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**THE SYSTEM OF COMPETITIVE INTELLIGENCE IN THE PROCESS OF
TECHNOLOGICAL INNOVATION**

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ABSTRACT

Competitive intelligence appears as a form of availability of information that can be used as support for the process of taking of decision and be reverted in competitive advantages, assuming an excellent role in the process of technological innovation. This focus of analysis has as main objective to analyze the contribution of Competitive Intelligence in the effectiveness of the process of technological innovation in the organizations. Thus, detailed studies more, that allow to understand this interactive relation between Competitive Intelligence and Technological Innovation, inside of a systemic vision, becomes each time more necessary.

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INTRODUCTION

In the analysis of the current enterprise environment, it is distinguished a series of occurred transformations in function of the technological advances in computer science and telecommunications, as well as great changes in world-wide the politician-economic scenes. Is the search of the competitiveness if has translated an increasing concern on as to define more efficient forms of if leading to the innovative activity.

In this context, competitive intelligence appears as a form of disponibilization of information that can be used as support for the process of taking of decision and be reverted in competitive advantages, assumeing an excellent role in the process of technological innovation. This focus of analysis has as main objective to analyze the contribution of Competitive Intelligence in the effectiveness of the process of technological innovation in the organizations.

1. COMPETITIVE INTELLIGENCE

Amongst the diverse processes or important functions of the industrial organizations and services, the process of management of the innovation meets (TIDD et al., 2001). A critical and initial phase of the definition of an innovation strategy that is party to suit of innovation (TIDD et al., 2001) is the identification of chances of technological market and, as well as the identification of the risks placed for the strategies of the competitor customers and suppliers. One of the boardings that if have consolidated for this mapping of chances and risks is Competitive Intelligence.

HERRING (1997) defines competitive intelligence as the organizacional process of collection and systematic analysis of the information on the external environment, that in turn is spread as intelligence to the users in support to the decision taking, in view of the generation or sustentation of competitive advantages.

COMBS & MOORHEAD (1993) that they understand competitive intelligence as the election, collection, interpretation and distribution of the information public insurance that possess strategical importance. Its main goals are: to detect competitive threats, to eliminate or to minimize surprises, to add competitive advantage minimizing the reaction time and to find new chances.

Amongst the used tools and techniques in Competitive Intelligence we can cite: "competitive benchmarking¹", "defensive intelligence²", "engineering reverse³", comments in-loco (MALHOLTRA, 1996).

Ahead of this competitive environment, TEECE et al. (1997) they call this ample capacity of innovation of "dynamic capabilities", mentioning itself mainly to the capacity of the firm to reconfigure its resources in search of better performances. To leave of this base, other authors had developed the idea of that the construction of the competitive advantage would be possible to the firms that were capable to not only establish a convenient position in the market, but also one adjusted position in resources.

¹ Competitive Benchmarking: he is used to compare operations of an organization with the ones of its competitors.

² Defensive intelligence: it involves the monitoramento and analysis of the activities of the proper organization and as its competitors and individuals see.

³ Engineering reverse: to acquire information on a product (or service) as it is produced, cost and quality, leaving of the finished product.

According to COUTINHO & FERRAZ (1995), this position of competitiveness must be understood as the capacity that the organization must have to formulate and to implement strategies of market that allow it to conserve, in lasting way, a sustainable position in market. Then, we can say that the competitive intelligence of the firm inhabits in making good choices of “position in resources” to the long one of the time (power to decide effectiveness) and in the capacity to reach these positions through systematic innovations in the organization (dynamic qualifications). Theoretically, the job of this intelligence would provide the necessary profits of internal and external effectiveness in such a way operational to the establishment of the competitive advantages, how much to the opportune renewal of these to the long one of the time.

KAHANER (1996:23) recommends that the companies will count on a formal program of Competitive Intelligence, that will be able to help them in diverse questions. For the author, a formal program of Competitive Intelligence will have the capacity of:

- To anticipate market changes;
- To anticipate action of the competitors;
- To discover new or potential competitors;
- To learn through the success or failure of others;
- To increase the reach and quality of the purchase goals;
- To learn on changes politics, legislative or controllers that can affect the business;
- To enter in new businesses;
- To look at for the practical ones of the proper business with open mind;
- To assist in the implementation of the new tools of the administration.

Innovative organizations always are opened the new external stimulaton. In this context, the threats and the chances of these organizations become true vectors of orientation for one better attendance of its customers or for the search of technological development aiming at competitiveness (TIDD et al., 2001). Being thus, the competitive intelligence (reflected in the power to decide effectiveness and dynamic qualifications) it assumes an obvious strategical character for the organizations, therefore it indicates a possible way to take care of of the dynamic component of the strategy, going beyond the static analysis of positioning (PORTER, 1992).

2. THE INTERRELATION OF THE MANAGEMENT OF THE KNOWLEDGE AND THE INFORMATION

In terms of management of the knowledge, it has necessity of if to know which they are the knowledge that are related to the business-oriented processes of the organization, as these knowledge are used by the people and too much involved entities in these processes, which the best form of if keeping the knowledge on errors and rightnesss in the execution of activities, as external knowledge can be had access by the organization, and finally as to mensurar the value of the knowledge for the in agreement company its use and return in the contribution form the good performance of the organization processes (ALLIPRANDINI & HISSES, 2002).

Inside of the system of Competitive Intelligence, the knowledge is something that it requires, beyond the availability of the information, the experience, context, negotiation, interpretation and reflection of the people so that this information makes sensible and has value. It has an ample consensus in literature on the knowledge of that this exists in the tacit format (inherent abilities to a person, difficult of being legalized/registered or explained to another person,

requiring personal interaction drawn out to try its transmission) and in the explicit format (legalized easily for publications in general, texts in half electronic, graphs, tables etc.).

According to NONAKA & TAKEUCHI (1997), this line of creation of new knowledge by means of physical and/or virtual spaces for the continuous conversion enters the knowledge in the tacitus/explicit format forms the central nucleus of one of the main boardings on the management of the knowledge. In the practical one, management of the knowledge includes: to identify and to map the intellectual assets to the company; to generate new knowledge to offer advantages in the competition of the market; to become accessible great amounts of corporative information, sharing best practical and the technology that becomes possible everything this.

The technological source has shown, each time more, its importance in the development process, and, can thus be said, contributed for the survival of the organizations. Its controllers, exactly that still of shy form, but already increasing, they come if showing sensible to the valuation of the technological component, adding it as distinguishing in its products and services. Obviously, the information has basic paper in this process, has seen that by means of its adjusted processing, the company/entrepreneur absorbs knowledge, what it guarantees a good performance in the practical one of Competitive Intelligence.

FERREIRA (1994), observes that a competitive capacity of a company is related to the conjunction of management and information, which had to the increasing requirements of the market with regard to new products and services of high technological content. Of complementary form, LE COADIC (1994) demonstrates the importance of the information for the development when it affirms that the activities techniques are the source of where the scientific knowledge and technician that will be changed, after registered appear, in scientific information and techniques.

Inside of the concept of Competitive Intelligence the interrelation of the knowledge and Information becomes, therefore, a basic variable in the innovation process, where the information is a flow of messages and the knowledge is created by this proper flow of information.

3. LEARNING ORGANIZATION

The question of the learning organization is enclosed in this analysis, for being considered one allied fort of the described models previously. The conceptions presented here aim at to explicitar the narrow relation that keep with the models of Management of the Knowledge and Competitive Intelligence.

The conception of SENGE (1998) sufficiently is adjusted for Management of the Knowledge, and the perfecting of the formation of the Enterprise Strategy in organizations that are acting in super competitive environments or living deeply new institution and controller realities.

According to author, the learning organization can be developed by means of the practical one of five disciplines:

- systemic thought: understanding of the reality beyond its events, perceiving itself the standards of behavior of the systems and the interdependences of the innumerable internal and external factors that influence the organization;
- personal domain: creation of a vision of personal future and sense of objectivity. Domain does not mean here to be able and yes one high degree of proficiency, continuous learning and capacity to reach goals and results;
- mental models: capacity of permanent questioning of our actions, fruits of mental models constructed and many of the rooted times. It disciplines it consists of opening the mind for new models and paradigms, increasing itself with this the learning capacity;

- construction of the shared vision: creation of a shared vision of future that promotes a compromising voluntary, capable to create a community sense that it involves the organization, being guaranteed the focus of the collective learning;
- learning in team: development of the dialogue capacity enters the member of the team, allowing that the group discovers new perceptions and ideas that never would be gotten individually.

The practical one of these you discipline generates a permanent cycle of deep learning, where new capacities and abilities take the new perceptions, that, in turn, they can change the attitudes and beliefs of the organization, increasing the learning cycle.

For GARVIN (1993), an organization that learns is that capable one to create, to acquire and to transfer knowledge and to modify its behavior, reflecting the new knowledge and perceptions. It describes five practical ones so that the organization can always learn:

- systematic resolution of problems
- experimentation;
- learning with last history (learned lesson);
- learning with the others
- diffusion of the knowledge for the organization.

It detaches the importance of if measuring the learning so that if it can manage it and it suggests an auditorship that contemplates the three levels of learning:

- cognition ((to think different);
- mannering (to act different);
- performance improvement (to get better resulted).

The learning is important in such a way to adapt to the fast changes in the markets and the conditions techniques, as to generate innovations in organization products, processes and forms. Of this it elapses that the knowledge is the main resource and the learning the central process of this phase.

4. PROSPECTION (FORESIGHT) AND AMBIENT CONTROL

The prospective action is an exercise of future possibilities that considers the actors of data sector, its alliances, its oppositions and strategies, constituting an important net to the innovation and development. One confides, from the prospection, a fan of possibilities for absorption, creation and domain of technologies. The prospection is not an activity of forecast that it searches to draw the facts most probable, is yes an open action the different contexts, draws multiple possibilities and it suggests strategies diversified.

To negotiate and to co-ordinate new chances in order to become them viable are the spirit of foresight. This boarding, responsible for a new perspective on studying the future, stimulated, from the end of the decade of 80, a proliferation of programs with the objective to think and to construct to the future of the activities of science and technology in diverse countries.

As GEORGHIU (1996) foresight had as objective to identify to the chances of market and the trends of technological development for the taking of decisions. Foresight in prepares them for the future chances and practical its promotes the flow of knowledge between the diverse social actors.

LISTONE & GRUPP (1999) had identified to four dimensions in which this boarding can play an excellent role:

- In the social political dimension, for which it acts as chance of communication in the negotiation of the social systems
- In the economic dimension, as instrument to identify benchmarks and future demands, basic data to evaluate the investments gifts
- In the cultural dimension, consisting in a privileged mechanism to identify and to negotiate the limits between happened tensions of the globalization process front the regional especificidades
- In the dimension diplomatics, for its capacity in negotiating the differences and pointing routes consensuals, it can have important manager paper in the supranational plan.

The process of foresight involves the explicit recognition that the technological and scientific developments depend on choices made for the actors in the gift, that is, is not determined only by an intrinsic logic, nor happens in independent and random way.

With the fast changes observed in the current days, each time more important becomes to observe the trends of the demand in the prospection exercise. To know the real demands of the final consumer and the partner-economic necessities they are bases for any work of prospective research, in this new economy.

The ambient control is defined according to different points of view. AGUILAR (1967), understands ambient control as planning tool and way for which is possible to identify to threats and chances, in short and average stated periods. Already ANSOFF (1965), defines as management of strategical questions (issues management), or either, process of identification and analysis of questions of the institution environment that must deserve the attention on the part of the planners, where these questions is considered as events or trend perceived by the administrators as capable to affect the performance of its organizations. E according to PORTER & DETAMPEL (1995), to monitor is to look at, to observe, to check and to remain itself brought up to date in relation to the developments of a definite area. Thus, the exercise of control, as much can assist in the identification of variable for analyses of trends and construction of alternative scenes, how much to have its focus in the technological changes or partner-economic changes.

On the basis of the displayed one, verifies as the complex a prospective research and how much the management of the knowledge impact the performance of the methodologies, since the election of the information sources, passing for the methodology of collection, treatment, analysis, aggregation of value and forms of dissemination of the analyzed contents.

In this context, Competitive Intelligence becomes important, mainly for if dealing with a set of practical that they make possible the captation and technological organization of information and knowledge on trends and chances and of market, feeding the formularization of the innovation strategy.

5. TECHNOLOGICAL INNOVATION

During the two last decades, the international economy comes crossing a period of deep transformation and reorganization, followed for the intensification of the level and forms of competition between industrial companies, sectors and countries. Such situation still more placed clearly the paper of the innovation as one of the main instruments of the competitive strategy of the companies.

The innovation process, in a ampler direction, is a social and interactive phenomenon as not only also systemic. He is systemic because the innovative process requires the participation of some elements that do not have direct relation with the scientific area, however plays an important role very as, for example, the financial aspects, social politicians and the industrial relations. The joint action of all these elements that compose the system, on direct or indirectly

in the center of the research and technological development have as resulted the institutional and interactive learning, which, in turn, will determine the rhythm and the direction of the innovative process.

The education, the formation of man power and the application of knowledge for the management of companies can be considered as systematic exploration and the consequences of the scientific discoveries and the technological innovation (FREEMAN, 1974). In its more basic direction, the acquisition of new knowledge constitutes the base of the civilization human being.

DRUCKER (1998) considers that the innovation must be one practical systematics and presents as innovation sources: research and development, unexpected occurrences, necessities of the process, changes in the market or industry, changes demographic, changes in the perception and new knowledge.

In all the cited sources of innovation, the information has excellent paper, as much in its form tacit as explicit, endogenous or exogenous to the organization. Such comment implies that how much bigger the exploitation of the information that arrive in the organization and the more systemize its search and dissemination, greater the probability of if using to advantage to the innovation chances.

CONCLUSION

Evidenced that an innovation is in such a way conceptual as percipient, Competitive Intelligence can be seen as a tool for the innovation process, therefore it makes possible to observe the market, to analyze the strategies of its competitors and its repercussions, the behavior and the trends of the consumers, its values, expectations and necessities.

As waited, the question of the organization, enclosed learning in this analysis, reveals to one allied fort for the development and application of the system of competitive intelligence. Currently, it is observed how much she has been strengthened the necessity of holistic vision of the organizations as form of better exploitation of its abilities, greater social and ambient responsibility.

A system of competitive intelligence must be capable to contemplate the dimensions technological, economic, politics and social. The system helps the company not to lose the strategical focus in the collection process, storage and analysis of the information, allowing to follow, of continuous form, the process of revision of the strategies of negotiates, technological innovation, and offers to support the taking of decision in strategical, tactical and operational level.

Rank this, the innovation process must be seen as a cycle and of systemic form, where it is basic that the companies develop and implement a program or system of competitive intelligence that allows them to get the adequate information to its innovative process.

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