

COMPETITIVE INTELLIGENCE: SYSTEMIC MODEL PROPOSAL FOR ORGANIZATIONAL CHANGE FOR HOSPITALS IN SOUTHERN BRAZIL

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SUMMARY

The success of an organization depends increasingly on its business strategy. A structural component of the strategy is the fitting between their primary activities and support activities. And as in industry, in a hospital, a new strategy to be implemented in general involves reviewing business processes or introduce new ways to run the operations of the company. However, organizations that have problems of alienation between the business strategy with its Information Technology infrastructure will have difficulties to implement a systemic model of the competitive intelligence process. It is believed that the private hospital sector has problems of synchronization between the business strategy with information technology infrastructure. Therefore, one can question: A systemic model of Competitive Intelligence for the private hospital sector can be a conceptual model of the change process, liable to be implemented in this type of organization? The main objective of this research is to propose a systemic model of Competitive Intelligence process version 2 in private hospitals in the southern region of Brazil.

KEYWORDS: Competitive Intelligence; Information Systems; Information Technology; Strategy.

INTRODUCTION

Global competitiveness requires organizations to evaluate the strategies by which it operates. Either through the address to search for new markets, mergers and acquisitions, to launch new products, training and strategic issues for the establishment of new distribution channels. All these movements seek to determine the best way to guarantee results, financial or market share. There is no doubt that the organizations, post-globalization, are giving more importance to the term strategy, therefore focusing study efforts on this issue.

Porter (1996) defines strategy "as the creation of a unique and valuable position, involving a range of different activities and the essence of this strategic position is to choose activities that are different from the competition." [Porter, 1996, p. 64]⁽¹⁾.

However, Porter (1996), sustains that to choose a unique position, is not sufficient to guarantee a sustainable advantage. That is, a valuable position will attract the imitation of stakeholders, Who Will probably do it one way or another. In other words, the success of a strategy depends on doing many activities well, creating adjustments between them. When there is no adjustments between activities, there is different strategy, g there being little sustentation. But this process of constant adjustments between activities drives organizations to confuse operational effectiveness (OE) with strategy. And according to Porter (1996) this confusion is a serious mistake, both are essential for the superior performance of an organization, but act in different ways.

Operational efficiency, according to Porter (1999), means to play similar activities better than the competition. Operational efficiency includes the efficiency, but is not limited to it. It refers to any practice that allows a company to better utilize its inputs, reducing defects in products or developing better products faster, for example. On the other hand, strategic positioning means that an enterprise perform different activities than the competition or performs the same activities in different ways.

Therefore, one can establish that the operational effectiveness depends on the strategy, but an organization that has better defined the strategic positioning will find barriers which will prevent the implementation of its strategy if it does not achieve operational efficiency.

One observes then the following problem: a new strategy to be implemented generally involves reviewing business processes or introduce new ways to run the operations of the company. These and new processes, at the same time require data or information so that they may be performed, accompanied and evaluated, in order to verify whether the planned strategy is working and brings the desired results. When processes are changed, it is likely that the company's organizational structure is altered, creating new areas, merge of areas, use of third parties and others. Therefore, it is necessary to have well defined the resources which must be available to support the new strategies, where in the information era, technology must be present.

The private hospital sector in Brazil has the same problems in implementing new strategies as an industry organization, it also seeks profits to maintain itself in the market. Health plans are during the last years revising the financial resources inferior to the values of these hospital bills, demanding more control and management tools to stay in the market. And as in industry, in a hospital a new strategy to be implemented, generally involves reviewing business processes or introducing new ways to run the operations of the company.

But no one can say that by achieving synchronization between business strategy and infrastructure, an organization has met all the requirements to implement a change process induced by a system of competitive intelligence. It is likely, however, that this synchronism of the organization the opportunity to incorporate the competitive intelligence process and allow one to begin the change process.

The changes can not occur at random, under penalty of becoming in conflict. Thus, it is rational to think that a change to have its desired effects have to be planned and transformational goals clearly defined. It is also easier to reach the objectives of a change, which its planning model obeys, a model, process or method. Riccardi and Rodrigues' (2003), IC system inducing organizational changes, presents a conceptual model of the change process, which appears to be

rational enough and liable to be implemented in the organizations, called by the authors Systemic Model of Competitive Intelligence Process – MOSIPIC.

However, organizations that have problems of alienation between the business strategy with their TI infrastructure will have difficulties to implement the MOSIPIC, because it is essential that there be this alienation. Then, the proposed improvement of the model is justifiable. The MOSIPIC II needs to be tested and the hospital segment has features in their environment appropriate for this test.

It is believed that the private hospital sector has problems of synchronization between the business strategy with TI infrastructure. Therefore, it is questionable: A systemic model of CI for the private hospital sector can be a conceptual model of the change process, liable to be implemented in this type of organization?

The items in the systemic model of IC to be proposed must provide verification of the operational effectiveness or ineffectiveness for the implementation of a strategic positioning. It is assumed, thus that the systemic model of IC to be proposed should serve as an inducer of organizational changes.

The development of this research, has the following general objective: To propose a systemic model of Competitive Intelligence process version 2 - MOSIPIC II in private hospitals in the southern region of Brazil. To meet this general goal it will be necessary to achieve the following specific objectives: to verify the conditions of the organizational environment of the private hospital sector in southern Brazil, to evaluate the preconditions for operation of a systemic model of IC in the private hospital segment of the southern region of Brazil, to characterize the organizational environment of the private hospital segment of the southern region of Brazil, to implement of the proposed systemic model of IC.

DEVELOPMENT

The E-business as help in Competitive Intelligence to Private Hospitals

Innovative organizations are beginning to automate, organize, standardize and stabilize the services offered to create and maintain sustainable intermediate relationships mediated by computers throughout the life cycle of an e-business.

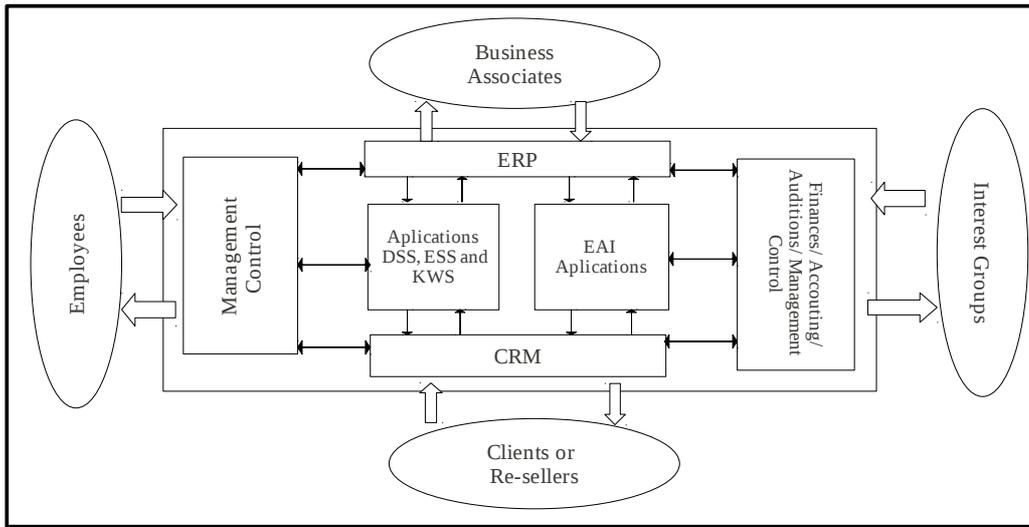
Kalakota and Robinson (2002) mention that in addition to include e-commerce, e-business includes business contact and rear ones which are the main mechanism of modern business. Not just about buying and selling transactions over the Internet or other electronic network, it is a global strategy of redefining old business models, with the help of technology, to maximize customer value and profits. In short, according to the authors, e-business is any business transaction made through an electronic channel.

1.1 The e-business infrastructure

The draft e-business and application architecture become central issues in board meetings as more companies integrate applications to streamline operations and enter the competition of electronic commerce.

Kalakota and Robinson (2002) recommend to unite isolated applications on a cohesive architecture is the central process of the implementation of e-business. Modern business projects are built with well-integrated modular blocks called enterprise applications, which provide a model platform for applications such as Enterprise Resource Planning or Enterprise resource Planning (ERP or Customer Relationship Management (CRM). According to Kalakota and Robinson (2002), these business applications are the backbone of modern business. Figure 1 illustrates how the different applications are integrated to form the model of e-business venture. Between CRM and ERP there are the support systems Mananger Information System (MIS), Decision Suport System (DSS), Executive Suport System (ESS), Knowledge Worker System (KWS) and Enterprise Application Information (EAI).

Figure 1 - Infrastructure for e-business applications



Source: KALAKOTA, Ravi; ROBINSON, Márci

a. E-business: estratégias para alcançar o sucesso do mundo digital. 2ª Ed. Porto Alegre: Bookman, 2002

According to Kalakota and Robinson (2002) CRM applications are the front line of the e-business and ERP applications are the rear. And the demand of these large application structures provided the rental market growth of these, the Application Service Provider (ASP), which in recent years became an alternative for the organizations.

TI in competitive intelligence

The effective management of an organization requires objective and accurate perception of the values of information and information systems and is undoubtedly a crucial contribution of Information Technology as a tool in this context.

Rezende and Abreu (2001) agree with Laudon and Laudon (1994) defining TI as computer and technology resources for generation and use of information, based on components: hardware and devices and peripherals, software and their resources, telecommunications systems and data management and information.

For Tapscott and Caston (1995), the scenario changes and fierce competition, the TI is identified as one of the main tools to be used to gain quality and productivity.

Rodrigues (2003) highlights that the synergy between technology and business is the key to success. Consequently, according to Walton (1994), the need for formal organizational design and

TI reflects all the components of the strategy in a combined and integrated way, making models of organizational behavior. All looking for business results and welfare of the people.

The first important aspect to highlight is the relationship between organizational design and TI, according to the systemic approach. On this approach Senge (1999) argues that systemic thinking is the discipline that enables vision of all. It is a reference table to see interrelationships rather than events, to see patterns of change rather than snapshots. Walton (1994) relates seven ways in which TI can interact with the organization.

The second point to note, are the critical aspects of organizational behavior. Senge (1999), referring to the core principles of systemic thinking says the behavior is influenced by the structure and political resistance. According to the author, the structure involves the ability to influence reality by controlling the behavior and resistance to policies involves efforts to manipulate behavior. Thus, Walton (1994) highlights the need to provide and promote the model of commitment and competence necessary to achieve business results. Therefore, all reinforces the idea that the implementation of TI requires human resource practices to cause a spontaneous high level of commitment, provide conditions for the development of cognitive skills and conditions for the development of systemic thinking.

Addressing the impact that TI brings to the organizations and especially the involvement of human factors, reinforce Davenport's (2001) concern where it is noteworthy that information technology can be an essential factor to improve use of information, but may be just another cost to the company, if the quality and relevance of this information are not considered and their respective users.

1.2 Dynamic Synchronism of TI infrastructure with business strategy in organizations

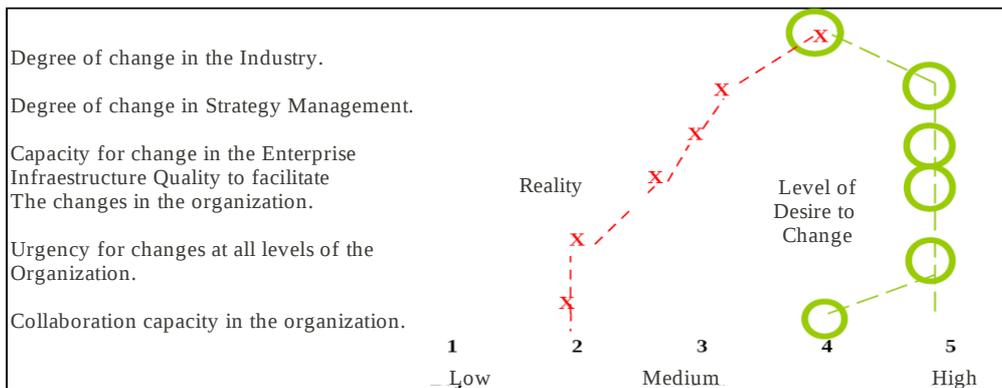
The organizations are in constant search of synchronization of strategy and information technology because they know they will gain competitive advantage. But it is a challenge that few have managed to overcome so far.

For Prahalad and Krishnan (2002), companies like Cemex, Keebler, Amazon and GE Lighting, paid attention to create new capabilities of their information infrastructure. Consequently,

they did not simply align TI with business strategy, but made TI to integrate IT as part of the strategy. "This is a continuous and dynamic synchronization of intrinsic competences in information infrastructure and the requirement of the strategy." [In Prahalad and Krishnan, 2002, p. 26]⁽²⁾.

Prahalad and Krishnan (2002) worked with over 500 senior executives of large companies for 4 years in the United States. They asked groups of 25 to 30 managers, focused on each business, to answer a set of questions about their ability to drive change within their companies. The managers indicated that the quality of TI infrastructure in their companies are behind their needs and desires change and are, in some categories, an impediment to make changes. Table 1 below, you can see the results of the survey.

Figure 2 - Overview of business managers of the ability of TI infrastructure



Source: Prahalad, C. K. KRISHNAN M. S. The Dynamic Synchronization of Strategy and Information Technology. MIT Sloan Management Review, v. 43, n. 4, p. 24-33, 2002

It is observed that there is a big gap between reality and the desire for change among managers who responded to the survey.

For this distance to be decreased, Prahalad and Krishnan (2002) state that "to understand the capabilities, constraints and risks in their information infrastructures, business managers and TI managers need a common working structure" [in Prahalad and Krishnan, 2002, p. 29]⁽³⁾.

And even suggest 6 critical issues to be analyzed, listed below: What is the rule of the applications in the strategy?; Are the business processes known?; How much do these applications cost to be altered?: Where to develop the applications sources?; What is the nature of the data?, What is the quality of the problems?

According to Prahalad and Krishnan (2002), companies that meet these issues and develop a list of application infrastructures will be able to handle the distance between efficiency and innovation.

The organizations that have not incorporated this process of synchronization in their culture will need to have some tools to begin this process as planned. Some of these instruments are presented in the sequence.

1.2.1 Sincronization Measuring of the TI Infrastructure with Business Strategy

Fernandez (2004) contributes with greater pragmatism than Prahalad and Krishnan (2002), and proposes a data collection instrument to measure the synchronization of the TI infrastructure with business strategy in the organizations.

The instrument is based on the Likert scale of 1 to 5, where 5 = fully agree, 4 = agree, but not totally, 3 = Neutral, 2 = I disagree, but not entirely, 1 = I disagree completely.

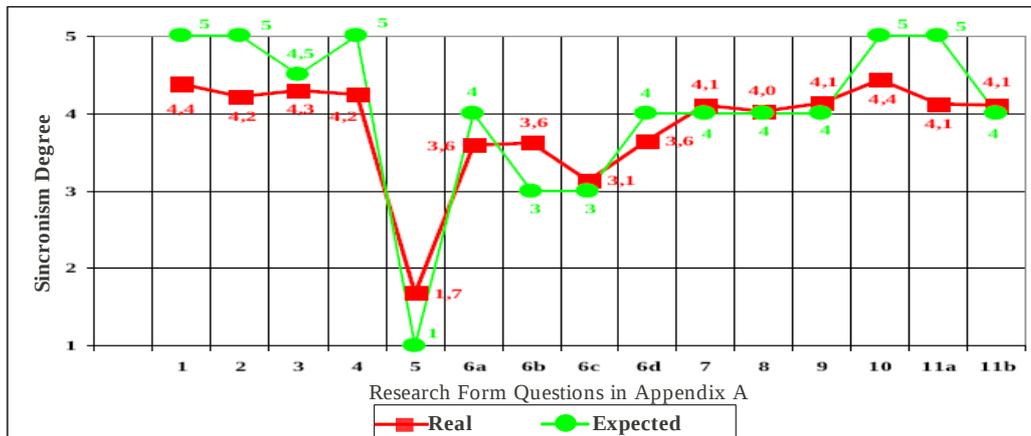
Responses based on the Likert scale will determine the degree of real sync, the result of the equation as follows:

$$\text{"Real level} = (((\text{responses to alternative 1}) \times 1) + ((\text{responses to Alternative 2}) \times 2) + ((\text{alternative responses 3}) \times 3) + ((\text{alternative responses 4}) \times 4) + ((\text{responses of the alternative 5}) \times 5)) / \text{total number of responses} \text{" . [in Fernandez, 2004, p.103] }^{(4)}.$$

Getting the actual level of synchronization, this is compared to the expected degree of synchronization. As expected the degree of synchronization is determined arbitrarily before the measurement, this can be altered according to the time the measurement is performed, but given the scale of 1 to 5, the degree of synchronization was proposed considering the minimum acceptable for each item of data collection instrument in organizations seeking high performance.

The output generated is shown in Graphic 1, which in the example below shows a good alignment of the TI infrastructure with the Business Strategy.

Graphic 1 - Example where business strategy and IT infrastructure of an organization are aligned



Source: FERNANDEZ, Marcelo Jorge. Inteligência Competitiva e Mudança Organizacional: uma validação de modelo em grupo industrial. 2004 Dissertação (Mestrado em Administração) - Universidade Regional de Blumenau. Blumenau, 2004

Competitive Intelligence

The concept of competitive intelligence - has its focus on the monitoring of information outside the organization, allied to technical data analysis strategies based on intelligence services- it is raised permanently, as indicated by the sources consulted, as from the end of the 80s in the United States. In the 90s there is a great boost for the spread of this concept, especially by American writers who came out of the national intelligence services and formed large international consultancies.

Considerations on monitoring the external environment began long before the current concept of competitive intelligence, as we learn in the literature. Porter (1985) points out that a number of activities must be performed correctly to obtain competitive advantages from a global competitive strategy. This strategy, referred to above, must identify the five competitive forces that are in the external environment: the entry of new competitors, the threat of substitutes, the bargaining power of buyers, the bargaining power of suppliers, the rivalry between existing competitors.

Therefore, one must stress the importance of competitive strategy in enterprises, where Porter (1986) mentions that competitive analysis is so important not only in formulating business strategies, but also in finance, marketing, market analysis and many other areas of the company.

In essence, if the strategic concepts are to play an effective role in determining the growth

and survival of a company, then these concepts must be realigned, using an approach that emphasizes the basics of the combative nature of the current business environment conditions. Given the competitive nature of market constraints, a posture of attack and defense requires a business strategy similar to the military strategy. In this situation, a strategic tool of analysis is of course essential, Competitive Intelligence.

Finally, Riccardi and Rodrigues (2003) provide an important contribution to understanding the competitive intelligence "It is understood as a pragmatic system of collection, analysis and dissemination on the activities of competitors and business trends in order to ensure consistency with the objectives of the company. "[In Riccardi and Rodrigues, 2003, p. 186]⁽⁵⁾.

1.3 Competitive intelligence in the enterprises

Companies are now faced with the need to choose strategies to stop an attack on their products or services and on the other hand, choose strategies to attack their competitors.

For Suave (2003), competitive intelligence is used by companies in a collective and voluntary process through which they actively seek and assimilate the information in anticipation of changes related to their socio-economic development. It is a true process of waking, made within the objective of creating business opportunities and reducing risks associated with uncertainties.

It is important to note that the purpose of competitive intelligence is not to look for trends, but Yes, you reach the ability to foresee what will become a trend in the near future.

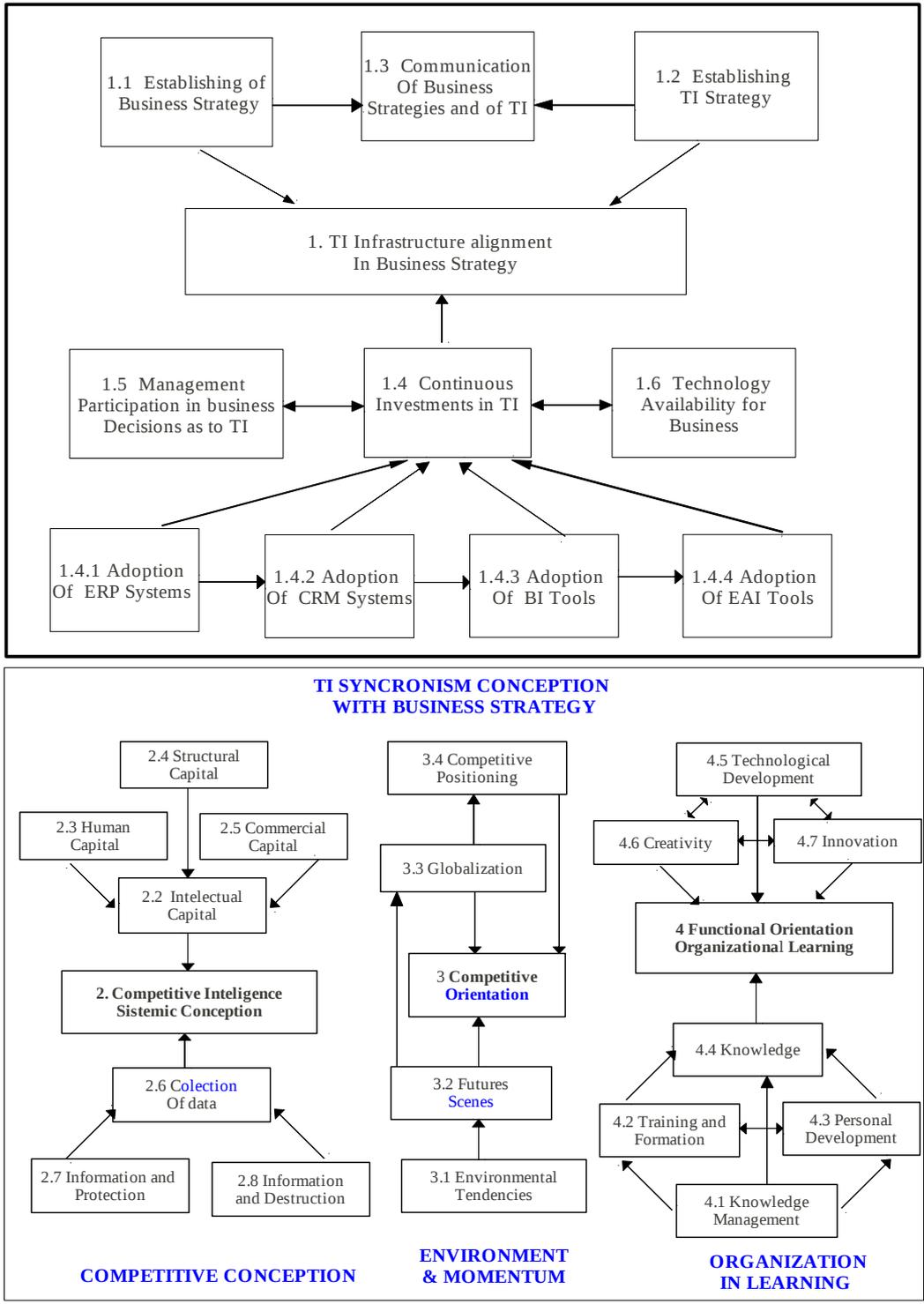
Riccardi and Rodrigues (2003) propose a systemic model of the competitive intelligence process, the MOSIPIC, divided into 3 stages and 8 phases.

But the implementation of this model is not recommended for organizations that do not have the synchronization between the business strategy with TI infrastructure. The application of this original model can generate frustrating results in organizations with the characteristics mentioned above, because there is no stage or phase reserved for preparing or to guide the organization to achieve this synchronization. In this direction, the need to evolve the model and propose MOSIPIC II is welcome.

1.3.1 The MOSIPIC II model

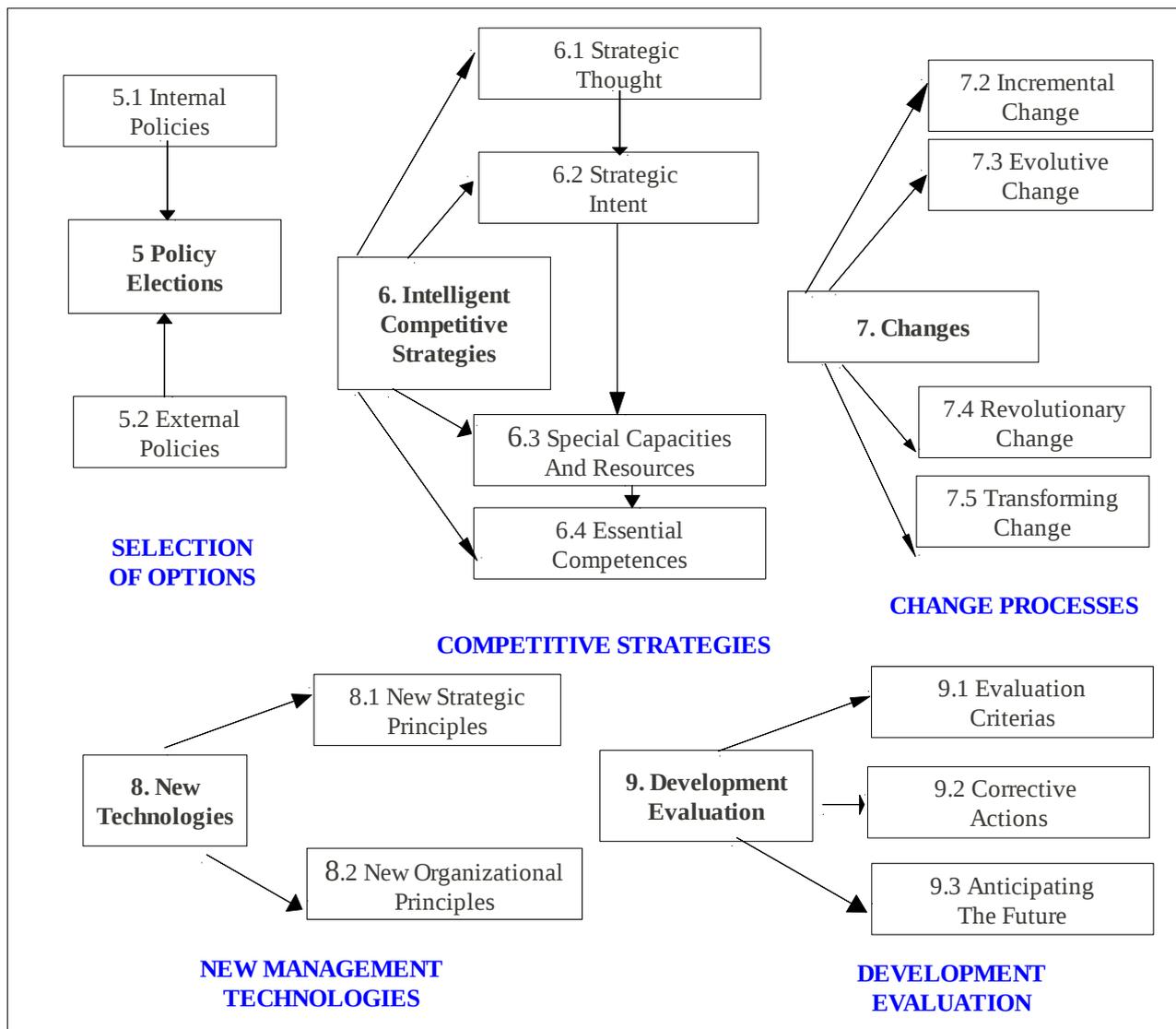
To discourse on MOSIPIC II it will be used as support the schematic model of MOSIPIC II presented below in Figures 3 and 4.

Figure 3 - Schematic sketch of MOSIPIC II (Part 1)



Source: Own Elaboration

Figure 4 - Schematic Model of MOSIPIC II (Part 2)



Source: Own Elaboration

Method, analysis and interpretation of research results in private hospitals in southern Brazil

The research is characterized as quantitative of statistical descriptive style. Quantative because the statistical technique similar to that used for the analysis of data from the preliminary research for the formulation of the budget. And descriptive, for using a measurement method to verify the budget through non-manipulated variables represented by the issues listed in the questionnaires.

The population used for the conduct of research is constituted by private general hospitals

in the southern region of Brazil, comprising the provinces of Parana, Santa Catarina and Rio Grande do Sul. According to DATASUS (2008) there are 93 general hospitals in Santa Catarina, 232 in Paraná and 90 in Rio Grande do Sul, totaling 415 general hospitals in the southern region of Brazil.

The instrument of data collection was a questionnaire with closed questions, whose flexibility assessment requirements using Likert's scale. The questionnaire was organized and structured from the theoretical framework.

Data were collected through the questionnaire that was delivered by e-mail through a site specializing in carrying out research, www.suapesquisa.com.br. The mailing service was contracted where e-mail list is loaded by the upload process. By the mailing management tool it is possible to control sending the e-mails and to know who in the list has not answered. 8 e-mails were sent for a period of 2 months to get 36 complete responses.

The e-mails were available to a distributor of health products which for ethical issues its name will not be disclosed. Upon receiving the e-mail with the proper presentation of the researcher, the Hospital was directed by the link www.suapesquisa.com.br/doutoradounam the research form. As each one of the 36 hospitals answered the research form, data were stored in the database extraction site for future results.

The analysis was based on questionnaire data from research through statistical technique percentage of the responses by the scale of each issue, represented graphically, with the intention of verifying adherence of the MOSIPIC II in health institutions in southern provinces of Brazil.

It should be considered that only 2 hospitals participated in the survey in cities with more than 300,000 inhabitants in southern Brazil. It is natural that hospitals in these cities are larger, with more infrastructure resources, management and more complex processes. If more large hospitals had participated in the research results could have been different.

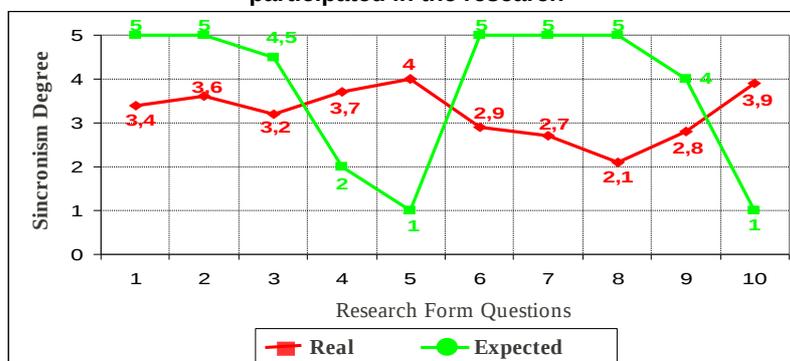
Therefore, future research where these hospitals can come to participate, shall require researcher care in eventual comparisons with this research.

1.4 Analysis and interpretation of results

As proposed in the objectives, this research seeks to determine, in essence, if in fact the Systemic Model of Competitive Intelligence Process version 2 - MOSIPIC II can be used as an agent of organizational change in private hospitals in the southern region of Brazil. The main relevance of this validation comes from the need to confront the model in an environment that believes in the absence of synchronizing business strategy with TI infrastructure. To achieve the overall objective of this article, it is necessary to do an analysis of each stage to identify the profile of adherence to MOSIPIC II, validating their premises.

Phase 1 is the data source to map the degree of synchrony in these organizations. Figure 3 shows clearly the non-synchronism. Based on each issue of Phase 1 of the model determined the expected degree of synchronization, represented by the green line and red line was drawn with data collected from the environment.

Graphic 2 - Degree of synchronization between TI infrastructure and business strategy in the hospitals that participated in the research



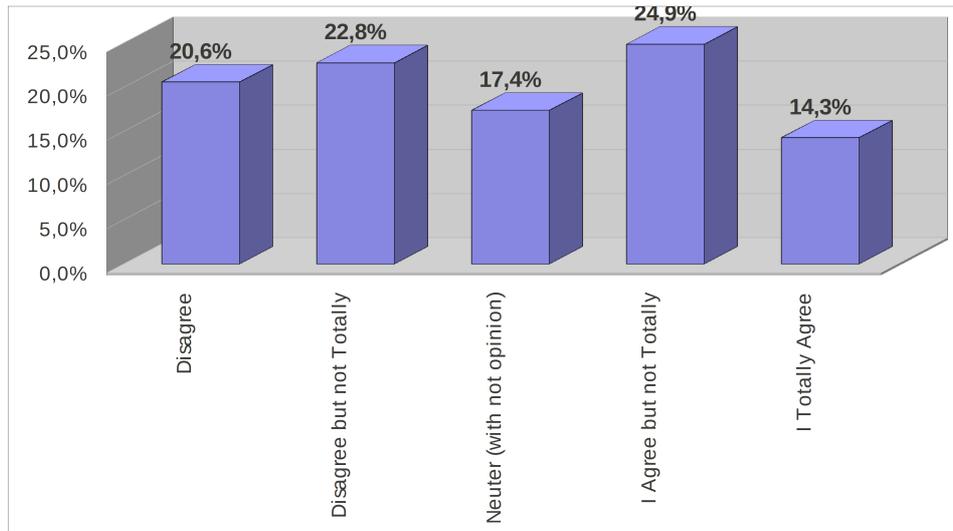
Source: Own Elaboration

Graphic 2 also highlights the opportunity that these organizations have to align their TI infrastructure to their business strategy and MOSIPIC II as a mentor can help in this process.

The consequence of this not sync registration will be the finding that the MOSIPIC II will not record a good grip on various of its phases and their orienting references can be a model guiding the process of change in the organizations researched.

In Graphic 3, we can see that most respondents did not find the elements at this stage in their organizations, even without considering the neutral.

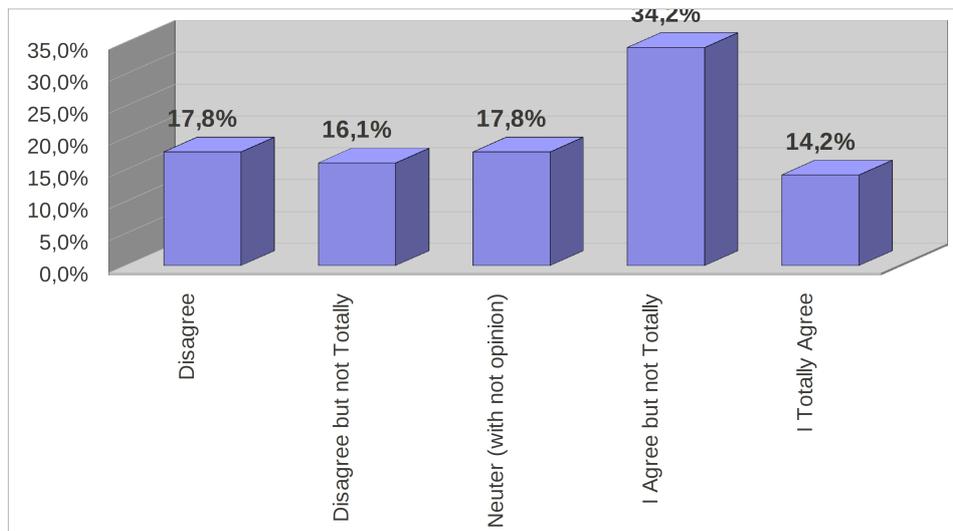
Graphic 3 - Adherence of hospitals in the south region at Stage I MOSIPICII



Source: Own Elaboration

Phase II of MOSIPIC II records that the majority of respondents agree that the elements at this stage are represented in their organizations, as shown in figure 5. There is a total of agreement 48.4% against a total of 33.9% that disagree, but with a high percentage of neutral. This difference in perception regarding Stage I to Stage II may mean that the majority of the respondents admit that their organizations do not possess the requirements for the systemic conception of the model.

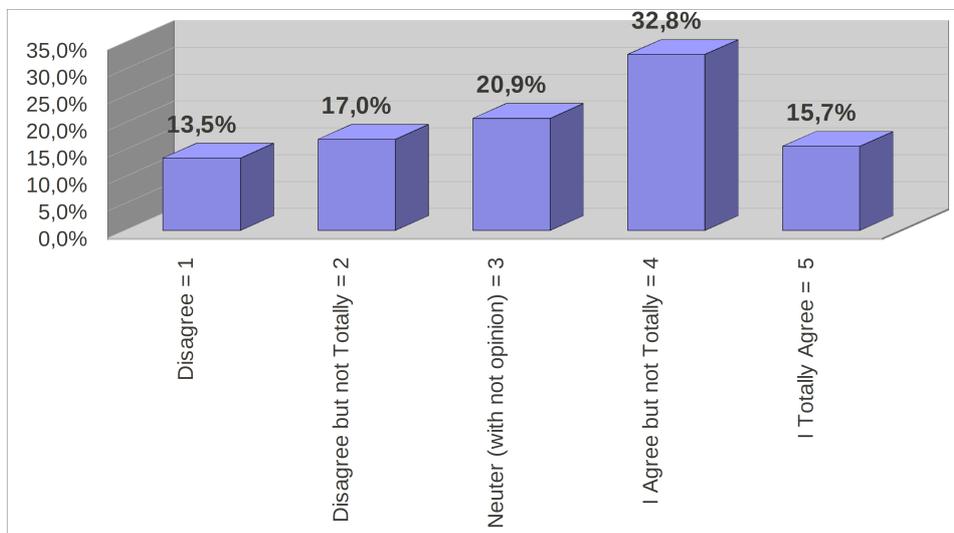
Graphic 4 - Adherence of hospitals in the region south to MOSIPIC II STAGE II



Source: Own Elaboration

Phase III of MOSIPIC II also records that the majority of respondents agree that the elements in this stage are represented in their organizations, as shown by Figure 7. There is a total of 48.5% against 30.5% which do not agree, but with a percentage of neutral representative. This shows an analogy with Stage II, which makes sense because if the majority agrees that there is any change process, this majority also sees the introduction of new technologies for more efficient management in their organizations.

Graphic 5 - Adherence of hospitals in the south region to Stage III of MOSIPICII



Source: Own Elaboration

CONCLUSIONS

The conclusions from the research are presented below, directed by the specific objectives described in the introduction to this paper.

The first objective was to verify the organizational environmental conditions of the private hospital segment in southern Brazil. This objective was reached based on the results presented, which showed a segment which is in transformation and needs help in the change process. These hospital organizations presented an organizational environment with little structure to sustain a change process to carry out modifications in the strategic and organizing principles. This structure is composed by Stage I of the MOSIPIC II, with the function of providing a sustentation with a

effective change process. The data gathered presented high percentages of persons in the organizations researched, which did not agree that in their organizations, the elements of Stage I of the MOSIPIC II, were identified. They even tried to implement changes in their strategic principles, subtly perceived in the data gathered by Stages II and III, but without the support of the structure of the Building Stage, they are not able to consolidate the change process.

The second objective was to evaluate the operation's preliminary conditions in a systemic model, in the private hospital segment in Brazil's southern region. This objective was reached according to the results presented, which showed preliminary conditions not ideal for the MOSIPIC II operation. The conclusion that these organizations do not present good model preliminary operation conditions, is a consequence of the data gathered in the Building Stage, which gathers the necessary elements to sustain the MOSIPIC II operation.

The justification of the lack of ideal conditions to operate MOSIPIC II, is answered practically by the previous paragraph, when describing on the first objective, e. g. the lack of elements contained in Stage I. However, it is also the implementation of these elements which will generate the preliminary conditions for the model operation. Initially it is in this Stage, in which one must concentrate the efforts, and only after its consolidation, one must advance to Stages II and III.

The third objective was to characterize the organizational environment of the private hospital segment of southern Brazil, for the implementation of MOSIPIC II. This objective was reached according to the results presented, and showed in the analysis and interpretation chapter of the results, the organizational environment characteristics of the researched hospitals. One must comment that the data gathered, as to Stages II and III, subtly presented that the organizational environment of the hospital of southern Brazil, presents good intentions for carrying out a change process, which permit the application of new management technologies, more efficient, but as described beforehand, the lack of an infrastructure, does not permit the consolidation of this process. It is important also to comment that, the researched organizations confirm the belief that they present sync problems between business strategy and IT infrastructure and that MOSIPIC II, possesses elements to help these organizations to conquer this sync. Therefore it is possible to verify that in the researched organizations there is the need of implementing the required elements

to sustain the change process, contained in Building Stage of MOSIPIC II.

In general one can conclude that the MOSIPIC II, presents the elements which characterize the structural change process, in this kind of organization, carried out by process systemic induction, of competitive intelligence. The MOSIPIC II, if adopted as guideline, can accelerate the change process, and can serve as evaluator of this processes effectiveness. Thus the MOSIPIC II, as systemic representative of the organizational change process, and corporative competitive inductor, may be considered valid under the organikzational conditions of the private hospitals in southern Brazil, thus confirming what was pre-supposed in the research.

It is believed that the MOSIPIC II, presents elements which would function as inductors of the change process of any organization, but more model tests are needed in other market segments. Together, the first and second MOSIPIC, have already been tested, in the private industrial segment, and in the private health segment, however, many tests are still necessary, to consider this systemic modelo of competitive intelligence process, as a generic model.

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