

Necessity Of Knowledge Management In University Managerial Processes: Experiences In Cuba

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ABSTRACT

The institutions of higher learning have between their main missions the one to compile, to process, to storage, to generate, to transmit and to apply knowledge to their students and to the society as a whole. Prestige, image, sustainability, competitiveness, quality of the different university services, depends on the degree of the knowledge management (K.M.) that it is made. The present paper tries to argue the introduction of the K.M. in the university management in XXI century, from its complexity, the influences and the new requirements of the surroundings. Initially the fundamental challenges of higher education are exposed as well as the corresponding managerial complexity of these institutions. From these assumptions, it is argued the necessity of introducing the knowledge management in the university managerial processes. It is exposed the bonds between university management, knowledge management and the decision making. The fundamental K.M. components are detailed as well as the use of intranets – information technology support of K.M., and the necessary balance that must exist between these technological and organizational components. Finally three concrete experiences of knowledge management introduction in the Cuban Higher Education Ministry (HEM) are exposed.

Keywords

Knowledge Management, University Management.

1.0 INTRODUCTION.

The globalization, development of the new technologies and the communications, the "society of the knowledge and the information" as well as the environment deterioration, the increase of the poverty and differences between rich and poor, the fight against the wars and the terrorism, unequal distribution of the wealth, all they

locate, among other elements, every day new challenges before the organizations of higher education.

In (Vecino Alegret, 2004) it is exposed that “never before in the history of humanity had the well-being of nations been so directly dependent on the quality and outreach of the systems of higher education and their institutions”. Moreover, the relevancies of universities in the XXIst century will be gauged, above all, according to their capacity to generate transformations to shape a better World.”

At the present time, the university constitutes an organization of services of education, investigation and extension as much oriented to the own academic community like the society as a whole. It is required a university management which combine social vision, included the understanding of world problems with effective management competences. All the decisions taken as part of the university management process always have a social component.

We live in what many specialists have termed “the knowledge society”, on which institutions of higher learning are urged to preserve, generate, transmit, and apply the knowledge. “The university conserves, memorizes, integrates, ritualizes a cultural inheritance of knowledge, values; it regenerates it reexamining it, updating it, transmitting it; also it generates knowledge, ideas, values that will be introduced in the inheritance”. (Robert Martinez, 2000).

As is exposed in (Vecino Alegret, 2004), all this “represents both a challenge and an opportunity for higher education to play a substantially higher role in facing social exigencies”.

The present paper tries to argue how the university management in the present century, from the influences and the new requirements of the surroundings, considering general, regional and particular aspects,

constitutes a complex process that requires, among other elements, of an efficient and effective knowledge management in each one of the inherent activities and sub processes .

In this paper initially are exposed the challenges of the Higher Education before new century XXI, it is based why we stated that the universities are complex organizations. From these assumptions it is argued the necessity of introducing the knowledge management in the university managerial processes. Finally three concrete experiences of introduction of the knowledge management in the HEM are exposed.

2.0 THE HIGHER EDUCATION BEFORE NEW CENTURY XXI.

Dr. Alex Didriksson, Director of the Training center on the University (CESU) of the UNAM, exposes in (Didriksson, 2000) a scheme of differentiation of traditional variables and change, from the organizational plane, in the modern universities. An organizational change of the traditional university prevails towards the innovation becoming a greater emphasis in the multidimensional character, interdisciplinary, in multiple environment of learning and tutor, organization of networks, horizontal structures, decentralized where values prevail such as the pertinence, the social responsibility, solidarity, and commitment with the transference of knowledge like a public good. These elements directly affect the degree of complexity of the management of the inherent processes to the university life.

The answer of the university before the challenges of the new century will depend in important measurement of the university management that is developed considering, not only the management of the own university like so, but also the relations university-government, university-enterprise, university-territory, university-society, etc.

2.1. The university as a system and complex organization.

It is possible to detail a set of elements that characterize to the university management like a complex process:

- The variety of activities that makes (teaching, investigation, extension, economic management - financier, etc.).
- The heterogeneity of actors or participants (personal educational, investigative, students, educational technicians, noneducational technicians, workers, administrative, etc.)

- A noticeable complexity as far as the management and coordination of great number of activities different and many people with rolls, professions, different activities and expectations, that the creation and transmission of the knowledge are related around.
- The diversity of structures and coexisting hierarchies in a same organization. (discipline, faculty or school, research centers, departments, etc.)
- Multidisciplinary character of many of the activities related to the creation and/or diffusion of the knowledge.
- Diverse degree of real or methodological subordination of the university (for example, in the case of Cuba - Higher Education Ministry, Ministry of Science, Technology and Environment, Ministry of the Work, Ministry of Finances and Prices, Ministry of Economy, Territorial Governments, to mention only some.)
- Great amount of flows of operational information, of strategic management or of great importance between the different levels from internal direction and towards or from the rest of the Ministries, territories, etc.
- Great amount and dynamics of appearance of norms and resolutions for the activity of formation of professionals, university secretary, science and technique, post degree, scientific degrees, countable management - financier, international relations, etc.

The university presents a noticeable complexity as far as the management and coordination of great number of different activities and many people with rolls, professions, and expectations that the creation and transmission of the knowledge are related around. They occupy the different represented formal positions in the organizational chart from the institution. Simultaneously, the multiple networks of informal interpersonal relations are integrated and developed. Both dimensions - formal and informal gives life to the "real organization" (Jaime Carrau, 2003).

In order to fulfill its mission and objectives, the universities must control a set of academic processes, of administration and support interrelated and dependent as well of the specific characteristics of each institution and its surroundings. For example, the management and the financing of higher education demand the elaboration of capacities and appropriate strategies of planning and analysis of the policies that properly guarantee a management rationalized and a healthy use of the resources practically being left to the requirement of to be auditable and transparency of the university management in all their aspects explicit.

Aspects such as fairness, access, financing, professorial and managerial competitiveness, robbery of brains, etc establishes diffuse surroundings, with high degree of dynamism and uncertainty. Take in mind only some of these new elements to value the managerial complexity and the necessary competition of a director in an institution of higher learning of our times, the great diversity of variables, knowledge, abilities and information to handle for the decision making and power to take "the university ship" by the correct course.

At the present time the institutions of higher learning require more and more of a greater speed of answer, synchronization of activities, reduction of costs, and advantage to the maximum of the human resources, materials and financiers which it is had. At the same time, the management must consider the contingencies of the day to day, and the different tensions that are generated by the increasing complexity that supposes a university institution, where diverse groups coexist with different optical, criteria and arguments. Additionally, the necessity of a more proactive character in the university management is reinforced anticipating the future necessities of the society in the preparation of specialists, development of investigations or extension. "If to that phenomenon, we added the uncertainty to him that arrives to them from external dynamics, and the varied exigencies that the institution must take care of, we can understand exactly that the practical exercises of the university management is a challenge that renews each morning and that demands enormous efforts and noticeable professionalism ".[Jaime Carrau, 2003]

2.2. The management of the university and the knowledge management.

The institutions of higher learning have between their main missions the one to compile, to process, to store, to apply, to generate and to transmit the knowledge to its students and the society as a whole. At the same time, the complexity of these institutions require to compile, to conserve, to multiply, to as much create and to transmit the experiences and knowledge in the own management of the universities. Therefore, Higher Education as knowledge-intensive system needs to introduce the knowledge management at level of each institution, of all the Organization and even of the society.

It is impossible to speak of university management, without considering the knowledge management. Prestige, image, sustainability, competitiveness, quality of the different university services depend of the knowledge management that is made.

The main mission of the knowledge management is to create an atmosphere in which the knowledge and the information available in an organization is accessible and

can be used to stimulate the innovation and to improve the decisions. The key will be in creating a culture in which both elements are valued, shared, managed and used efficiently and effective.

In the case of noticeable complexity, it has a great importance to manage the tacit knowledge of the organizations from a suitable "technological and organizational" logistic "infrastructure". It is very necessary in the universities, as much for its own operation, as for the decision making, to be able to count sufficiently on the knowledge, with the experience, information, etc. In many occasions, the exit or death of a director, dean or any university executive causes serious difficulties in the university management.

Nowadays consensus exists as far as which the knowledge is one of the most important resources of an organization, even for authors like Peter Drucker, it is the resource.

Some of the definitions of knowledge management could be mentioned applied to the organizational scope:

- The knowledge management is all the set of activities made with the purpose of using, to share and to develop the knowledge of the organization and the individuals that in her work, directing them to the best attainment of its objectives (Carlota Bustelo, 2000).
- Similarly, we can say that it is the theory of organizational management that responds to the adaptation of the last technological innovations in the data processing and the communications. The knowledge management is a model of management of all the organization (Carlota Bustelo, 2000).
- The knowledge management is the specific, systemic and organizational process for the acquisition, organization and communication of the knowledge of employees to other employees in order to be more effective and productive in their work.
- At the George Washington University web site we can find that "knowledge management is the effective application of management "best practices" and information technologies that benefit an enterprise in attaining their objectives efficiently and effectively".

It is deduced the roll of the knowledge management in the degree of attainment of the objectives of an organization seen like a philosophy with systemic character and applicable to all and each one of the workers, executive organizational units and making possible to reuse and to harness the best experiences, obtaining by this way self-learning organizations which elevate their productivity and efficiency.

2.3. The knowledge management and its bond with the process of the university decision making.

The decision making is an activity of analysis and evaluation of possible alternatives, culminating with the selection of one of them for the solution of a problem. At the same time it constitutes an activity of intensive management of the generating knowledge, of new knowledge. Any organization "knows more" after the taking of a decision.

The capacity to recognize a problem and to give solution him depends on the existence of the required knowledge and the possibility of processing it. It is by that the abilities of the personnel who makes decisions to manage this knowledge and the organizational and computer securing whereupon counts, they will influence in the process and the successful or erroneous results of the decision making.

They are indeed the systems for the decision making (Support Decision Systems - DSS) those that help the executives to manage the necessary knowledge catching, storing, using, distributing and presenting/displaying the pertinent knowledge (Holsapple, 1995).

In the case of the universities... the application of the K.M. it must be directed as much in the internal reorganization of the processes, like in the improvement of teaching and the investigation, with the objective to facilitate the development of a competitive and adapted university to the new demands of the society.

2.4. Necessary components for the knowledge management.

In order to carry out the successful knowledge management a frame or surroundings of work is required of which is made up of the components of organizational character and others of technological character.

The project of knowledge management in the university management is based, of consensus with many authors, in 4 fundamental pillars:

- Leadership/ Planning - Creation of a culture of GC in the university management associated to the planning strategic and the definition of the objectives to reach.
- Organization - Management of the processes and procedures of the areas with its corresponding systematization, description of the job streams, as well as the definition of metric the corresponding ones.
- Technology - It includes as important components as electronic mail, OLAP, data warehouses, finders,

technological support to the decisions, modeling of processes, etc.

- Learning - Existence of the organizational and technological frame that allows the creation of learning communities, equipment virtual, forums of interchange of experiences, platforms for the interchange of results, etc.

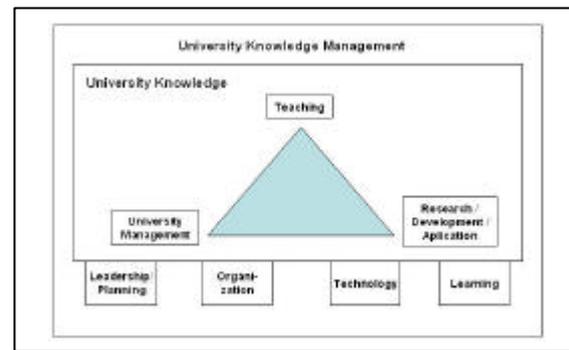


Figure 1: Knowledge Management in the university processes.

It is clear that the greater weight corresponds to him to the aspects of organizational character reason why it is not possible to think about this activity if is not gotten up to the culture of management of the organization. However, the technological elements also are important although not of direct form, but through its introduction and use in the processes of knowledge management that are defined.

For each one of the knowledge management process exists a computer set of tools associated that allow to reach higher levels of development and application between which we can mention the conceptual maps, discussion lists, forums, data bases, data warehouse, search engines, tools of data and text mining, etc. These tools it is possible to associate to an intranet like integrating element that serves to accede to each one of the processes associated to the knowledge management.

Any computer application that, of one or another form takes part in the process of management of an organization includes in him the modeling of business rules. While it is operated, "it learns" or it assumes part of "know how" individual or collective of its workers and specialists.

The competitiveness of the organizations at the present time depends on the ability in transferring the knowledge between its members. The organizations count frequently on "independent niches", separated, isolated of knowledge which constitute repositories with vital information. A system of K.M. must be able to interconnect, to manage this knowledge so that it is

useful for all the organization. The efforts in intranets are successful when they are accompanied by an excellent work in organizational practices. The knowledge depends more on the work in networks of the people and not on the networks seen from its purely technological aspect.

The Intranet applications always must be designed considering to the end users no like consumers, but like actors which stores the information with an objective. The activities of Intranet coordination do not have to be based on the centralization of the control of their development, but in the user's knowledge of the mission and the objectives of this Intranet.

The content is the strategic factor for the success of an Intranet. The form in which this content is managed contributes to the value creation. The amount of accesses, the consultations or use of the built-in tools will depend fundamentally not on the design or atmosphere, but of the value of its contents. One of the challenges of an Intranet is how to develop a content management strategy which responds to the necessities of the users.

Now, let me to share you three experiences in knowledge management introduction at economic area of the Cuban Higher Education Ministry

2.5. CASE STUDIES:

Experiences in knowledge management introduction at the economic area of the Cuban Higher Education Ministry.

2.5.1. Brief characterization of the Higher Education in Cuba.

In Cuba a network of institutions of Higher Education composed by 11 universities exists, 2 higher institutes and 4 adscript centers to the HEM, 15 adscript pedagogical higher institutes and 1 branch to the Ministry of Education (MINED); 4 higher institutes of medical sciences, the Latin American School of Medicine and 9 independent faculties adscript to the Ministry of Public Health (MINSAP); the International Physical Culture University and other 17 institutes that belongs to other Ministries; altogether they are 65 institutions of higher learning..

Product of the enormous efforts made in the development of the higher education, during the revolutionary period they have graduated near as 800000 professionals of who almost 22000 are foreign of 120 countries. But mainly thanks to the human and structural capital whereupon are counted, it is that they are made reality in the 2002 ideas found and put into operation more than 900 Local

Universities Campuses (LUC), distributed in the 169 municipalities of the country and that already in course 2005-06 get to be more than 2100 with a total matriculation of predegree of more than 500 thousand students .

On the other hand in all the system of institutions authorized to make posgrado almost 500000 professionals participated in the 2004 in Courses, Training, Graduates, Masters, Specialties and Doctorates (Viña Brito, 2005).

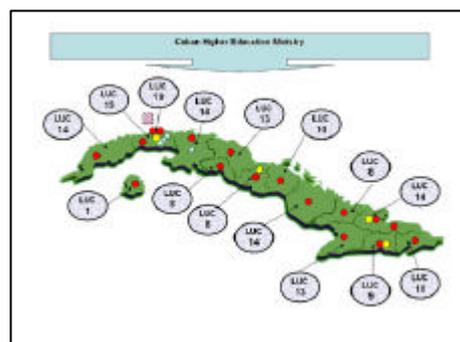


Figure 2: Institutions of higher learning that belong to the Higher Education Ministry and their Local Universities Campuses.

Next we want to very briefly expose three experiences of knowledge management between the organizations of the Higher Education Ministry specifically with respect to the activity of the economic management - financier.

2.5.2. Cases of study.

2.5.2.1. Selection of the countable integral system

Like an own activity of the development of the countable activity in the higher education, at the end of the decade of the 90 the task of the selection and acquisition of the new software for the countable information processing was undertaken - financier. In order to develop it satisfactorily the accumulated experience by many specialists in the organizations of the HEM considered. It is necessary to have in whatever the diversity of organizations (universities, research centers, schools of social workers, enterprise system, etc) as well as its distance of the capital. It was necessary to elaborate the set of main parameters for the selection in precedence. In order to select a new integral accounting system the management of the tacit and explicit knowledge of the countable specialists of higher learning institutions through the following phases was used:

- Constitution of a commission of experts.
- Compilation of the knowledge and existing experiences through surveys, sessions of groups etc.

This was as much carried out remote through the email or the intranet. Later meetings with all the specialists were made.

- Presentation of the results of the surveys to executives of universities, Ministry and research centers own.
- Consensus of all the specialists about the main parameters to consider when selecting the new accounting system.
- Elaboration of an own methodology, that it satisfied to the requirements of the organization with views to develop the selection.
- Definition of the weights to each parameter according to its importance

During this process several discussion and polling cycles were carried out of experts with views to reach the best variant. Finally the commission selected the new integral accounting system, which was reflected in an elaborated Opinion to the effect. This document constituted the final document of the work of knowledge management of hundreds of specialists, technicians, professors, etc of the areas financial - accountants who participated contributing their criteria, experiences and ideas. Later the same one has served to evaluate the march of the assimilation process and operation of the system in all the organizations of the Higher Education Ministry. In addition, the method of used collaborated work has served to undertake the solution of other problems.

2.5.2.2. The process of improvement of the economic and finance management (EFM) of the Higher Education Ministry.

From end of 1999 and like result of the variations of the national and international surroundings, Ministry Higher Education Ministry became necessary the improvement of the EFM at level of the entire Ministry like of each organization individually. It was denominated "New Model of Economic and Finance Management -". The developed process considered the following fundamental elements:

- Initial definition of general lineaments where took part specialists and executive of the superior levels of the pyramid of direction as well as of the organizations.
- Socialization and publication of the results obtained with possibilities of correction from the received opinions
- Development of the work in the base considering the general lineaments and the specific characteristics of each organization.
- Participation of all the possible factors in this process, from the own personnel of the economic

areas, professors, investigators, students, until the political organizations.

- Constant feedback on the results reached as much to level of Ministry as of organization.
- Discussion, publication and exhibition of the results obtained in different meetings and events characterized by the multidisciplinary character. The publication was made as much printed as electronically in CDs and Web site.
- Definition of parameters or exits corresponding to each system or subsystem like components of the defined model.
- Granting of highest priority to the management of the human resources like carriers, disseminators and creators of the explicit and tacit knowledge in the GEF.
- Process of revision and update of all the instructions, resolutions, norms, etc, as well as the recognition of the importance that has the systematization or description of the inherent processes to the EFM. It is not possible to think about the knowledge management without a suitable description and documentation of each one of the processes.
- Definition of metric for each system and subsystem that allow measuring the degree of attainment of the objectives.
- Process of Certification, which guarantees the implantation or assimilation of the defined objectives for each institution.
- Iterative character of all the process which allows, through the knowledge management and the interchange of the obtained experiences to be advancing in spiral towards new race course in the design of the solutions, as well as a greater dominion of the activity.
- Recognition at all the levels of the roll of the new technologies of calculation and communications in this process like via of socialization of the knowledge.

Different methods from scientific work were used being able to be mentioned, among others, the development of experts meetings, development of surveys, document distribution and compilation of criteria, information processing stored in the data bases of the organizations and the Organism which constituted a colossal effort to process the existing explicit and tacit knowledge in the organizations of the HEM with respect to the management economic-financier..

The design and assimilation of the New Model of Economic and Finance Management in the Cuban Higher Education Ministry contributed to:

- Elaborate a real diagnosis of the situation at level of each organization like the Ministry as a whole with the participation of hundreds of experts.
- Define a strategy for solutions design starting of common elements and the specificities of each institution.
- Obtain important results, from the technological point of view, with respect to accounting nowadays on a homogenous information technology platform of processing, as well as a greater culture in the use of these technologies in the economic areas of higher learning institutions.
- Count on fundamental, theoretical and strategic sustenance for the improvement of this activity in the Higher Education Ministry .

2.5.2.3. INTRAECO – Intranet of the economic area of all the organizations of the Cuban Higher Education Ministry.

From year 1999 one works in the design and implementation of a frame of knowledge management for the university management, that it considers all the elements before mentioned, responding to the own characteristics of the universities individually and the ministry as a whole. This project is supported technologically by the extranet designed by the Cuban government where all the institutions of Higher Education Ministry are interconnected. This "freeway" that allows to develop the educational process at a distance, develop investigations and to manage the different processes also constitutes a magnificent platform for knowledge management.

Within the framework of the present project, it was included the improvement of the existing economic area Web site in order to transform it into a management tool of the financial - accountant knowledge of all the universities, research centers, etc. This Web site connects with existing in each university sites. By this way it is created a network of management of financial – accountant knowledge of the Cuban institutions of higher learning. The designed Web site includes fundamental tools of knowledge management processes: forums, applications for the compilation, processing and dissemination of the knowledge, searchers, etc.

In the Higher Education Ministry, the INTRAECO makes possible, among other services, the management of and access to:

- Data warehouse where the main economic and educational indicators are stored associated to the management economic -financier.
- Historical series of indicators.
- Norms and resolutions.

- Description of the processes of the economic area that includes analysis of risks, norms associated, work flow, description of entrances and exits, etc.
- Information on visits made to universities.
- Discipline of information delivery.
- Directory of homologues national and foreign executives to the GEF in the universities.
- Data and text files with the characterization and criteria of the economic work of each university.
- Offices -Dispatches .
- State of the process of certification of the inherent activities to the GEF in the universities.
- The tie news with the thematic ones associated.
- Library in line with numerous articles of experienced specialists nationals and foreigners.
- Works exposed in the different associated scientific events from the GEF of the universities.

Additionally the treatment of management of contents of the site is begun, introduction of the conceptual maps and boards of commandos so that the INTRAECO becomes a useful tool in the decision making, not only at level of the Ministry, but also in each organization.

The project of knowledge management in the economic – finance management of the Cuban universities has had determined advances, mainly in the technological aspect, even being left several actions to develop in the organizational field. Here we talked about the executives, technicians, its methods, customs and abilities as well as the fear and resistance to the change. It is necessary to incorporate the knowledge management in the organizational culture and performance of each one of the executives and technicians of the economic areas.

3.0 CONCLUSIONS

- The managerial complexity of the universities before the challenges of century XXI requires of the introduction of the knowledge management in the management of its processes
- It is indispensable the design of a knowledge management framework that suitably balances as much the technological elements like the organizational. This is valid also during the implantation process.
- The steps taken in the economic and finance management of the Higher Education in Cuba as far as the introduction of the knowledge management have contributed to the theoretical and strategic sustenance for the improvement of this activity.
- From its creation in 1999, the INTRAECO continuously has transformed and extended his roll as support to the decisions in the Higher Education

Ministry using knowledge management incrementally.

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