

## INFORMATION SYSTEMS AND COMPETITIVE INTELLIGENCE.

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### ABSTRACT

This research project seeks to research the companies that possess or they are thinking about using the methodology of Strategic Information System for the Operational Management based on the Data Warehouse philosophy for Business area. Parallel a system will be developed computerized based on Data Warehouse philosophy and Data Webhouse. This research consists of verifying the viability of the use of this methodology, so much in the area of Systems of Information as well as a market differential of those companies, as competitive intelligence.). With the accomplishment of this project, it is also intended, make it available a free portal (Portal of the Citizenship) with the information partner economical (of the country, state and area), of information of the defenses of the monographs of the Programs of Masters degree in level of Master's degree (Regional Development, Administration of Businesses, Managerial Accounting and Computer science - of Information Systems) and of the contained information of the project PROTEUS allocated in the University / of Social Research Institute (IPS).

**Key Words:** Information Technology, Strategic, Competitiveness, Systems developers,

### INTRODUCTION

Today the competitiveness of a company is determined by the quality of their resources, for the knowledge that is capable to produce and for the capacity to apply the science, technology and knowledge more and more in the production of goods and services efficient, and it is in this stage that the Administration of the Knowledge and the Competitive Intelligence create the differential for this to be possible.

Definitively, the form of the company to behave before the great oscillations of the market and the contestants that multiply and they are more competitive should be reviewed. It is not possible in this evolutionary and more demanding market every day that a company gets competitive advantages without he/she has appropriate and effective systems of information to adapt to the speed with that the changes happen, demanding that the information are practically in 'real time'.

The companies that look for to be competitive are not more looking for only controls of costs or analyze

financial, but processes that show to her in a fast and effective way, information on the market, their contestants and of itself own, for us to have a safe and strategic vision of the market in that it acts.

This practice is necessary, since the global atmosphere and the technological progresses are provoking constant changes in the competitive atmosphere, and this adapts of uncertainty hinders the to take of organization decisions.

That addressed economy and based on the information and in the knowledge it generated the need of the markets obtain evaluation systems and distribution of the corporate information to behave so that they simplify and activate his/her transfer. With that the company stops and it uses the information in a strategic way to improve his quality and competitiveness, and creating an administration of technological innovation, instruments for to take a decisions and still to join value a function of the information for the fact that with her it is possible to obtain safe and concrete business actions, basing on the information and knowledge that they are collected, and soon afterwards converted in applicable knowledge to the organizational objectives and will be available for the sections where can be highly taken advantage. The information should be collected and reviewed to who are really necessary, but creating a conscience that all of the members of the organization must understand her/it in an integral way so that they can act from way to think in all the other involved processes, generating like this an integration and rationalization of the work, that it is very favorable there is improvement of the business administration.

The data of an organization are sources of competitive advantage. We know that all of the organizations possess data internal and even external, then naturally we could think that all of them possess competitiveness, but of anything they are worth these data if they be not transformed in information and knowledge, for soon afterwards if they turn Competitive Intelligence through own systems for his/her generation and of a team qualified to apply her/it in the best way in relationship a organization, if this transformation doesn't happen, they didn't pass amongst themselves of data without relationships and without usefulness.

A competitive advantage is reached by the organization through a good competitive strategy, that according to Porter [1] it is to the search of a favorable competitive position in an industry, and it seeks to establish a lucrative and maintainable position against the forces that determine the competition of the it elaborates.

Those competitive advantages are conquered through the Competitive Intelligence related with the use of technologies that you/they get to analyze and to provide the information for the company.

The "Knowledge Administration" is the process for which the organization generates wealth, starting from his/her knowledge or intellectual " capital. This process for a company consists of leaving of being a simple supplier of goods and services to turn an organization to already generate information and knowledge through the articulation, sharing and transfer of knowledge existent and what goes hereafter acquired. With that her then raisins becoming dominant of a rich fan of information so that she can act in a more effective way in the resolution of problems, creation of new goods and services and more it holds in take of decisions before the competitive in scenery. To develop this theory in the organization becomes an essential point, since the effective and applicable knowledge if it turns the middle of competing, or even surviving in the world of the businesses[2].

Interpreting Morais [3] in is book " Competitive Intelligence on the collection of Published " Information, defined Competitive Intelligence as being " a control process (it collects and analysis) and spread of information of the external environment, of which they make use all of the levels of the organization, interacting strategically in the process to take of decision, in agreement with their needs. It can still be said, that Competitive Intelligence is a systematic process that it converts information in strategic knowledge for take a decision ".

When this systematic process of collection, treatment, analysis and spread of the information on activities of the contestants, technologies and general tendencies of the businesses began to be adopted by the companies in I begin him/it of the eighties, they created an answer ace new demands of the market and of the competition.

The steps to they be following for the collection of information are the following ones:

- to Identify their competitors;
- to Determine what you need to know on the competitors (data and analyses that would illustrate better as these companies are working);
- to Identify the sources you specify of these information;
- to Organize the resources of the corporation and to elaborate a strategy for obtaining of the information that you need and for which you don't have access to regulate;

- to Join all of the information, to evaluate the data and their competitors' potential performance and to compare with the forecasts that his/her team this doing for the company;
- to Monitor their competitors' actions and to communicate those information continually the whole company so that the can alter yours administration and simultaneous management.

Caminho da Inteligência Competitiva

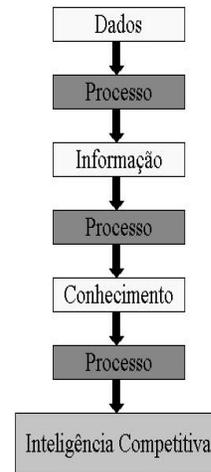


Illustration 1 - The idea that the process in this case can be considered the union of the collection, organization and transformation of the material in focus, we saw in this illustration the road for the conquest of CI.

With this group of data, information, and knowledge becoming more and more important, they generate a factor of competitiveness in different types of organizations. The organization that obtains success in the filter and transfer of this group for the consolidation of the process of Administration of the Knowledge and Competitive Intelligence, he/she will have given a very big step for the obtaining of the success. And through the administration of these resources informacionais it can be subsidized several activities for the continuous improvement of the business of the organization. The paper of these processes is fundamental for the increase of the productivity and of the quality of the organization.

The transition of simple company for one that values the knowledge, and with him it gets to conquer those you differentiate is not soft, but it generates great opportunities, everything depending on as the company it accomplishes this task and also of their professionals' cultural change. This transition has to be gone back to the generation of the knowledge and his/her spread, to preserve and to create knowledge.

Many say that the success of an organization also this related with luck and in the market in that this inserted, but mentioning Robbins, Anthony: " Funny, say that

have luck. Only I know the more get ready more luck I have ", that is also applied with an organization, because the more she generates knowledge and information, more easily he/she gets ready to recognize his/her potential, their deficiencies and to determine a safe way in future.

When defining the processes of Administration of the Knowledge and Competitive Intelligence the organization it plants the seed for the structuring of an organization that seeks to obtain a differential with the information that merely would be unknown, consequently tends a significant loss in yours negotiate.

The accomplishment of these processes and adaptation to the concepts of the organization bring benefits not just to the competitive factor, but the organization ends up receiving a good image in the market and before the consumers. In a market where the law of the competition prevails, it is very important that knowledge sources and efficient information exist, since they are the roads for the continuous improvement of all of the organizations. The future of any company is related to compromising to acquire those competitive advantages before the contestants, getting to present the best products and or services to the customers, creating like this a differential that will bring him values, maintaining and increasing like this the attractiveness of the company.

### **SIIC PROJECT**

The SIIC - SIEGO project presents a proposal that seeks to research in "Vale do Itajaí- SC" the companies that possess or they are thinking about using the methodology Systems of Strategic Information for the operational administration based on Data Warehouse for business area. Parallel a system will be developed computerized based on the philosophy Data Warehouse and Data Webhouse. This research consists of verifying the viability of the use of this methodology, so much in the area of Information Systems as well as a Market differential of those companies, as Competitive Intelligence. For a make it available verification, use and validation of this research will be developed a prototype of the Strategic System of Information for the Operational Administration (SIEGO), based on Date applied Warehouse in the companies in "Vale do Itajaí-SC".

The development of the research project in Information Systems and Competitive Intelligence - SIIC based on Date Warehouse, appropriate, in the area of the "Vale do Itajaí- SC", will be to aid the professionals in the administration of the Systems of Business Administration and information partner economical, since it will allow a better understanding of the impacts of an global economy on the companies, like this the companies of the area will probably increase his/her competence in the transmission of the knowledge, becoming more competitive. The project had also allowed the optimized use of the business information of the companies and it will define with more property the internal strategies of investments in domain and

technological updating and it will produce selection criteria, based on the concepts of the Technology of the Information that are necessary to build the architecture of information, useful and effective for enterprises. The information system, previously drifted will help decisively in the definition and establishment of patterns of the model of management of the System of Information of the company to aid the administration of the System of Business Administration. This project will serve as an instrument to aid the academics and later entrepreneurs that are willing to rationalize and their adept strategies, aiming at a better competitiveness and a better administration of the System of Business Administration.

Being it "Vale do Itajaí- SC" an area with high Index of Human Development (IDH), for the excellence of their textile poles and of computer science, that stands out like this for the fact of already to possess you negotiate strategic that she has as own objectives, the obtaining, treatment and diffusion of information sustained in bases of data sectorial and global research studies in the social and economical sections, promotion integrated regional in national and international terms.

In this initial phase of the project this being studied the chart and structuring of the information, the analysis, the verification - viability and characteristics - of compatible technologies for the creation of the applications.

Starting from the researches already accomplished was verified that most of the organizational flaws could be avoided being taken some cares. Those procedures were analyzed and systematized, generating like this the possibility of we create a System of Competitive Intelligence, could be available to the reach of all of the companies.

Knowing that Internet became one of the instruments that read for use information and knowledge has people more and more, and in an agile and effective way, we created the site of this project [www2.inf.furb.br/si](http://www2.inf.furb.br/si), that has constantly been updated and it serves as support for the obtaining of information of the several activities that you/they understand this project and informative general.

Also this being elaborated an infrastructure *WEB* for the consultations of the information of the Business area, with these consultations this being elaborated the executive's profile based on the techniques Data Warehouse, Intelligent Agents and Reasoning based on Cases.

As resources and flexible and efficient programming languages, and the viability of the integration of the databases are used directly with the interface, the development of applications for the interface *WEB*, offers several advantages for the system of Competitive Intelligence. With this tool *WEB*, we intended to minimize the time of access the information for directors of companies and for the decision makers, since this is a factor that causes great relevance in the competitive factor of the organization. Through the

perfect atmosphere of the interface *WEB* we are developing simplified means of access the information, with processes that can gather and to transmit the several sources of information for his/her best administration and fundamental to create access means to the users. He becomes an efficient tool for the fact of getting to make possible the collection and at the same time a form of sharing these or any information.

### **INFORMATION TECHNOLOGY.**

Giving continuity, we will see that the Competitive Intelligence gathers as much the human aspects as the technological ones, we also have to understand the several factors that involve the Technology of the Information, for that we will detail as the technological tools are indispensable to SIC.

The Information Technology IT is a factor that makes the difference for the success or failure of a system of Competitive Intelligence, mainly in the great companies, where the bases of data are more expressive and the analysis of the data is made with the collection of the information of several systems, units and heterogeneous resources. Having to be as soon as available tools to get to integrate all of the information of the organization, independent in the way that is generated or for the format.

The benefit that to IT brings to the process of Competitive Intelligence is evident in almost all their phases. Her if it turns so indispensable for being the middle for which the organization has the storage capacity and extraction of the information and of maintaining available in a more efficient way to the information and the knowledge that the organization needs to sustain the process of Competitive Intelligence.

To IT with that also if it turns a competitive advantage if the organization creates technological innovations that you/they won't be available to the contestants, and like this to create products or better services or even only a using for the informational process of the organization, since they exist several that you/they possess internal structures that need extremely numerous and discerning information.

The organizations beginning to evaluate his/her half organizational and their processes noticed that the manners of treating computer science area and data processing that were usually being used to control all their computers resources were becoming obsolete, and then they observed that it was not only the capital of a company that contributed to his/her success, but the information would become a business assets of great importance. Before the scenery of great changes and competitive factors reaching great relevance in the market, they defined that the organization more it could not continue being only industrial, but to become an organization of the information, that looks for knowledge to reach their goals and to draw concrete goals the short and long period.

With this I aim at the Information Technology IT that was considered by several authors as being the resources, so much technological as computers that prioritize and they generate information and his/her appropriate use - it began to be implanted with the main objective of creating advantages before the models of processes that were being used by the companies. With the displacement of the companies to the side of the intellectual capital, the information passed becoming a well of the organization that should be treated and worked in a free and open way, so that it can become useful the any function or activity. Second CRUZ [5], the Technology of the Information is all and any device that has capacity to treat data and or information, as much of system form as sporadic, she wants is applied to the product, he/she wants is applied in the process.

A lot of doubts and questions began to appear starting from this change, so much in the behavior of the companies as in the one of the professionals that you/they were used of this technology, to EIS developed of a simple administrative support orientation, to turn a point of reference to be evaluated by the company in what he/she concerns their strategic aspects and in the viability of creating new organizations strategies.

In the first implantations of this technology, she was just seen as being an aspect to not to be ignored by the company, for the fact of power to become an idiom and to begin to license as a factor of competitiveness, with that the companies still the adapted management his appropriate use, contributing like this to the wrong and incredulous vision of the Real results that the several processes of this technology can offer the organization. Some deficient factors of the companies were the countless flaws in the evaluation process of as IT to could contribute to the competitive factor of the company and inadequacy of experience in the administration of systems of information.

The IT involves the sections that are, organization management, system developers, basic structure & technology and organizational tatics.

### **IT MAIN SECTIONS.**

Analyzing the organizational structure and the several processes of an organization, it is not simple to obtain success with the use of the IT and of an administration based on information, because with these deficient systems, it is necessary a reorganization so that they are possible the adaptations foreseen in the project previously defined, adjust, and revision of the organizational processes. The organization needs to be prepared for a complex one and it continues updating of their processes, otherwise it will lose of form costly improvement opportunities and factors that could be very well taken advantage for the company to stay competitive in the market.

The IT used in an efficient way it really supplies the information that the organization needs and she wants to know, as for instance: where she can arrive, how to arrive and the one that he needs to know to conquer this

knowledge, for this the information owes if it turns democratic for all of the levels of the organization, also information of the contestants should be collected, this means, to work with internal and external information.

To set up the structure for the application of the IT a company should be related to the objectives of their businesses, they should be shown the criteria that influence on the decision of how to integrate IT with the objectives of the businesses, this is the great opportunity to get competitive factors in the application of the IT, simply not applying IT, but integrating IT her with the processes of the company.

The planning of the development of systems should obey an order previously defined so that his/her implantation is obtained in an organized way and following the several stages. According to Foina [6], it owes if it obeys the following order:

- specification and understanding of the problem;
- model of data;
- model of processes;
- system project;
- programation;
- integration test;
- pilot implantation;
- definitive implantation;

Being the hardware, devices and peripheral indispensable part to the systems that sustain IT should be mentioned and told, second Rezende [7] the components that are fundamental the Information Technology are the following ones:

- hardware, their devices and outlying;
- software and their resources;
- telecommunications systems;
- data administration and information;

### **IT RELATIONS AND IMPORTANCE.**

As the same author also if it turns necessary besides analyzing the costs, benefits and viability of the implantation of the IT to render attention in the following aspects:

- to Respect the effective legislation, avoiding the piracy;
- to Establish a contingency plan to assist to eventual operation deficiencies; to Focus the business competitiveness and no the technology;
- to Elaborate a plan of administration of the change due to the introduction of the technology in the context organizational;

Leaving of the presupposition that to IT turns an instrument that read for use the necessary tools for the reach of the main objective of the organization, that is it

of getting to treat and to transform main resource - the information - in several factors you differentiate and competitive advantages before the market can evaluate her as being an indispensable process for the strategy of the organizational administration of the company and also for the modification of several deficient areas of the organizations, creating like this an organization conscious of his intellectual and competitive power.

With the information in the right place and with the correct professional, the organization it gets in a more effective way to create solutions for their problems, to make decisions in a safer way, to improve his administration model, obtaining like this a reduction of costs and a significant improvement in her productivity, staying and competitive in the market.

The changes in the organization with the implantation of the IT can be seen in all their sections, but the great differential that to IT cause in the organization, view in an integral way, is the great increase in the speed of the transfer of information and knowledge, increasing like this his/her flow, and consequently generating a cycle to generate her/it all the moment new information and knowledge that of some form is demanded more and more fast for the competitive market, not forgetting that this flow every time larger of data should be analyzed and reviewed in an agile and modern way the all of the pertinent sections of the company.

The deep adaptations and happened changes, mainly in the initial phase of implantation they alter the organizational aspects deeply, among them, the personal relationships and the professionals' habits, and the organizational atmosphere in a general way, creating a culture, so much personal, as organizational gone back to the technological and competitive factors that the market of the businesses demands.

After the definition of the decisions and strategic goals - so much to the that refers to IT, as for the businesses of the company - and of the initial phase of the implantation of this technology, the organization notices that the results begin to appear, still motivating more his/her continuity, and the IT design for a better adaptation the all of the requirements of the company.

Analyzing the current competitive market, we can verify that to IT in constant expansion, and every time becomes a decisive factor for the adaptation of the companies to this market, and a great growth opportunity for professionals that are linked to systems of information, competitive intelligence and administration of the information, as for companies that intend to improve her position in the market.

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