

Development of the Knowledge Management System as an Innovative Strategy for the Strengthening Of Human Talent in an Oncological ips

MBA Ever Ángel Fuentes Rojas¹, Fabio Steven Zúñiga Moya², Neyder Farit Fino Velandia³

¹(Bogota, Faculty of Engineering/ Universidad Libre, Colombia)²(Bogota, Faculty of Engineering/ Universidad Libre, Colombia)³(Bogota, Faculty of Engineering/ Universidad Libre, Colombia)

ABSTRACT : Knowledge currently plays a crucial role for companies, as it is considered a factor for them to be permanently established in the market, so they seek scales to understand and recognize their knowledge and information acquired and likewise, to enhance this information for their use.

The development of the study was carried out in an institution that provides health services, this has oncological character and sponsors its employees in the educational field, either by offering access to postgraduate and complementary courses such as specialization, diplomas or even training corresponding to undergraduate or technological careers, in order to improve the processes of the institution, encourage professional growth and in turn, generate loyalty of employees. The industry expects a return on its investment through the applicability and transmission among its employees.

Thus a knowledge management system was established, which was carried out from the system of Nonaka and Takeuchi, this system was chosen from a diagnosis of the conditions and needs of the oncological IPS, where it was found that its viability is 80%, quite high compared to other systems studied. In that order of ideas it was concluded that one of the most important phases within the theory is the combination, likewise, a macro in Excel was designed to control and manage and apply knowledge efficiently, therefore, indicators were added to facilitate the study and the collection of information, in order to perform a deep monitoring of such data analyzing the scope of the objectives shown in the strategic direction.

KEYWORDS- Oncological IPS, management systems, knowledge or information io

Date of Submission: 16-11-2022

Date of Acceptance: 30-11-2022

I. INTRODUCTION

The Knowledge for companies is particularly difficult to locate and generalize, because each one manages a different approach, carrying out processes depending on their product or service in this way it is necessary to perform a deep analysis within the institution understanding the type of information and how it is transferred within it. Therefore, this is the one that drives the economic growth of the organization, in this sense communication plays a key role, it is not a tool manager to achieve results, but on the contrary, it must be immersed in all developments, be horizontal, have opinions and be recognized by the entire business community therefore will be reflected the transmission and socialization of experience among all employees. [1]

In this order of ideas, knowledge management plays a very important role for organizations and therefore it is of great relevance its creation and transfer where an adequate management and use of it is made because it has an invaluable value. In addition, it is necessary to take into account the policies established by the oncological IPS to promote the growth of its employees, to specialize and better understand their work that they implement every day, it has been shown that sometimes they benefit from these exchanges and end up changing to other companies, resulting in a loss of investment because there is no record of the impact of these operations in improving processes.

The development of a knowledge management system that hereinafter will be called S.G.C, which allows the data can be transformed into useful information and that this is used efficiently among employees of the institution, use of educational investments by the IPS oncology, improve competitiveness in the market with the use and management of knowledge, reducing costs in an innovative way.

The study was conducted in the IPS oncology, this is a private nonprofit institution, which has 60 years of experience in the market [2] and aims to implement preventive and corrective actions of cancer. Some of the programs it manages are the following:

- Breast Cancer Prevention
- Prostate cancer prevention
- Gastric cancer prevention
- Skin cancer prevention

The oncology IPS is located in Colombia, so it must be governed under the laws of this country. Additionally, a series of laws are established such as: Law 1955 of May 2019 Chapter No. 5 Pact for Science, Technology and Innovation. Chapter N°15 Pact for Effective Public Management. In Chapter N°5 it is mentioned as a system to build the knowledge of the Colombia of the future. [3]

II. METHODOLOGY

In order to obtain sufficient information, a clear and concise methodology was proposed and carried out within the study, which allowed the development of the C.G.S. according to the needs of the oncological IPS.

To carry out the diagnosis of the S.G.C within the institution several factors were taken into account, likewise the criteria were prioritized and the valuation of these by means of a classification; this procedure was performed in the oncological IPS in order to understand what the main causes or reasons are why the leakage of knowledge occurs and thus have a clear picture in the organization. [4]

The following is a breakdown of the specific objectives that were carried out in the research:

1) Select a knowledge management system, relating the strategies for the development of new knowledge among the collaborators of the health service provider institution.

Within the investigation of the different knowledge management systems that are applied in different organizations. A study was conducted identifying the characteristics of the most successful that have been developed in companies and thus the needs of the oncological IPS were established within its development.

2) To propose a knowledge management system obtaining a tool that adds value to the organization and maximizes knowledge management.

From the study conducted, the Nonaka and Takeuchi's C.G.S. was selected because it meets the needs and characteristics of the oncological IPS, this was proposed explaining the 4 phases socialization, externalization, combination and internalization.

3) Present the system with management, the proposed knowledge management model defined.

After having identified that the S.G.C of Nonaka and Takeuchi is the most appropriate to implement in the oncological IPS a presentation was made where the positive factors were detailed as the use of knowledge and educational investments that the institution has made in the workers. Improving the quality of services, customer service and relationships with suppliers.

3) Propose indicators; to make the evaluation of the system.

So that the project can be monitored, indicators were proposed in order to measure and quantify the progress and knowledge that is generated within the institution; in this way the oncological IPS evaluates the knowledge management through questions that allow to establish if the employee improved the learning process, the periodicity is monthly so that a correct and real control is taken.

III. RESULTS

The initial diagnosis is an extremely important tool, as it reflects the real state of the oncological IPS, this was done from an evaluation, which was conducted to know the current situation in which it is, understanding how advanced the implementation of knowledge within the institution is, to clarify the aspects to be strengthened by the entity. In this way and thanks to a meeting with the deputy director of human talent, the evaluation was carried out and a qualification was given to each of the criteria.

Figure 1. Overall Rating



Source: Authors, 2022

Initially, we observe the total score in Figure 1, this is at level 1 with a score of 8.9 which is critical for the institution, as it indicates that the policy of knowledge management and innovation is considerably low.

Figure 2. Consolidating the culture of sharing and disseminating

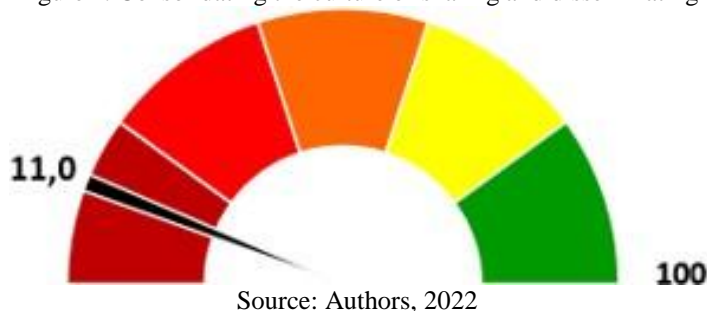


Figure 3. Identification of the most relevant knowledge in the institution



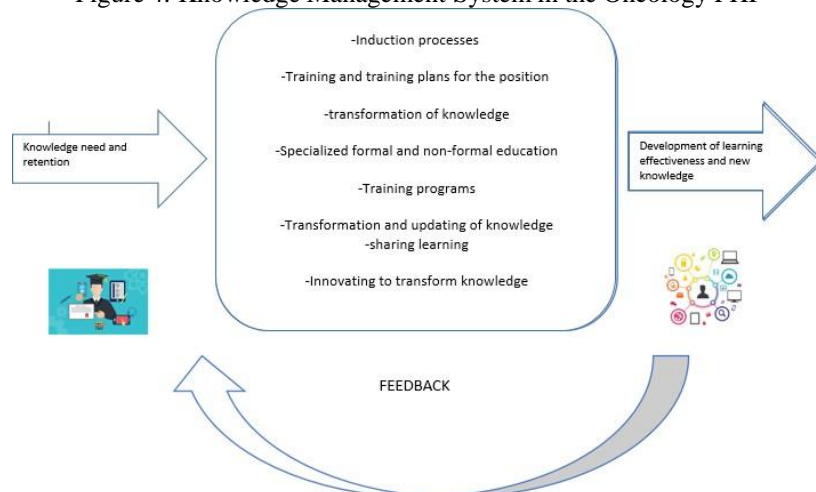
Source: Authors, 2022

From the results of the diagnosis according to figures 2 and 3, it can be understood that the real state of the oncological IPS is complex, while the institution recognizes the internal knowledge leakage, however, it does not take any action to prevent this intellectual and economic loss [5]; in the same way, the organization accepts that it needs, urgently, the implementation of innovation processes and the development of a S.G.C. to take advantage of the intellect of its collaborators; the institution does not identify, classify or update the tactical knowledge, which has not been explained or communicated verbally or visually with people. Finally, the institution does not have methods for evaluating the effectiveness of employee training where information sharing, and feedback is sought.

According to the meetings held with the oncological IPS, some essential characteristics were established, which should meet the C.G.S. to implement, for this reason, an investigation was conducted where it is concluded that the most adaptable is the system of Nonaka and Takeuchi, because it has a feasibility of 80% compared to the others, identifying it as one of the most successful applied in the industry, since at present it has been shown that with the mentioned model has been able to reach innovation [6]:

Figure 4 shows the system of the oncological IPS, in the inputs, the need for a person to acquire knowledge is observed, the person in question performs studies of formal and non-formal education with processes of transformation and updating of information sharing learning in their environment, carrying out induction activities and training programs. In addition to this, new knowledge is generated in the output and the corresponding feedback is carried out. [7]

Figure 4. Knowledge Management System in the Oncology PHI



Source: Authors, 2022

Initially, Nonaka and Takeuchi's system raises the tacit knowledge which is defined as the experience that the person has acquired in learning and daily work as shown in Figure 5, it is necessary to clarify that this type of information cannot be structured or stored; the explicit is the one that can be found in digital or written form and is structured and articulated. [8]

Figure 5. Tacit and Explicit Knowledge

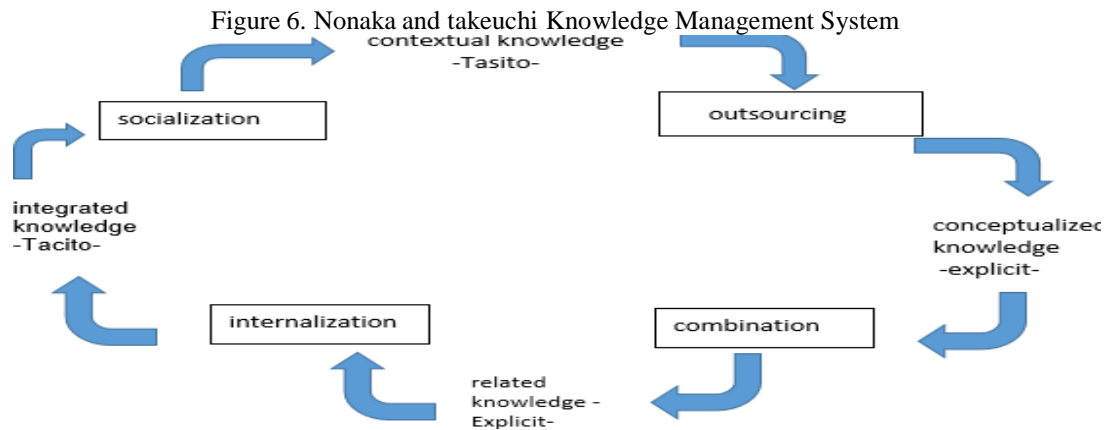
Tactical Knowledge (Subjective)	Explicit Knowledge (Subjective)
-Knowledge from experience (Body) -Simultaneous knowledge (here and now) -Analog knowledge (practice)	-Knowledge rational (mind) -Sequential knowledge (there and then) -Knowledge digital (Theory)

Source: An interpretation of Nonaka and Takeuchi's concept of knowledge management using literary fiction, 2012

Nonaka and Takeuchi's system (see figure 6), in first measure, establishes the socialization where the objective of the organization is to collect the tacit knowledge with the purpose of carrying out trainings and spaces to share the information; the externalization tries to transform this by means of clients.

At this point, it is necessary that tacit knowledge is presented in the form of a concept, for example: metaphors, analogies, assumptions, models and theorems.

Subsequently, the different types of knowledge are established and by means of classification, addition, combination and explicit categorization, new knowledge is generated, since it is shared among the employees of the institution. This stage is of great importance since the processing of information is related and finally, internalization is where the acquired learning is incorporated. [9]



Source: Knowledge Management, 2005

In this order of ideas, it is considered that the most important moment based on the model of Nonaka and Takeuchi is the combination phase, which is generated by relating the processing of information and the internalization of organizational learning, therefore, a macro in Excel was developed as shown in Figure 7, with the aim of managing the knowledge of employees [10], identifying the most important indicators, such as the average educational allowance per employee, knowledge management, employees with formal study, induction focused on the position and percentage of request for educational subsidy; where the information is also graphed, the institution can visualize the number of workers who have requested educational subsidy: [11]

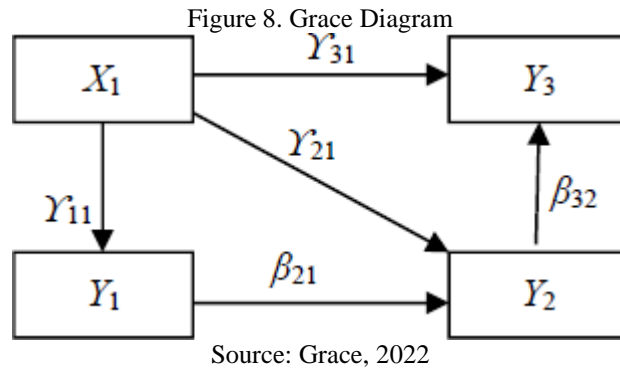
Figure 7. Knowledge Management Macro System

Source: Authors, 2022

Finally, the structural equations were raised, these models have a great complexity within the business development since they do it through regression, simultaneously, these are developed with the aim of analyzing human behavior and how they relate within the organization.

Among the authors who have worked more on this topic is Steve Kline, who points out that one of the key factors of success of the process is the quality of the hypotheses that are worked, taking into account that at any time an unexpected result can occur, so it is important to understand the multiple correlation. [12]

Grace is a structural equation model with two or more structural equations to model multivariate effect-response relationships (see Figure 8). [13]



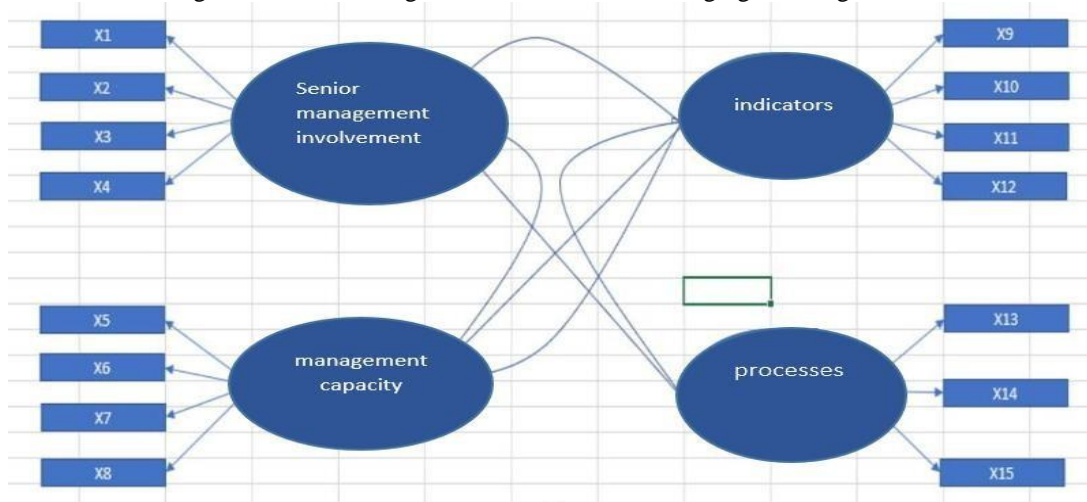
The model evidenced in Figure 8, structural equations are observed, which can be defined as $Y_1 = \alpha_1 \gamma_{11} X_1 + \zeta_1$; $Y_2 = \alpha_2 \beta_{21} Y_1 + \gamma_{21} X_1 + \zeta_2$ and $Y_3 = \alpha_3 \beta_{32} Y_2 + \gamma_{31} X_1 + \zeta_3$, assuming that the equation $Y_1 = \alpha_1 \gamma_{11} X_1 + \zeta_1$ represents the effect of X on Y, the lines establish direct relationship between the two variables, (β) means effect on alpha (α) and ζ means an error. [14]

STRUCTURAL REGRESSION MODEL

Involvement in senior management:

- X1 Knowledge of company policy to transmit knowledge
- X2 Knowledge management as a central aspect of the organization
- X3 Allocation of budget items
- X4 Knowledge management follow-up meetings (See Figure 9). Management skills:
- X5 Existence of a group or person in charge
- X6 Training for the knowledge management team
- X7 Attendance at meetings
- X8 IT environment for knowledge management
- Indicators:
- X9 Development of means for linking knowledge to financial results
- X10 Development of indicators to manage knowledge
- X11 Knowledge assessment on a regular basis
- X12 Review and improvement of indicators
- Processes:
- X13 Identify knowledge deficits and corrective strategies
- X14 Formalization of the process of transferring knowledge and best practices
- X15 Valuing and transferring tacit knowledge

Figure 9. Structural regression model for knowledge-generating factors



Source: Authors, 2022

Figure 9 shows a total of 15 variables which correspond to the involvement of top management, management capacity, indicators and processes; in this order of ideas the implementation of a multiple linear regression equation is of great importance for the development of knowledge management within the institution where the organizational culture plays a very important role.

IV. DISCUSSION

The article "Introduction to knowledge management and its application to the public sector" drives the objective of understanding and solving the problem of C.G.M. in the public sector in Chile, defines four (4) elements through which the theoretical framework and systems are established. Finally, it describes the tools used in the particular processes and the reasons for it, in that order of ideas, it is worth asking what is essential to implement C.G.S. in companies and in different business sectors? A possible answer may be in that it emphasizes the need to clearly integrate information and changes in the structure of the system [15], it is to generate an analysis of knowledge management in Chile, as it is carried out in research centers, as well as repositories. This review is done in a very broad way, using three approaches: Psychosocial, business and technological, followed by organizing the information by topics, from the general to the particular, in order to make a compilation and its historical journey in the country. [16]

Based on the above, it is explained how knowledge developments in Chile are of high quality, since research teams have high standards of demand, an example is presented in the field of psychology, which focuses on analytical issues about organizations and their corporate culture, also in human resources models and skills management as a catalyst. On the other hand, making in-depth analysis and creating clear summaries on specific topics, another example is its business approach, where it comments on the importance of information, as it helps to create values and offer new opportunities, that way companies will be much more competitive in the market. [17]

The "Introduction to knowledge management and its application to the public sector" presents a great scope, however, it is not possible to identify knowledge management, therefore, it is important to propose an ambitious model, where it is necessary to start from the operational processes of the organization, in order to establish the basis and have a clear information management in a tangible reality, therefore, the macro was developed within the oncological IPS.

V. CONCLUSIONS

Knowledge nowadays plays a fundamental role for companies, because it is considered a crucial factor for them to establish themselves permanently in the market in order to adapt, survive and compete successfully.

It is extremely important to monitor the indicators periodically, starting from the macro knowledge management in order to evaluate to what extent or to what extent the objectives set by the business are being achieved.

It is important to strengthen the values and principles of employees in order to establish a culture of sharing and disseminating the knowledge acquired through studies subsidized by the oncological IPS in question, establishing formal spaces to share and provide feedback on their knowledge within the programmatic agenda of the institution, evaluating its effectiveness and carrying out improvement actions.

GRATEFULNESS

The authors wish to thank the subdirector of human talent Paola Archila, the Universidad Libre and the IPS oncology team for their support, motivation and understanding throughout the study.

REFERENCES

- [1]. Lozano Luna Alejandro. 2018. Gestión del conocimiento. Instituto tecnológico de Orizaba. Retrieved from <https://www.gestiopolis.com/gestion-conocimiento/>
- [2]. IPS ONCOLOGICA (online). Retrieved from <https://www.IPS ONCOLOGICAcolombiana.org/la-institucion/>.
- [3]. Ministry of health and social protection. Law 1384 of 2010. Bogotá D.C., 2010. Retrieved from <https://www.minsalud.gov.co/sites/rid/Lists/BibliotecaDigital/RIDE/VP/FS/fuentes-y-usos-n-de-recursos-del-sgss.pdf> [date accessed July 2021].
- [4]. Hena Henado, M. 2021. Guía para evitar o mitigar la fuga de conocimiento de las entidades públicas. Departamento administrativo de la función pública. Recuperado de https://www.funcionpublica.gov.co/documents/34645357/34703525/Guia_para_evitar_mitigar_fuga_conocimiento_entidades_public_v1.pdf/747acfc8-4d3e-bca6-c46c-43be4f3c384d?_=1633738668395
- [6]. Luján Ferrer, M. 2010. La administración de la educación no formal aplicada a las organizaciones sociales: Aproximaciones teórico-prácticas. Retrieved from <https://www.redalyc.org/pdf/440/44013961006.pdf>
- [7]. Sabrina Rojas, R. 2017. Knowledge Management based on Nonaka and Takeuchi Theory. Retrieved from <https://repositorio.uide.edu.ec/bitstream/37000/3758/4/E2%80%9CLa%20Gesti%C3%B3n%20del%20Conocimiento%20basado%20en%20la%20Teor%C3%ADa%20de%20Nonaka%20y%20Takeuchi%20E2%80%9D.pdf>.
- [8]. Mihi Ramirez, A. 2011. knowledge creation, organizational learning and their effects on organizational performance. Retrieved from https://www.researchgate.net/publication/260383982_Knowledge_Creation_Organizational_Learning_and_Their_Effects_on_Organizational_Performance.
- [9]. Frías Navarro Rosalba. 2012. An interpretation of Nonaka and Takeuchi's concept of knowledge management using literary fiction.
- [10].

- Cenes. Retrieved from <https://www.redalyc.org/pdf/4795/479548635008.pdf>
- [11]. Balagué, N., Düren, P. and Saarti, J. 2015. Benchmarking the knowledge management practices in selected european higher education libraries. *Qualitative and Quantitative Methods in Libraries*, 4, 331-341.
- [12]. Retrieved from <http://qqml-journal.net/index.php/qqml/article/view/250>
- [13]. Acosta, P., J. and Nakata, L. E. 2012. Conditions of knowledge management that favor organizational learning: a comparative study. Retrieved from revistas.uexternado.edu.co/index.php/sotavento/article/download/3348/2998.
- [14]. Arias, P. J. and Aristizábal, B.C. 2011. The data, information, knowledge and their productivity in public sector companies in Medellin. *Economic Semester*. 4 (28) 95- 110. Retrieved from <https://journals.udem.edu.co/index.php/economico/article/view/370/329>
- [15]. Zabaleta de Armas Milena. 2020. Methodology for estimating and evaluating a knowledge management model using structural equations. Scielo. Retrieved from http://www.Scielo.org.co/scielo.php?script=sci_arttext&pid=S0121-37092020000100094
- [16]. Escobedo Portillo, M. 2016. Structural Equation Models: Characteristics, phases, construction, application and results. Retrieved from https://www.scielo.cl/scielo.php?script=sci_arttext&pid=S0718-24492016000100004
- [17]. Romero Gonzalez, M. 2019. Success generating factors for knowledge management through the application of a structural equation model. Retrieved from http://www.scielo.org.pe/scielo.php?pid=S1019-94032019000200009&script=sci_arttext
- [18]. Peluffo, B. 2002. Introduction to knowledge management and its application to the public sector, Latin American and Caribbean Institute for Economic and Social Planning. Retrieved from <https://biblioteca.marco.edu.mx/files/introduccion20gestion20del20conocimiento.pdf>
- [19]. Barrasa, A. 2002. Journal of Work and Organizational Psychology Retrieved from *La gestión del conocimiento: tendencias y desarrollos en España*. Retrieved from https://www.researchgate.net/publication/259849378_La_gestion_del_conocimiento_tendencias_y_desarrollos_en_Espana
- [20]. Avendaño, P., V. and Flores, M. 2016. Theoretical models of knowledge management: descriptors, conceptualizations and approaches. *Entrenciencias: dialogues in the Knowledge Society*, 4 (10), 201-227. Retrieved from <https://www.redalyc.org/pdf/4576/457646537004.pdf>.

MBA Ever Ángel Fuentes Rojas, et. al. "Development of the Knowledge Management System as an Innovative Strategy for the Strengthening Of Human Talent in an Oncological ips." *International Journal of Engineering Science Invention (IJESI)*, Vol. 11(11), 2022, PP 29-36. Journal DOI- 10.35629/6734