA 8000 and ISO 26000.

According to Simon, Karapetrovic, & Casadesús (2012), there are ways of implementing a IMS that depend on the companies' own characteristics that intends to implement them. The author also emphasizes that satisfying these needs does not necessarily implicate a formal process of certification, and can be restrict only to the improvement of the company's processes and products.

Some normalization agencies have already made some specific standards available for the integration of management systems, like in the case of Denmark (DS 8001:2005), Australia and New Zealand (AS/NZ 4581:1999), Spain (UNE 66177:2005) and the United Kingdom (PAS 99:2006). Besides these, ISO recently disclosed recommendations manuals known as Annex SL to guide the organizations that wish to integrate their management systems, which favors the trend that the standards are even more compatible among one another and, consequently, more appropriate for integration (Bernardo et al., 2017; Nunhes, Barbosa & Oliveira, 2017).

In the scope of integrable elements, the researches present several conclusions that alternate, from the total integration of the

elements of the systems to the integration of a restricted set of elements considered integrable. The ISO has a guide that presents a global reference framework for the elaboration of references of management systems, which aims at promoting the alignment of requirements that is necessary to promote the harmonization of the implemented system (Oliveira, 2013; Simon et al., 2014).

In general, the elements and functions of the most commonly integrated management systems in companies are: manuals, policies, objectives and goals, structure and responsibility, manager, work instructions, document control, records control, training, internal communication, emergency plans, performance indicators, acquisition, treatment of nonconformities, control of inspection, measurement, testing equipment, preventive actions, corrective actions, internal audit, external audit, management review (Nunhes, Barbosa & Oliveira, 2017). However, it is worth noticing that some of these elements, such as manuals and the person in charge for the direction, are not mandatory anymore in the current versions of ISO 9001: 2015 e ISO 14001: 2015.

## 2.2. Business Strategy

Although there is no consensus on the meaning of the term Strategy, it is a word originating from the Greek term *strategia*, which means plan, method, process, maneuvers or decisions used to achieve a specific goal or result. Strategy originated in the military area, from the planning and execution of the movement of troops in situations of conflict, in which it was considered the psychological and behavioral abilities of the general in charge of an army (Dalby, 2007; Ghemawat, 2016).

Strategy began to stand out in a more effective way in the organizational contexts with the post-Second World War demands, which were intensified after the globalization of economy and creation of several economic blocks (Zott & Amit, 2008). The constant

financial crises have boosted organizations to develop flexible business strategies even more in the face of the challenge of living with increasingly demanding customers who are expecting more in terms of new products, price and quality (Teece, 2010). The incorporation of the term strategy into the business environment was important and necessary for the planning of the organization, since one of the objectives of the business strategy is to help organizations understand how to subsidize the planning of their actions in the environments (internal and external) in which they are inserted. (Oliveira, 2013; Simon et al., 2014; Tansey, Spillane & Meng, 2014).

The business strategy presents a multidisciplinary character and seeks to offer a sense of unity, path and purpose to all sectors of the organization, facilitating the necessary changes induced by the environment (Agarwal, Grassl & Pahl, 2012; Abraham, 2013). It is also characterized by presenting a macro structure, because it involves organizational elements that encompass the company as a whole (Teece, 2010; Lee, 2014; Cano et al., 2015).

Business strategy is almost always a forecast, that is, it is a bet of how the competition will develop and how this evolution can be exploited to obtain competitive advantages (Teece, 2010). The problems of business strategy are usually unstructured, dynamic, non-cooperative. In some cases, they may have incomplete information or even be treated by agents acting according to their own interests, therefore, they do not allow a logical solution (Magretta, 2012; Agarwal, Grassl & Pahl, 2012; Miles, 2013; Tansey, Spillane & Meng, 2014).

The development of business strategy is important and necessary for planning and organizational success. The formulation of the business competitive strategy must be adjusted to the conditions of the environment in which they guide the business of an organization (Abraham, 2013; Caskey 2015). When establishing an organization's

performance guidelines, the implementation of corporate and business strategies becomes one of the fundamental points in order to achieve the desired objectives, to overcome the challenges of the market and the competition, achieving an adequate performance in front of all the contingencies and favorable or adverse situations that present themselves (Salavou, 2015; Parnell, Long, & Lester, 2015).

Strategic planning can be understood as an administrative practice that, based on the evaluation of the condition of an organization and the situation of its operating environment, results in a critical recognition of its opportunities, threats, strengths and weaknesses for the length of its objectives, establishing structured and formal guidance to guide the organization (Agarwal, Grassl & Pahl, 2012). Strategic planning also considers likely future scenarios based on the recognition of the organization's condition, the situation of internal and external environments, the relationship between these two dimensions and alternative business strategies (Salavou, 2015; Zhang, 2015).

There are several ways to develop business strategy, however, we realize that there is no well-defined business strategy without a well-defined and structured strategic planning of the real internal and external conditions that make up the business context of a given organization (Rosenzweig et al., 2003; Peng, Wang & Jiang, 2008; Zhang, 2015).

The so-called Competitiveness Era changed the configuration of strategic planning, which began to be developed with the objective of formulating competitive strategies in order to promote competitive advantages for companies. One of the pioneers to introduce this concept was Michael Porter through his model of the five competitive forces (Magretta, 2012). As competition moves companies to seek new ways to develop their strategies and many have sought strategic aids to formulate their business strategies, in addition to Porter's model, models such as Resource Based View (RBV) and Balanced

Score Card (BSC) are largely used by organizations (Magretta, 2012; Agarwal, Grassl & Pahl, 2012; Miles, 2013; Tansey, Spillane & Meng, 2014).

Thus, it is understood that the formulation of the business strategy evolves, based on the initial ideas of the strategic planning, adjusting the variability of all the elements involved in the process, among them: the internal structuring and the resources of the organization; the external environmental conditions; and the possible relations (synergies and antagonisms) between the elements in the various fields of the business environment (Salavou, 2015).

The different lines of thought in the literature, as well as the various strategic models, must be considered in the concept of strategy to be adopted by the organizations, whatever their field of action, and the strategy adopted should lead the company to differentiate itself from the competitors seeking to establish competitive advantage that must be permanently monitored, since it cannot be predicted how long it will last. At the same time, it is a way to be followed in order to reach the objectives set and to fulfill the defined mission (Parnell, Long & Lester, 2015; Zhang, 2015).

Therefore, the strategy formulation process should also address the benefits of stakeholders, providing a basis for establishing the series of transactions and social contracts that link the company to its shareholders (Caskey, 2015; Parnell, Long & Lester, 2015). Therefore, business strategy can be considered as a frame of references so that the organization can maintain the continuity of its business within standards considered ideal and at the same time, facilitate its force of adaptation to possible environments in constant change (Salavou, 2015; Parnell, Long & Lester, 2015; Zhang, 2015).

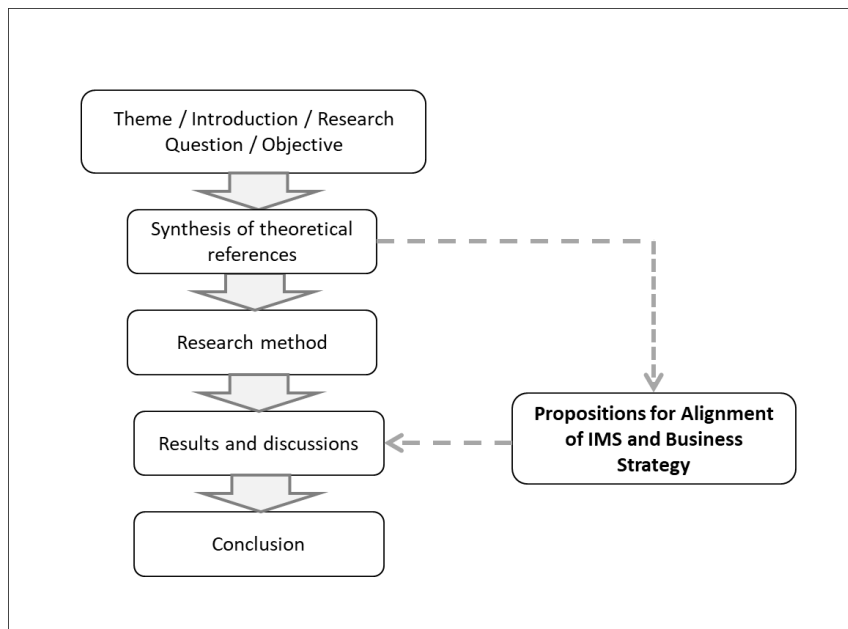
### 3. Research Method

In this section information about the article classification, definition of the used techniques and sequence of developed activities to carry out the research will be exposed. This article is classified as qualitative, being used to execute the bibliographic research. (Jupp, 2006; Kothari & Garg, 2014). According to Jupp (2006), the bibliographic research is a theoretical investigation and does not have elements such as interviews, surveys, tests and the participant's observation to explain the issue.

As of a bibliometric study about the evolution of the publications regarding IMS it was possible to identify some gaps in researches that approached the IMS as an alternative to foment and develop the business strategy (Nunhes, Motta & Oliveira, 2016). Thus, we decided to investigate the best research opportunities of this relation, for this, a specific exploratory study on papers that related IMS to the strategy was conducted, and it was noticed that, until June 2018, fifteen articles that somehow pointed to the relation existing between IMS and strategy had been published in the scientific literature (Scopus, 2018; Web of Science, 2018). The methodological flow in which the research was developed is presented in figure 1.

After defining the key elements of the research, such as the theme, introduction, research question and goals, the theoretical reference was developed, which supported the analysis and discussions of this paper. Then, in order to enhance the existing synergies and mitigating the antagonisms between the IMS and the business strategy, the theoretical elements for its alignment were elaborated and discussed.

In this sense, the alignment is understood as the interface relation of the business strategy with the integrated management systems and vice versa. Subsequently, the conclusion was developed based on the results and discussions.



**Figure 1.** Research Methodological Flow. Authors (2018).

#### 4. Results and Discussions

The organizational culture is one of the most critical factors for the good development of the normalized management systems and even more for its integration and interaction with the business strategy, thus, great attention and effort must be given to the elements related to it (Santos-Vijande, Sanchez & Trespalacios, 2012; Barbosa et al., 2017). In this sense, it is emphasized that the development of an IMS, led by the high administration, must guarantee the commitment of all the people, direct and indirectly, involved in the process and it must be coherent with the organization's culture and strategy.

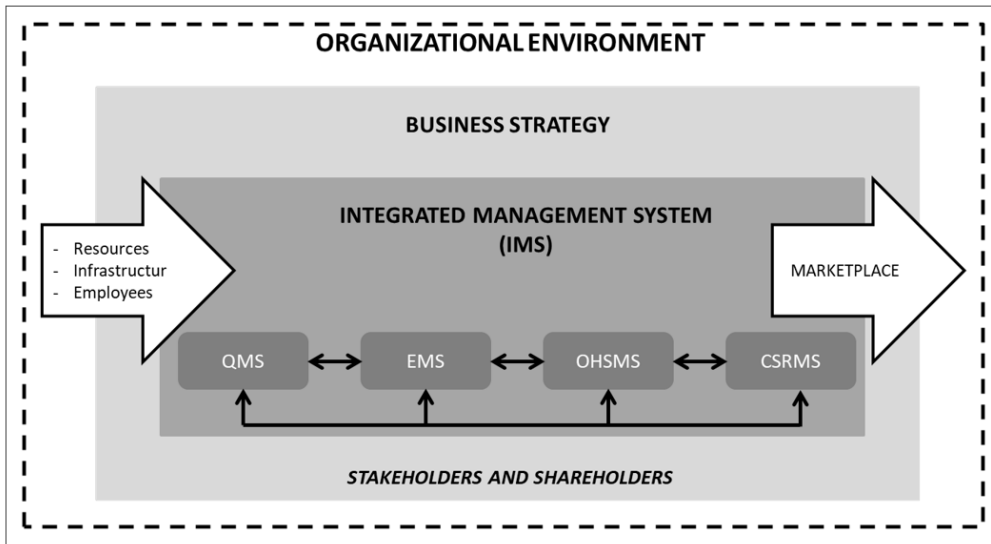
A previous diagnosis of the organization's culture overview characterization, as a whole, is fundamental to assure the adequacy and success of IMS. This will prevent adverse effects in its development, such as lack of collaboration between departments, lack of motivation, etc. (Bernardo et al., 2012).

The resistance to change can threaten the development of the IMS and groups within

the organizations, besides threatening those that benefit from the current attribution of its resources and financial aids. This can happen horizontally, between the organizational units, and on the vertical axis (Oreg, 2007; Thomas, Sargent & Hardy, 2011).

Thus, the implementation of a IMS, due to its form and structuration, will cause changes in the company's culture, its procedures, bureaucracy, tasks performance, members' habits, among other factors, i.e., it will have a great impact on the business strategy. In addition, the presence of conservative and reactivated strategies can harm the integration of systems, thus causing rejection to the system due to the maintenance of outdated habits and traditions that prevent the advance of new management tools. (Zeng, Shi & Lou, 2007).

Figure 2 illustrates how the development of IMS integration with the business integration can be, in order to propose a bigger understanding and comprehension of the research, which has as its goal the formulation of propositions that assist the alignment of IMS with the business strategy.



**Figure 2.** Alignment of IMS with the Business Strategy. Authors (2018).

Thus, it is understood that the formulation of propositions concentrates in how to promote the correct alignment of the IMS developed in companies, together with the business strategies adopted by them, once the IMS is inserted internally in the companies, while the business strategy is characterized by presenting a macro structure, i.e., involves organizational elements that englobe the company as a whole (Lee, 2014; Cano et al., 2015).

In order to conduct the characterization of this phenomena, it was explained how this behavior is generated, suggesting ways to change its current state. The purpose of the alignment is also to evaluate and explain the effectiveness of initiatives or provide new organizational alternatives to enhance the behavior of a certain system, for example, the possible existing synergies between the IMS and/or with certifiable systems separately with the business strategy.

Thus, Figure 2 shows a hypothesis of how the alignment of the IMS with the business strategy can be, in which, an adequate alignment shall allow that the organizations reach their goals and these can be convergent and with actions aimed towards: investments, trainings, awareness, motivation, control,

inspections, document analysis, etc., and that establish common indicators of performance, in a way that one drives the other, then establishing high strategic, quality, environmental, health, safety and social responsibility parameters in order to obtain the clients' higher trust and satisfaction.

Pursuant to Schein (2009) every and any company, regardless its size, segment that acts and goods and services it produces, has an organizational culture that can be formally instituted or not. Generally, the organizations are constituted of own personalities and can be rigid or flexible, supporting or hostile, innovative or conservative, with a weak or strong culture (Schein, 2009; Lunenburg, 2011). The organizational culture influences and supports all members of the organization with premises to guide its behaviors and mentalities. It is composed by practices, symbols, habits, ethical and moral values, principles, beliefs, ceremonies, internal and external policies, systems, jargon, besides the organizational climate and culture. (Schein, 2009; Lunenburg, 2011).

Lunenburg (2011) emphasizes that the essence of the culture in a company is expressed in a way that it develops its businesses, how it treats its clients and



employees, the level of autonomy or freedom existing in its work environment, units and departments, and the level of loyalty of its employees. In addition, the culture can influence the definition of the mission and the establishment of the organization's goals and strategies. In this sense, it is important to highlight that for the management of the organization to be efficient, the culture must be aligned to other decision aspects and business actions, such as methods, planning, organization, direction, control, strategies and the most varied and different management systems (Schein, 2009; Lunenburg, 2011).

Many organizations have opted for implementing an IMS as an alternative to optimize efforts and resources, aiming at gaining competitiveness (Rebelo, Santos & Silva, 2014; Oliveira, 2013). The IMS is composed by the total or partial integration of the QMS, EMS, OHSMS and, most recently, CSRMS (Santos, Mendes & Barbosa, 2011). Each one of these systems has, at least, one certifiable standard, being ISO 9001 for quality, ISO 14001 for the environment, OHSAS 18001/ISO 45001 for labor safety and health and SA for social responsibility (Santos et al., 2018b)

On the other hand, the business strategy has great influence in companies' competitiveness, since it affects internal aspects related to employees' capacitation and formation, and also in external aspects, such as the relationship with suppliers and clients. Such characteristics can directly influence the organizational strategy, impacting business sales and purchases, what reveals a great interaction with the IMS development (Mintzberg & Quinn, 2001; Schein, 2009). Thus, it is possible to say that between business strategy and IMS there is a two-way interaction, i.e., the IMS not only influences the strategy but also the strategy influences the IMS (Schein, 2009; Lunenburg, 2011).

Barbosa et al. (2017) claims that the preparations and structural and behavioral changes demanded by the development and

maintenance of an IMS, such as the insertion of concepts of continuous improvements, systemic vision, incessant search for the reduction of actions, processes, information and duplicated documents, the persistent "fight" for the reduction of costs and mistakes, and by the focus on increasing clients' satisfaction, will direct and considerably impact the organizational strategy, in light that these probable changes of paradigms and behavior of each individual and the company as a whole shall adapt, with the purpose of an efficient and complete integration of systems so it is a real competitive differential.

Thus, to have the assistance needed to the development actions of the correct alignment of the IMS with the business strategy it is advisable to consider the characteristics of the organizational culture. Thus, an innovative and flexible company, for example, will probably accept new ideas and challenges with a more easily than a familiar and traditional company (Barbosa et al., 2017).

The development plan of an efficient alignment between the IMS and business strategy must take into account these peculiarities. In the first hypothesis (innovative and flexible company), the IMS must be disclosed as a great challenge, aligned to a technological support common in innovative companies, to get the attention and guarantee the involvement of everybody. In the second case (familiar and traditional companies), a detailed action plan will be necessary for the preparation and convincing of the big work forces, it will be necessary efforts to show the benefits that this new system (IMS development) will bring to the company and, consequently, the maintenance of their job positions.

Thus, the ideal situation considered in this study in order to have the correct IMS and business strategy alignment, is that the possible systems that integrate them can become part of the business daily life of its employees, i.e., be effectively incorporated to the organizational culture and, therefore,

don't need to be treated as news or changes in the organization.

## 5. Conclusion

The economic globalization, world financial crisis and the enhancement of competition has made organizations to act in an even more turbulent environment, which is characterized by the considerable increase of the customer's demand level related to price, quality and commitment the business have with ethic, human being and the environment, increasing demands of knowledge, uncertainty and, consequently, business risk (Oliveira, 2013; Rebelo et al., 2017; Carvalho, Santos, & Gonçalves, 2018).

The current business context has driven the organizations to develop business strategies even more flexible, in this context the certification of the management systems, the QMS, EMS, OHSMS and most recently CSRMS, above all, have also become common practices between the different types of organizations, especially in the industrial sector, which is responsible for presenting the highest number of companies certified with the most used management systems (Teece, 2010; Tansey, Spillane & Meng, 2014; Nunhes, Barbosa & Oliveira, 2017). In order to optimize efforts and resources, many organizations have chosen for the development of IMS as a plausible and efficient alternative in this sense.

Thus, this article has identified propositions that must avoid adverse efforts in the alignment development of IMS with the business strategy, such as the lack of motivation and commitment, low collaboration between departments, resistance to changes, among others. The results of this paper have allowed the conclusion that there is a two-way interaction between the IMS and business strategy, i.e., the IMS influences the business strategy and the business strategy influences the IMS. Before the propositions pointed out (hypothesis 1 and hypothesis 2) it was

concluded that the integration of the systems aligned to the business strategy must be effectively incorporated to the organizational culture so that a correct alignment of IMS with the business strategy can happen.

It is important to emphasize that the main contribution of this article is the support in assisting the development of a recent scientific knowledge block that is based in the articulation of the theory related to the IMS and the business strategy, in which It was verified that the relation between the IMS and the strategy has arouse the interest in some experts, who are suggesting the development of studies to increase and strengthen the researches correlated to the themes (Abad, Dalmau & Vilajosana, 2014; Gianni & Gotzamani, 2015). Regarding the main contribution applied to the article, it is highlighted the feasibility of the proposed alignment hypothesis, even if with a few empirical studies related to the theme.

Therefore, this study allowed us to identify, in a direct way, the existing correlations between IMS and business strategy, and, consequently, it enabled the formulation of propositions to foment the alignment development between IMS and business strategy.

However, there is a wide range for the information, elements and practices, not only from the IMS but as well as from the organizational strategies, to be enhanced in order to leverage even more the business performance. Such evidence reinforces the existing scientific gap that can be explored by the thematic analyzed in this article.

In this study it was verified that although the relation between IMS and strategy are part of a contemporary thematic and have arouse the interest of some expertise, it is suggested the development of more studies to enhance and strengthen the researched correlated to the themes. Therefore, in addition to theoretical studies, empirical studies that can be operationalized in studies or even in surveys are well regarded by the authors.

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## References:

- Abad, J., Dalmau, I., & Vilajosana, J. (2014). Taxonomic proposal for integration levels of management systems based on empirical evidence and derived corporate benefits. *Journal of Cleaner Production*, 78(1), 164-173. doi.org/10.1016/j.jclepro.2014.04.084
- Abraham, S. (2013). Will business model innovation replace strategic analysis? *Strategy & Leadership*, 41(2), 31-38. doi.org/10.1108/10878571311318222
- Agarwal, R., Grassl, W., & Pahl, J. (2012). Meta-SWOT: introducing a new strategic planning tool. *Journal of Business Strategy*, 33(2), 12-21. doi.org/10.1108/02756661211206708
- Barbosa, L. C. F. M., Nunhes, T. V., Santos, G., & Oliveira, O. J. (2017). *Proposition for alignment of Integrated Management System elements with Organizational Culture*. Communication presented at the 13th Ibero-American Congress - CIBEM 2017. Lisbon, 23-26 October.
- Bernardo, M., Casadesus, M., Karapetrovic, S., & Heras, I. (2012). Do integration difficulties influence management system integration levels? *Journal of Cleaner Production*, 21(1), 23-33. doi.org/10.1016/j.jclepro.2011.09.008
- Bernardo, M., Gianni, M., Gotzamani, K., & Simon, A. (2017). Is there a common pattern to integrate multiple management systems? A comparative analysis between organizations in Greece and Spain. *Journal of Cleaner Production*, 151, 121-133. doi.org/10.1016/j.jclepro.2017.03.036
- Bernardo, M., Simon, A., Tarí, J. J., & Molina-Azorín, J. F. (2015). Benefits of management systems integration: A literature review. *Journal of Cleaner Production*, 94, 260-267. doi.org/10.1016/j.jclepro.2015.01.075
- Bravi, L., Murmura, F., & Santos, G. (2017). Attitudes and behaviours of Italian 3D prosumer in the Era of Additive Manufacturing. *Procedia Manufacturing*, 13, 980-986. doi.org/10.1016/j.promfg.2017.09.095
- BSI Group. (2016). *British Standards Institution*. OHSAS Standards and Certificates Survey 2011. Retrieved from www.bsigroup.com (accessed 2018.05.22).
- Cano, I., Alonso, A., Hernandez, C., Burgos, F., Garcia, A. B., Roldan, J., & Roca, J. (2015). An adaptive case management system to support integrated care services: Lessons learned from the NEXES project. *Journal of Biomedical Informatics*, 55, 11-22. doi.org/10.1016/j.jbi.2015.02.011
- Carvalho, F., Santos, G., & Gonçalves, J. (2018). The disclosure of information on sustainable development on the corporate website of the certified portuguese organizations. *International Journal for Quality Research*, 12(1), 253-276. doi - 10.18421/IJQR12.01-14
- Caskey, K. R. (2015). Competitive strategies for small manufacturers in high labor cost countries: Boutique ski manufacturers in the US. *Competitiveness Review*, 25(1), 25-49. doi.org/10.1108/CR-07-2013-0067
- Dalby, S. (2007). Regions, strategies and empire in the global war on terror. *Geopolitics*, 12(4), 586-606. doi.org/10.1080/14650040701546079

- Doiro, M., Fernández, F. J., Félix, M., & Santos, G. (2017). ERP-machining centre integration: a modular kitchen production case study. *Procedia Manufacturing*, 13, 1159-1166. doi.org/10.1016/j.promfg.2017.09.178
- Ghemawat, P. (2016). Evolving ideas about business strategy. *Business History Review*, 90(4), 727-749. doi.org/10.1017/S0007680516000702
- Gianni, M., & Gotzamani, K. (2015). Management systems integration: Lessons from an abandonment case. *Journal of Cleaner Production*, 86, 265-276. doi.org/10.1016/j.jclepro.2014.08.023
- Holton, I., Glass, J., & Price, A. D. F. (2010). Managing for sustainability : findings from four company case studies in the UK precast concrete industry. *Journal of Cleaner Production*, 18(2), 152-160. doi.org/10.1016/j.jclepro.2009.09.016
- ISO. (2018). *Develop and publish International Standards*. The International Organization for Standardization. Retrieved from www.iso.org (accessed 2018.05.22).
- Jupp, V. (2006). *The sage dictionary of social research methods*. London: Sage Publications Ltd.
- Kothari, C., & Garg, G. (2014). *Research methodology: methods and techniques*, 3rd ed. New Age.
- Lee, C. C. (2014). Development and evaluation of the many-to-many supplier negotiation strategy. *Computers & Industrial Engineering*, 70, 90-97. doi.org/10.1016/j.cie.2014.01.009
- Lunenburg, C. F. (2011). Leadership versus Management: A Key Distinction - At Least in Theory. *International Journal of Management, Business, and Administration*, 14(1), 1-4. Retrieved from [https://cs.anu.edu.au/courses/comp3120/local\\_docs/readings/Lunenburg\\_LeadershipVersusManagement.pdf](https://cs.anu.edu.au/courses/comp3120/local_docs/readings/Lunenburg_LeadershipVersusManagement.pdf)
- Magretta, J. (2012). Michael Porter answers managers FAQs. *Strategy & Leadership*, 40(2), 11-15. doi.org/10.1108/10878571211209305
- Marques, C., Lopes, N., Santos, G., Delgado, I., & Delgado, P. (2018). Improving operator evaluation skills for defect classification using training strategy supported by attribute agreement analysis. *Measurement*, 119, 129-141. doi.org/10.1016/j.measurement.2018.01.034
- Miles, P. C. (2013). Competitive strategy: the link between service characteristics and customer satisfaction. *International Journal of Quality and Service Sciences*, 5(4), 395-414. doi.org/10.1108/IJQSS-03-2013-0007
- Mintzberg, H., & Quinn, J. B. (2001). *O processo da estratégia*, 3rd ed. Porto Alegre, Bookman.
- Nunhes, T. V., Barbosa, L. C. F. M., & Oliveira, O. J. (2017). Identification and analysis of the elements and functions integrable in integrated management systems. *Journal of Cleaner Production*, 142, 3225-3235. doi.org/10.1016/j.jclepro.2016.10.147
- Nunhes, T. V., Motta, L. C. F., & Oliveira, O. J. (2016). Evolution of integrated management systems research on the Journal of Cleaner Production: Identification of contributions and gaps in the literature. *Journal of Cleaner Production*, 139, 1234-1244. doi.org/10.1016/j.jclepro.2016.08.159
- Oliveira, O. J. (2013). Guidelines for the integration of certifiable management systems in industrial companies. *Journal of Cleaner Production*, 57, 124-133. doi.org/10.1016/j.jclepro.2013.06.037
- Oreg, S. (2007). Personality, context, and resistance to organizational change. *European Journal of Work and Organizational Psychology*, 15, 73-101. doi: 10.1080/13594320500451247
- Parnell, J. A., Long, Z., & Lester, D. (2015). Competitive strategy, capabilities and uncertainty in small and medium sized enterprises (SMEs) in China and the United States. *Management Decision*, 53(2), 402-431. doi.org/10.1108/MD-04-2014-0222

- Peng, M. K., Wang, D. Y. L., & Jiang, Y. (2008). An institution-based view of international business strategy: a focus on emerging economies. *Journal of International Business Studies*, 39(5), 920-936. doi.org/10.1057/palgrave.jibs.8400377
- Rebelo, M. F., Santos, G., & Silva, R. (2016). Integration of management systems: towards a sustained success and development of organizations. *Journal of Cleaner Production*, 127, 96-111. doi.org/10.1016/j.jclepro.2016.04.011
- Rebelo, M. F., Santos, G., & Silva, R. (2014). Conception of a flexible integrator and lean model for integrated management systems. *Total Quality Management*, 25(6), 683-701. http://dx.doi.org/10.1080/14783363.2013.835616
- Rebelo, M. F., Silva, R., Santos, G., & Mendes, P. (2016). Model based integration of management systems (MSs)–case study. *The TQM Journal*, 28(6), 907-932. doi.org/10.1108/TQM-09-2014-0079
- Rebelo, M., Santos, G. & Silva, R. (2017). The integration of standardized management systems: managing business risk. *International Journal of Quality & Reliability Management*, 34(3), 395-405. doi.org/10.1108/IJQRM-11-2014-0170
- Ribeiro, F., Santos, G., Rebelo, M., & Silva, R. (2017). Integrated management systems: trends for Portugal in the 2025 horizon. *Procedia Manufacturing*, 13,1191-1198. doi.org/10.1016/j.promfg.2017.09.194
- Rosenzweig, E. D., Roth, A. V., & Dean Jr., J. W. (2003). The influence of an integration strategy on competitive capabilities and business performance: An exploratory study of consumer products manufacturers. *Journal of Operations Management*, 21(4), 437-456. doi.org/10.1016/S0272-6963(03)00037-8
- SAAS (2018). *Companies certified by SA8000*. Social Accountability Accreditation Services. Retrieved from www.saasaccreditation.org/certifacilitieslist (accessed 2018.05.23).
- Salavou, H. E. (2015). Competitive strategies and their shift to the future. *European Business Review*, 27(1), 80-99. doi.org/10.1108/EBR-04-2013-0073
- Santos, G., Mendes, F., & Barbosa, J. (2011). Certification and integration of management systems: The experience of Portuguese small and medium enterprises. *Journal of Cleaner Production*, 19(17-18), 1965-1974. doi:10.1016/j.jclepro.2011.06.017
- Santos, D., Ferreira Rebelo, M., Doiro, M., & Santos, G. (2017). The integration of certified Management Systems. Case study - organizations located at the district of Braga, Portugal. *Procedia Manufacturing*, 13, 964-971. doi.org/10.1016/j.promfg.2017.09.168
- Santos, G., Rebelo, M., Barros, S., Silva, R., Pereira, M., & Lopes, N. (2014). Developments regarding the integration of the occupational safety and health with quality and environment management systems. In Kavouras, I.G. & Chalbot, M.C.G. *Occupational Safety and Health* (pp.113-146). New York: Nova Science. ISBN 978-1-63117-698-2.
- Santos, G., Afonseca, J., Lopes, N., Félix, M.J., & Murmura, F. (2018a). Critical success factors in the management of ideas as an essential component of innovation and business excellence. *International Journal of Quality and Service Sciences*, 10(3), 214-232. doi: 10.1108/IJQSS-05-2017-0051
- Santos, G., Bravi, L., & Murmura, F. (2018b). SA 8000 as a tool for a Sustainable development strategy. *Corporate Social Responsibility and Environmental Management*, 25, 95-105. doi: 10.1002/csr.1442
- Santos, G., Murmura, F., & Bravi, L. (2018c). Fabrication laboratories - the development of new business models with new digital technologies. *Journal of Manufacturing Technology Management*, 29(8), 1332-1357. doi.org/10.1108/JMTM-03-2018-0072

- Santos, G., Rebelo, M., Lopes, N., Alves, M. R., & Silva, R. (2016). Implementing and certifying ISO 14001 in Portugal: motives, difficulties and benefits after ISO 9001 certification. *Total Quality Management and Business Excellence*, 27(11), 1211-1223. doi: 10.1080/14783363.2015.1065176
- Santos, G., & Barbosa, J. (2006). QUALIFOUND – a modular tool developed for quality improvement in foundries. *Journal of Manufacturing Technology Management*, 17(3), 351-362. doi:10.1108/17410380610648308
- Santos-Vijande, M. L., Sanchez, J. A. L., & Trespalacios, J. A. (2012). How organizational learning affects a firm's flexibility, competitive strategy, and performance. *Journal of Business Research*, 65, 1079-1089. doi.org/10.1016/j.jbusres.2011.09.002
- Schaltegger, S., Lüdeke-Freund, F., & Hansen, E. G. (2012). Business cases for sustainability: the role of business model innovation for corporate sustainability. *International Journal of Innovation and Sustainable Development*, 6(2), 95-119. Retrieved from <https://ssrn.com/abstract=2010510>
- Schein, E. H. (2009). *Cultura Organizacional e Liderança*, 3rd ed. São Paulo: Atlas.
- Scopus (2018). Retrieved from <http://www.scopus.com> (accessed 2018.07.29).
- Simon, A., Karapetrovic, S. & Casadesús, M. (2012). Difficulties and benefits of integrated management systems. *Industrial Management & Data Systems*, 112(5), 828-846. doi.org/10.1108/02635571211232406
- Simon, A., Yaya, L. H. P., Karapetrovic, S., & Casadesús, M. (2014). An empirical analysis of the integration of internal and external management system audits. *Journal of Cleaner Production*, 66, 499-506. doi.org/10.1016/j.jclepro.2013.11.020
- Tansey, P., Spillane, J. P., & Meng, X. (2014). Linking response strategies adopted by construction firms during the 2007 economic recession to Porter's generic strategies. *Construction Management and Economics*, 32(7-8), 705-724. doi.org/10.1080/01446193.2014.933856
- Teece, D. J. (2010). Business models, business strategy and innovation. *Long Range Planning*, 43(3), 172-194. doi.org/10.1016/j.lrp.2009.07.003
- Thomas, R., Sargent, L. D., & Hardy, C. (2011). Managing Organizational Change: Negotiating Meaning and Power-Resistance Relations. *Organization Science*, 22, 22-41. doi.org/10.1287/orsc.1090.0520
- Web of Science. (2018). Retrieved from <http://www.webofscience.com> (accessed 2018.08.09).
- Wening, S. K., & Refflinghaus, R. (2015). Integrating sustainability aspects into an integrated management system. *The TQM Journal*, 27(3), 303-315. doi.org/10.1108/TQM-12-2013-0128
- Zeng, S. X., Shi, J. J., & Lou, G. X. (2007). A synergetic model for implementing an integrated management system: an empirical study in China. *Journal of Cleaner Production*, 15, 1760-1767. doi.org/10.1016/j.jclepro.2006.03.007
- Zhang, Y. (2015). Designing a retail store network with strategic pricing in a competitive environment original. *International Journal of Production Economics*, 159, 265-273. <http://dx.doi.org/10.1016/j.ijpe.2014.09.013>
- Zott, C., & Amit, R. (2008). The fit between product market strategy and business model: implications for firm performance. *Strategic Management Journal*, 29(1), 1-26. doi: 10.1002/smj.642

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