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INNOCUOUSNESS + KNOWLEDGE MANAGEMENT A CONTRIBUTION TO PROCESS IMPROVEMENT

García Pulido, Yadrián Arnaldo^{*1}, Castillo Zúñiga, Victor Javier², Medina León, Alberto³, Medina Nogueira, Daylín⁴, Mayorga Villamar, Carmen Manuela⁵

* Quality Management Department, Matanzas University, Cuba

²Business Administration Department, Regional Autonomous University of Andes, Ecuador

³Engineering Department, Matanzas University, Cuba

⁴Knowledge Management Cathedra, Matanzas University, Cuba

⁵Professor, Uniandes University, Ecuador

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ABSTRACT

The processes improvement is inherent to the business management. In the competitive current market, the businesses adaptation capacity is fundamental. The continuous improvement becomes into the reason of being of the companies, being adapted to the clients, being more efficient and winning in flexibility in the face of an extremely unstable economy. Several tools have been developed with the objective of improving the processes, however the integration of elements of other knowledge areas has been not very employee. The knowledge management offers a solid base to promote the continuous improvement and the HACCP system methodology allow to carry out this objective. The present investigation proposes a way for the processes improvement starting from the elements combination of knowledge and innocuousness management. The proposal leaves of the determination of the process critical activities sustained in the information and the pursuit and control of the corrective measures, what generates new information that stimulates the continuous improvement. At this way the processes are more and more efficient and effective in function of the market and the business characteristics, what assures the business success.

INTRODUCTION

A managerial culture guided to the continuous improvement, the systematizing of the processes, the team work and the creativity, sustain it the advantages of business management with processes focus [1]. The current processes management responds to continuous improvement models [2] that are based generally in the PDCA cycle. The processes subject to the different management systems are immersed in this tendency [3].

There are more than enough reasons to improve the processes, among them [4]:

- Every day new methods, programs and teams arise.
- The atmosphere of the company changes, the efficient processes become obsolete in a short time.
- The consumer's and client's expectations change almost every day; what was excellent yesterday scarcely satisfies today's necessities and it is inadequate tomorrow.
- People linked to the process increase their capacities, and it implies an increase of opportunities for the purification of the process.
- The careless or not assisted processes demean with the course of time.
- Independently of the good thing that it is today the process, there will always be a well road. All that needs to make is to discover it.

At this way the continuous improvement contribute to the processes quality and consequently to the final product and clients satisfaction. The improvement should be impelled by the constant research of satisfying the consumers. In clients are the causes of the improvement and their purpose.

The above-mentioned explain the necessity of having a good base of information that registers the results of client-supplier interaction. The knowledge generated of this exchange, constitutes the sustenance for future improvements.



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According to [5] the knowledge management is the new management paradigm that relates the growth of the company and the services offer it. The knowledge management is the organization know-how valuation. It demands people to understand that it is important to share from a rational point of view, and it is necessary to share with other organization members [6].

Knowledge management is the process that promotes the generation, collaboration and use of the knowledge for the organizational learning and innovation, with which new value is generated and the level of competitiveness rises for the sake of achieving the organizational objectives with efficiency and effectiveness [7].

This point of view bears implicitly the paper of knowledge management for the continuous improvement of the processes, due to generate value that surrenders in product or service to the potential clients.

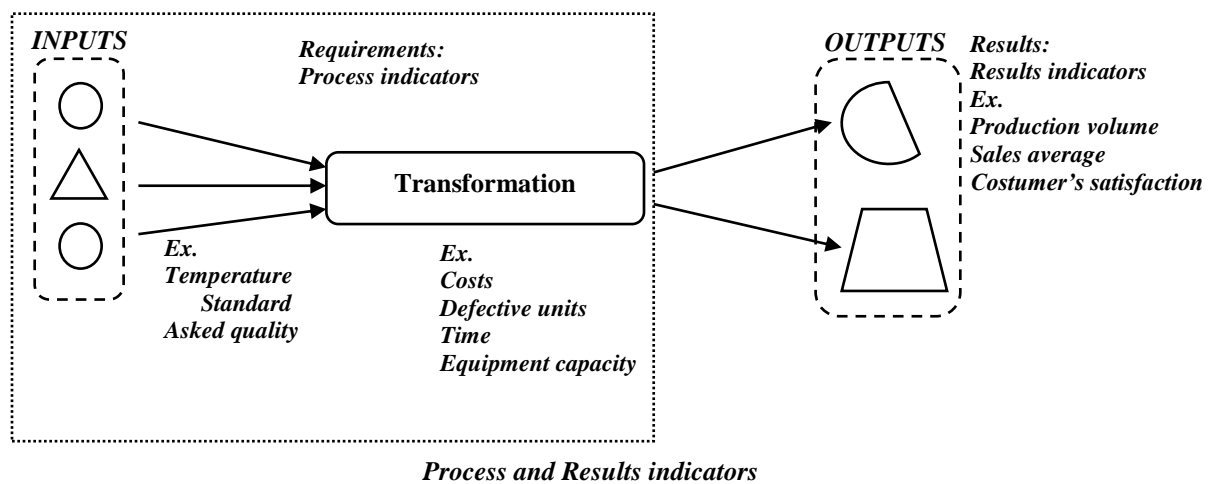
Also it contributes to the business growth starting from the surveillance of the opportunities that arise in the environment and the constant learning from the management errors in the past.

This surveillance not only settles down toward the environment, but also toward the interior of the organization mediating management indicators. The management indicators, can be considered in two big groups: of process and of results.

The process indicators are focused on the inputs quality (execution of the requirements) and on the transformation quality, they are essentially operational.

The results indicators, point out to the achievement of process objectives and they are related with the execution of product or service the requirements in correspondence with the clients' demands (Figure 1).

Figure 1:



Be already indicators of process or results, these are settle down and measure during and at the end of an activities sequence that compose the process [8-13]. Therefore processes improvement, implies it to evaluate each one of the activities and settle down control indicators that guarantee the realization of the following step according to the requirements [14-15].

In 2005 the International Standard Organization published the ISO 22000:2005 that it proposes as main tool the HACCP system [16]. This tool for the innocuousness management is not unaware to the processes management, due to it promotes in its conception the processes focus [17].



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The HACCP system is based on the identification of critical control points that constitute actions or activities that commit the final product innocuousness [18-19]. With this philosophy, it is possible to settle down in the processes management, those activities whose outputs commit on high level a results indicator behavior or those activities that an incorrect realization implies damages during the transformation.

These activities constitute the critical points of the process, therefore their pursuit and control, allow to identify improvement resource and in addition the process improvement.

RELATED WORK

Knowledge management

The knowledge management has changed the form that organizations management their processes, due to the necessity of being able to have reliable, entire and oportune information in all moment that contributes to the execution of their strategic objectives [7]. Authors like Salazar Castillo and Zarandona Azkuenaga distinguish the management by knowledge objectives focused on: the flexibility, the learning, the reduction of costs, the organizational efficiency, the innovation, the continuous improvement, the productivity and the competitiveness; but all they can be summarized in making a good use of the available knowledge to develop new business opportunities [20].

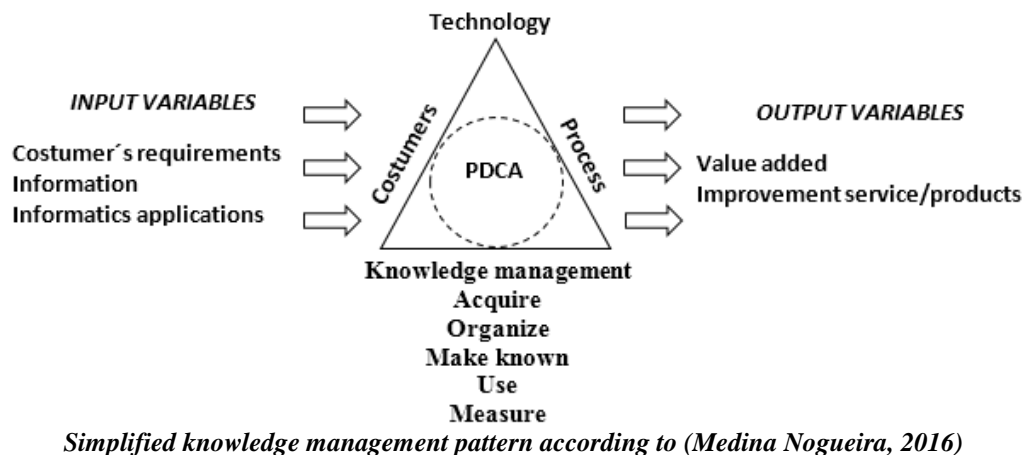
Knowledge is considered one of the most valuable resources in the current society and it has been identified as key element for competitive advantages achievement, even above the tangible ones. It is propose that knowledge is: to create, to innovate and to develop new ideas [21]; the capacity to solve a problem with effectiveness [22]; a mixed flow of experience, values and contextual information to evaluate and to incorporate new experiences and information [23].

The knowledge management model proposed by [7] defines as inputs variables: necessities and demands of the interest groups, not structured information and specialized software supports for their management. It integrates and manage the key factors (people, processes and technology) and the processes for knowledge management (to acquire, to organize, to disclose, to use and to measure), based on the continuous improvement of Deming cycle, to create products/services in those one that adds value to the information and consequently to the processes.

The processes focus guarantees the pattern for processes improvement effectiveness, due to define a series of elements in its conception that are vital for the continuous improvement. Also the output variables return to the pattern like input variables in the future.

On the other hand, their operation is based on the Deming cycle (PDCA), what implies a constant surveillance and a sustained control to the process development (process indicators), to carry out corrective actions or of improvement that impact in a satisfactory way in the clients (indicators of results).

Figure 2:





Innocuousness management

The innocuousness management has for objective to guarantee foods with the sanitary required quality [24], what implies a meticulous control of the productive and/or elaboration process. At this way, it is necessary to describe with detail the processes that are carried out and to determine those that add value to the sanitary guarantee of the products.

The main innocuousness management tool used is the HACCP system that according to Sansawat and Muliylil its versatility allows to apply their principles to several conditions that it can go from an industrial process to one handmade [25].

Also this versatility sustains the use of HACCP possibility for processes improvement. In accordance with ISO 22000 this system is based in seven principles:

PRINCIPLE 1: To carry out hazard analysis.

PRINCIPLE 2: To determine critical control points (PCC).

PRINCIPLE 3: To establish critical limits.

PRINCIPLE 4: To establish a surveillance system to the control of PCC.

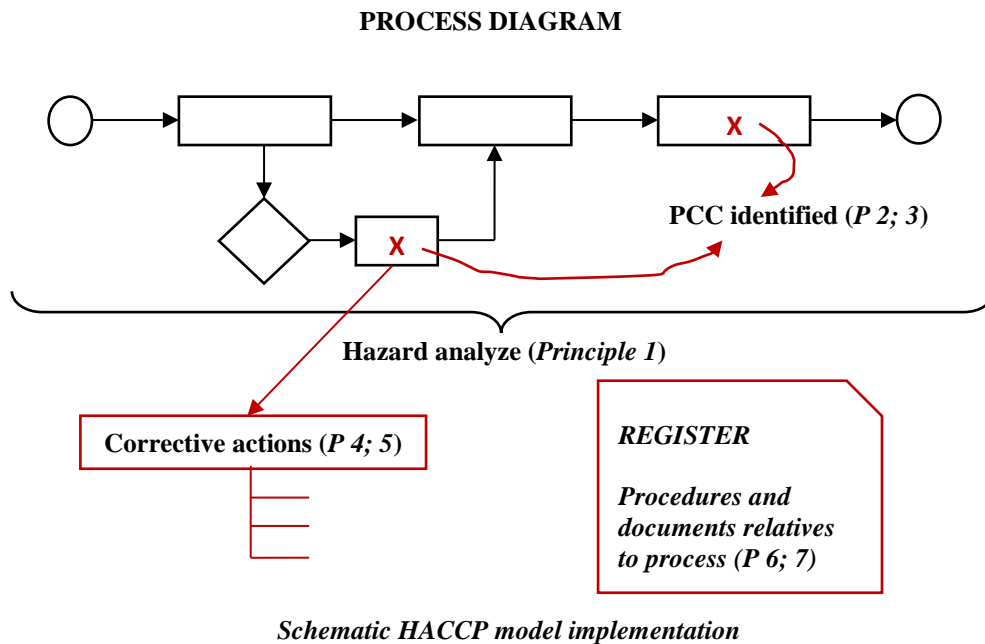
PRINCIPLE 5: To establish corrective measured for non-controlled PCC.

PRINCIPLE 6: To establish verification procedures to confirm HACCP effectiveness.

PRINCIPLE 7: To establish relative documentation system to HACCP operation.

Based on the focus by processes the implementation of HACCP, it would be (Figure 3):

Figure 3:



HACCP principles contain the phases: process analysis, design and implementation of the process; pointed out by Amozarraín for processes improvement. This condition support the idea of use HACCP like a processes improvement complement [26].

RESULTS AND DISCUSSION

The integration of common elements to knowledge management and HACCP system offers an excellent tool for the processes improvement. On one hand the knowledge management supposes the efficient and documented use of the information, adding value to the final product. On the other hand HACCP facilitates the representation of the process, its analysis, the determination of the activities that commit its effectiveness and it establishes the



measures to guarantee the objectives execution.

At this way HACCP offers the mark to analysis the process to improve and the knowledge management sustains the continuous improvement and the necessary information availability to realize the monitoring, proceeding, verification, registration and control activities.

Table 1. Innocuousness and knowledge procedures contribution to process improvement

Innocuousness management (HACCP system)	Process improvement	Knowledge management
Steps	Adjustment	Variables
Created work team	Create work team	
Describe product	Describe process	Acquire and Use information
Identify potential use	Identify requirements and use	Technology observatory, Use information, Known costumer's requirements
Represent process (diagram)	Represent process (diagram)	Organize and acquire information
Verify diagram	Verify diagram	Use information
Hazard analyze	Analyze potential risk to process effectiveness	Use information
Determine critical control point	Determine critical activities/steps	Acquire information, Use and Recover information
Critical limits establishment	Define indicators	Acquire and Register information
Vigilance procedures establishment	Improve implementation	Organize and Store information
Define corrective actions	Control	Use, Recover and Register information
Verify HACCP implementation	Keep functionality register	Acquire, Register and Store information
Keep register		

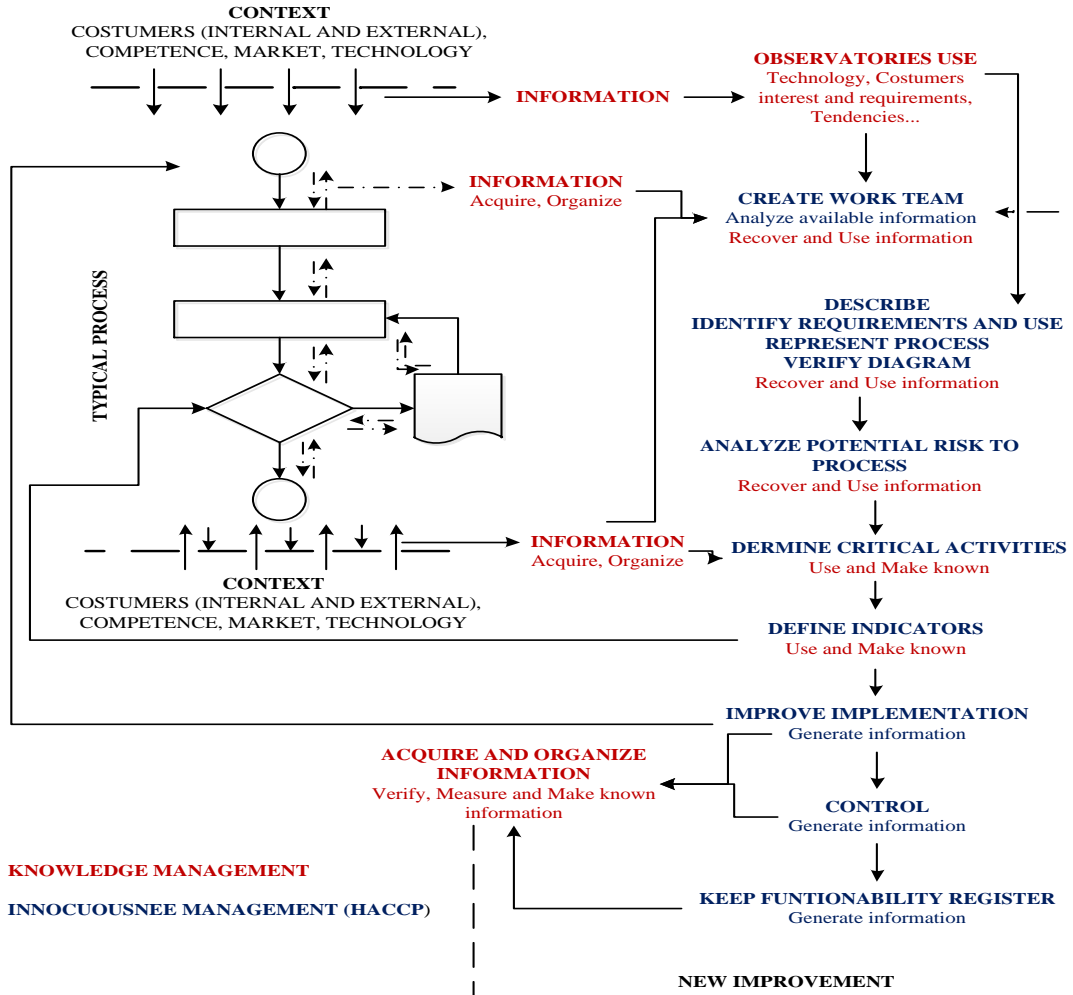
The tools versatility of innocuousness management and knowledge management, make it possible their use in processes improvement of any nature. The knowledge management is inherent to the application field, and HACCP in spite of being related with foods, its methodology can be adapt it to environments so much productive as services.

Under the focus by processes, it can be considered the innocuousness like the guarantee that the product/service will fulfill the client's requirements, contributing to its efficiency and effectiveness. Under this same focus, each activity of the process, not only generates inputs to the following step, but also information that properly registered and organized it can be used then for the process improvement.

Also the process improvement begins with the use of the available information that previously should be registered, organized and stored. This knowledge, not only includes the process particularities but also the changes in the environment that provoke it or make it necessary the process improvement (Figure 4).



Figure 4:



Process improvement representation

CONCLUSION

The processes improvement is a vital aspect for the current business management development. Therefore it is indispensable the search of more efficient systems that it guarantee the activities effectiveness. In this sense, the organization, information and registrations of the processes, as well as a meticulous analysis of the activities that are carried out, doesn't become in advantage, but in necessity.

The tools proposed by innocuousness management and knowledge management offers a substantial support and of feasible application to the processes improvement. The concept of critical activities that it commits the result of the process constitutes a new vision in processes conception. Also to sustain the activities in the knowledge management add an informative solid structure that is very important for the control and improvement of the processes.

The presented proposal is applicable as much productive processes as services process and it is independent of the improvement technological capacity. The above-mentioned support the availability of the proposal generalization.



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