Model for Measuring the Performance of Knowledge Management in Organizations

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Abstract—**It shows the different concepts related to knowledge management, the importance of this and how should measure the performance of knowledge management in order to have a viable model to ensure the proper functioning of the organization. A simple structure is proposed for the model, composed mainly of actors, resources and indicators. This structure is detailed a little in this article and the general model is proposed.**

Index Terms—**Knowledge management, measuring, models, indicators, performance.**

I. INTRODUCTION

Nowadays the enterprises need evolving and changing as time the environment and customer requirements do, besides they do not need to race in the local market, due that agreements and globalization take us to race in a global market.

There isn't a knowledge management model applicable to any organization, each one should guide that knowledge management towards them objectives and requirements, hence the importance of measuring if the implemented model or system is appropriate to our enterprise.

It's necessary a model in order to ensure an appropriate performance measuring of knowledge management, focused on actors involved in create, generate and communicate the knowledge, this model should integrate to organization and consider its particularities in order to get a realistic measure and take decisions based on it.

II. KNOWLEDGE MANAGEMENT CONCEPTUALIZATION

No doubt one of the most talk about aspects, in organizations and science community, is knowledge management. The newest technologies have maked easier the data and information collecting than few years ago, but we do not know how use that information, thence the value of knowledge management.

The knowledge could be defined like the information set that lets me to do an action or to generate value added to a process, that is why we listen knowledge is 'how to do the things', 'how the process and the people interact in the organization. With the knowledge definition clear can say management is the process that make things possible, it can also be said that to manage is generating value added through

administrative processes (planning, direction, organization, control) with the goal of achieve a specific objective, then it is possible to say that knowledge management is the process that ensure to get and to energize knowledge, ergo it is of profit for the organization.

According to [1] the knowledge management is: to create, to get, to keep, to hold, to use and to process the last and new knowledge in the face of environment changes to be able to put the information at reach of each employee, in the moment that he need it in order to ensure the effectivity of his activity.

III. IMPORTANCE OF KNOWLEDGE MANAGEMENT IN ORGANIZATIONS

In a changing and globalizing world identifies that organizations need to adapt to environment in order to ensure their survive, thus it is necessary to know the external and internal variables of our organization, with the purpose of adapt themselves, to people and real time requirements, or even anticipate them, this process requires a lot of information that must be executed nimbly in order to obtain knowledge that improving and supporting the organization processes, but if this knowledge don't getting arrive to the correct place and time, maybe could be late for the organization, thence the value of an appropriate knowledge management model implementation, to survive in a changing environment and to evolve for achieve better effects in a global and competitive market.

But the work is not end in knowledge management model or system implementation, it is necessary to know if the applied knowledge management is being efficient, because could exist a model that is not giving results and could be one more expense for organization and can help in its fall instead its grow.

IV. METHODOLOGY TO APPLY

To develop a methodology to create a knowledge management measuring model, we propose the following steps, it can be observed in the Fig. 1.

- First, we made an investigation of articles and books literature about the measuring of knowledge management, in which found the article [2], model in which we base on in this article.
- Identify the main actors and stakeholders in knowledge management.
- Identify the involved resources in knowledge management.
- Establish the pointers to an objective measure in knowledge management.
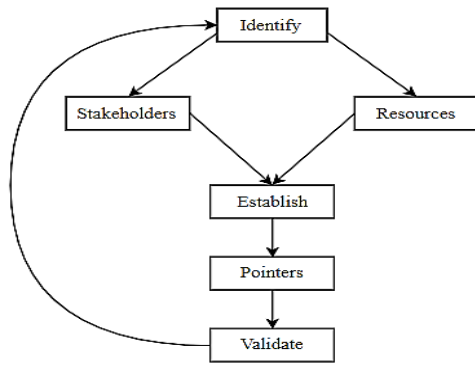- Validate the pointers and the model.

Fig. 1. Methodology to create a knowledge management measuring model creation. Source: The authors.

A. Identify

The first part of the methodology is to identify the actors involved in knowledge management, in this article we propose stakeholders that we consider exist or should be exist in most organizations, the person in charge of the knowledge management system is who may identify to measure them and to apply the respective pointers in order to estimate the performance of model components and to obtain a general performance at the end [3].

B. Stakeholders

The stakeholders of knowledge management system are allied with the information that system handles, includes:

- Employees: They will be considered whom adding information to the system and influencing in knowledge and information management.
- Customers and users: classify the most important customers to establish his requirements and to determine his position in knowledge management system.
- Experts: Is the group in charge of knowledge and its management in the organization.
- Related entities: those interested parts or involved with the knowledge management system, could be the informatics system providers, partners or other type of providers.
- Auditors: If applied, is the team in charge of verify the system works.
- Information and communication system: Is the software that support the knowledge management in the organization, it is a fundamental part, as a bad or limited information gathering could represent bad or limited performance.

C. Resources

This part includes all the fundamental parts of the organization to management process, it makes reference to knowledge in the people and required infrastructure to ensure this.

- Technologies: is to know how the things made of, includes the people knowledge and interaction with knowledge management.
- Methodologies: procedure integration with the goal of ensure the methods, includes control elements to guarantee the method still being objective.
- Infrastructure: group the necessary equipment and hardware to guarantee the knowledge management.

D. Strategic Processes of Support to Knowledge Management

According [4] the strategic processes of knowledge management are:

- Identify: determine the current state of knowledge inside and outside of the organization.
- Acquire: is responsible of keep record about the knowledge produced by organization and exist.
- Retain: allow to have the information available, in such a way its recovery will be agile and keep safe the content.
- Develop: increase qualitatively and quantitatively the organization knowledge from produced by own members or stakeholders [5].
- Spread: guarantee organization elements have effective access to the information.
- Use: provoke change and give value from the use of information and knowledge [5].

In Fig. 2 can observed the relationship between support processes and the mentioned part of the model, where support processes are immersed on stakeholders, resources and pointers proposed, we could say that these are knowledge facilitators.
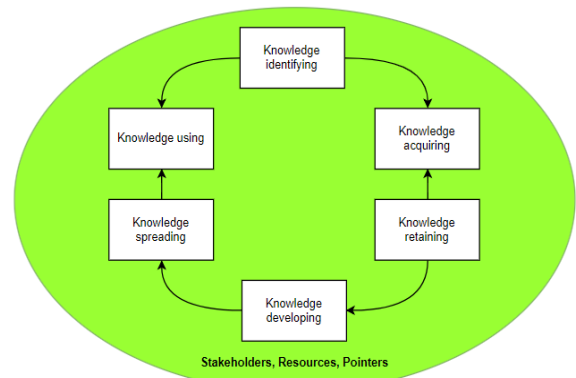

Fig. 2. Strategic processes of knowledge management. Source: The authors.

E. Indicators/Pointers

Below, it shows strategies to measure organization general performance, some of this techniques are applied subjectively, however, is better those that applied objectively like for example productivity. With productivity I can get out my company efficiency through time, dividing the current over the last production (in same unities) achieving to know if have or not an increasing performance with respect to last [6]:

- The improvement of product and service quality, for example, the efficiency can be measured;
- $12/20 = 60\%$, a quality of 12 points over 20 points indicates an improvement opportunity at time the things do not do of better way.
- Productivity.
- Innovation capacity.
- Competitive capacity and its market position.
- Proximity to customer and his satisfaction.
- Employee satisfaction.
- Communication and knowledge exchange.

These techniques can be applying to a knowledge management model, however is recommendable to use more

appropriate methods to evaluate the knowledge management performance, how looks in Table I.

TABLE I: POINTERS IN KNOWLEDGE MANAGEMENT PERFORMANCE
SOURCE: AUTHORS ADAPTATION [2], [7]

Category	Sub-category	Research´s
Qualitative analysis	Questionnaire	[8]
	Expert interview	[9]
	Critical factors of success	[10]
Analysis of financial indicators	Return on investment	[11]
	Net present value	[12]
	Tobin´s q	[13], [14]
Analysis of non-financial indicators	Communities of practice	[15]
	Individual, context, content	[16]
Internal performance analysis	Balance Scorecard	[17]
	Activity based evaluation	[18]
External performance analysis	Benchmarking	[19], [20]
	Better practices	[21]
Project oriented analysis	Social patterns	[22]
	Project management models	[23]
Organization oriented analysis	Intelectual capital	[24], [25]

It is recommendable to apply the indicators to stakeholders and resources in order to ensure the right operation of the model parts, also should make general level pointers with the purpose of identify problems in parts interaction.

F. Validate

In this implementation phase it is verified if the system is measured properly, must be obtained an efficiency global indicator (of objective type) with the goal of propose improvements or even the quality management system restructuration, also list the found problems to give them the best possible solution.

V. MODEL FOR PERFORMANCE MEASURING OF KNOWLEDGE MANAGEMENT

In the Fig. 3 looks the model and its respective connections to an appropriate operation.

The model shows the aspects used in his approach (numeral 4 of this article) and the pointer like main source of problems filtration for continuous improvement having in mind the proposed factors, also have in count the model should interact with external factors continually in order to improvement the processes and to survive in the time.
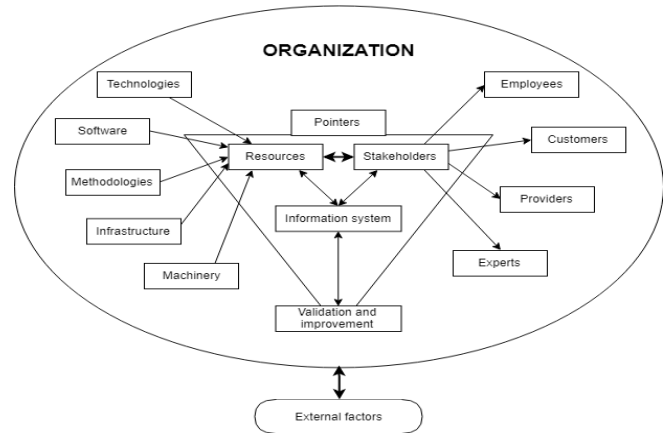

Fig. 3. Propose model for knowledge management measuring. Source: The authors.

VI. CONSIDERATIONS FOR MODEL VALIDATION

For the validation of the model, time and evaluation of the results are required in the medium term, so it cannot be presented in this document yet.

In the model presented in this research, the dynamic analysis of the systems with the knowledge management methodology supported by the European Guide is combined and aims to create an evaluation instrument for the knowledge management network in the introduction of Incremental innovations in products, services and processes for a company. that display a range of possibilities for the development and innovation of social technologies. Therefore, this leads organizations to increase their competitiveness and reduce the socio-economic difficulties that afflict both.

In addition, it is possible to deduce that the competitiveness of an organization increases when the lines of knowledge and methodologies act synergistically together with contextual factors such as the country's commercial policies, fiscal policies, investment security and others, achieving economic development and productive in the organization.

VII. CONCLUSIONS

- A knowledge management model implementation is not guarantee of its right operation in the organization, or even it will be the right one so that should make a measuring and improvement of performance of this in order to achieve better results in the organization.
- The performance measuring of a knowledge management model or system, should be made objectively with the purpose of avoid ambiguities and evaluate the model correctly.
- It is important to validate and verify the right operation of knowledge management model integrating appropriately the resources and stakeholders to clarify them by means of pointers.
- The better way to measure knowledge management performance is through pointers, which can indicate us where problems could appear to give them a solution.

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