International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056
Volume: 04 Issue: 07 | July -2017 www.irjet.net p-ISSN: 2395-0072

Study of the methods for decision making in the monitoring and control of production in the ecuadorian pharmaceutical industries for project use using comprehensive control panel and business architecture

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Abstract - *The organizations nowadays need to have methods and tools that allow the availability of relevant information in each of the areas of knowledge for effective decision making, which will be of great use to the Ecuadorian Pharmaceutical Industries for their responsibility in Production of medicinal products suitable for human or animal consumption. A field investigation was carried out on 16 pharmacists producing the injectable and tablet lines with the objective of knowing the current situation of the laboratories regarding the monitoring and control that they apply in their production processes, to determine the measures and quality controls with the Order to maintain a competitive value chain. The project resulted in a study of the methods applied in project management for decision making, the results of which are acceptable; These methods offer benefits due to the system of indicators and important variables within an organization, this project experience can be applied in this type of business with the intention of reducing uncertainty and risk that affect the quality of the product and contributes to the reduction of costs. Time and resources.*

Key Words: Business Architecture, Business Management, Control, Making Decisions, Monitoring, Scorecard.

1. INTRODUCTION

Nowadays in the world of business is not easy, take the best alternative without mistakes, this can lead to loss of production, suppliers, distribution and customers. Decision making plays a very important role in the areas of knowledge, for that reason the human resource in charge has the responsibility to analyze and choose among several alternatives the best decision, which can affect positively or negatively any organization.

In their study (Robert S. Kaplan, David P. Norton, 2014) they concluded that "An integrated system, from customer orders to raw material suppliers, allows all the units of the organization, Along the value chain, achieve enormous improvements in cost, quality and response times".

Pharmacists must have a measure to obtain the necessary information in real time, from any geographical location in order to improve decision making that indicates which drugs to produce based on market demand so that it can cover that supply and Can control the excess production as that would result in high costs, so that medicines could expire or occupy a warehouse space. Each erroneous decision has a negative effect on the areas of knowledge, at first the impact may be minimal but over time that would generate a large percentage of loss in each of the processes whether internal or external, it is here where Decision making plays a very important role so top executives must know how to efficiently and effectively manage each of the processes involved in obtaining their final product, where you need to know the raw material needed to The process, the human resource involved in the production, manufacture, evaluation and distribution of these medicines, where a plant stop can become a big problem since that time that was not in production could be destined for distribution activities Or manufacturing, it is here that measures must be taken to have all the resources that enable the pharmaceutical industries to be Is operating without having to stop for internal problems, which must be governed by norms that prevent the production stops.

This research carried out a survey of information to know the current state in which are the areas of knowledge of the pharmaceutical industries that currently operate in Ecuador and which are responsible for the production of injectables and tablets, in order to demonstrate Each one of the causes that prevents them from carrying out their internal and external processes with success, in the Figure. 1 details the main causes and effects that are presented with the inefficiency in the monitoring and control of the production process.

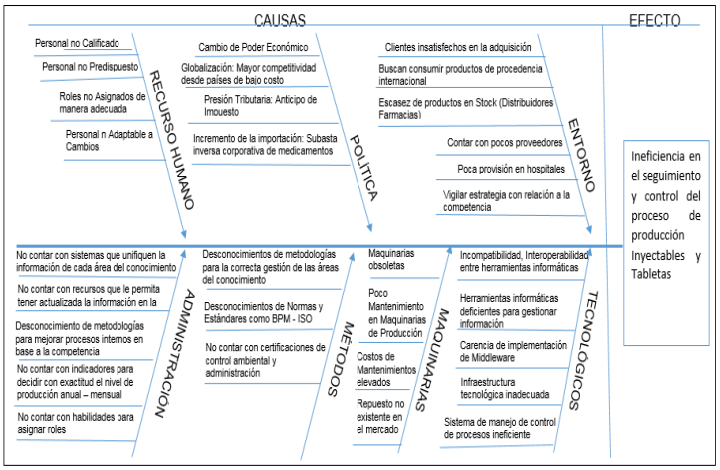

Fig -1: Ishikawa Diagram.

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2. DEVELOPMENT

Decision making consists of choosing between several alternatives the most optimal to achieve some objective or goal, the same that can be executed individually or group and can be applied in both personal and work life, giving results as effects that Can positively or negatively influence a problem, an opportunity or an institutional risk. (Cross, 2015)

(Good Editorial Editorial Team, 2015) Indicates that to take one or some decisions with a great responsibility, that is why the person responsible must have the skills or experience to solve them, for this they have chosen to create processes shown in Figure.2.

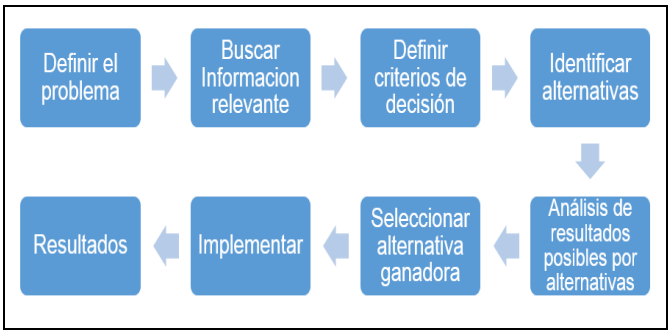

Fig -2: Process for decision making.

2.1 Types of decisions

Decision making comes in different ways such as decisions by methods, programmed decisions, unscheduled decisions, and tiered decisions. Decisions by methods, as their name indicates are methods in which the decision maker considers to make decisions, some of the methods most used are the balanced scorecard, business architecture and business management. The programmed decisions are those that establish processes that facilitates their realization, where these processes will become routine and repetitive. On the other hand, non-scheduled decisions do not have processes for their realization, since new events are usually present in the organizations, which should be analyzed at the moment. Decisions by levels are classified as strategic, operational and tactical or pilot, where the strategic decisions are those that are made in the long term and are taken by senior executives as it analyzes everything that can affect an organization. In contrast, in tactical decisions are made by managers who are in the middle level, these decisions are often repeated. The operational decisions are made by managers who are in the lower rank of the organizational chart are very routine and in case of an error, these can be corrected vertiginously (Martinez, 2016).

2.2 Integral Control Panel

The Integral Scorecard (hereinafter WCC) translates an organization's strategy and mission into a broad set of action measures that provide the structure needed for a strategic management and measurement system. The WCC continues to emphasize the achievement of financial goals. The scorecard measures the performance of the organization from four balanced perspectives: finance, customers, internal processes and training and growth. The CMI allows companies to keep track of financial results while observing the progress in skills training and the acquisition of the intangible goods they need for growth. (Robert S. Kaplan, David P. Norton, 2014).

The Stages of the Balanced Scorecard benefits him in the following:

1. Identifies critical business factors so that senior executives identify the causes and effects they generate and take steps to improve them.
2. It helps senior executives reach a consensus to identify and recognize the clients that generate the most profitability to strategize and retain them.
3. Aligns business strategies to increase the segmentation of your market to reach new customers.
4. It improves the communication in the organizations for a greater compression of the activities to realize to reach the strategies of the business and thus reduce critical processes that are presented.
5. It allows reengineering to improve business strategies in case of not meeting expectations in the business.
6. Balances the financial and non-financial strategies that help in the development of indicators that help to make decisions.

Table -1: Objectives and indicator CMI

Strategic Financial Objectives	Strategic Indicators	
	Effect Indicators	Cause Indicators
Financial Services		
Enrich the benefits	Return on Investment	Many Revenues
Improve or increase sources of income (existing - new)	Maximize revenue	
Reduce costs in the organization	Increased business profitability	
Reduce risk to shareholders	Catastrophic losses	
Customers		
Maximize customer satisfaction	Segment share	Depth of relationship
Increase after-sales satisfaction	Retains customers	Conduct satisfaction surveys
Internal Processes		
Understanding customers	New Product Revenue	Cycle of the manufacture of the product
Improve Productivity	Expense Ratio	Quality audit
Manufacturing innovative products	Cross Selling Ratio	Hours dedicated to customers
Reduce operational problems	Rate of service errors	
Training		
Develop strategic skills	Employee Satisfaction	Job Coverage Ratio
Provide strategic information		Availability Ratio

2.3 Business Architecture

(Colombia digital, 2015) is a methodology that allows to align according to the business or to the rationale of the entity, its data, processes, applications and technological infrastructure. The main objective is to ensure the correct alignment of business processes in a company and technology, with the ultimate goal of achieving and meeting its strategic objectives.

2.3.1 Components of the Enterprise Architecture

(Colombia digital, 2015) in the vision of architecture is responsible for proposing the project and start the cycle of development of architecture, propose a vision of high level and business value that you want to obtain. It establishes the limitations, scope and expectations of the project, it obtains the total support from the top managers, in addition the stakeholders are identified. In the information architecture (data), is responsible for structuring, organizing and labeling the components that facilitate the location of all the information that can be obtained, in addition to improving its use and knowledge on the users' side, with which it will be achieved A significant advance in saving time in an organization. In business architecture (processes) allows to obtain an integral vision of the whole organization. It defines the business strategy, organizational structure and key processes of the organization. Architecture applications provide elementary definition for information systems, interaction is between these systems and their relationships with business processes Core organizational and technological architecture defines the strategy and technological architecture in the infrastructure of you, and the technological framework Of the computing platforms and databases that must support the different business solutions, as well as the mechanisms of data and information storage, data networks, data processing centers and integrated technology services (ICT Ministry for public CIOs in Colombia, 2013).

2. METHODOLOGY

The present project was made using the methodology of the logical framework (hereinafter MML), which is conformed by two stages. In the second stage, through a matrix, processes and activities are presented to reduce, control and follow up on a project with the objective of improving the difficulties identified in stage 1.

According to SUPERCIAS in 2016, there are 196 laboratories in Ecuador, in which 62 industries have their own plant, which segregates them by provinces, it is considered that 29 pharmaceutical laboratories are in the coast region and 33 are located in the Sierra region for the present investigation will take into account those Ecuadorian pharmaceutical industries that are in active state and have production plant and are dedicated to the lines of tablets and inyectables and that are in the province of Guayas. It is relevant to mention that there were inconveniences when managing the interviews and surveys due to the confidentiality and internal rules of the companies, for that reason the sample considered in the study is 16 Pharmaceutical Industries.

3. RESULTS AND DISCUSSION

According to the analysis of field research techniques the following is stated:

It was identified that pharmaceutical laboratories have specific use applications, which are designed to perform a specific task, have more than one platform and these are not interoperable, which would generate drawbacks when wanting to couple other computer tools, to take Of decisions is not beneficial to have isolated systems since it is essential to have the necessary information of all the areas involved in the internal processes, for the analysis and solution of inconveniences that arise in the organization.

Also based on the study proposed, it was identified that most pharmaceutical industries make the decision making based on the experiences obtained and some do it based on spreadsheets. Few pharmaceutical laboratories have a computer tool that helps them to make efficient decisions for the monitoring and control of production. There are few pharmaceutical companies that are currently innovating

their technological infrastructure, and have opted to implement an ERP which allows managing the resources of an organization.

4. CONCLUSIONS

Pharmaceutical industries are obliged to provide a final product, based on good practices. Therefore, it is necessary to consider the appropriate measures to provide the community with medicines suitable for human and animal consumption, without affecting the health of both.

Nowadays in the world of organizations, it is not enough to have certifications or adequate infrastructure, if you can not control the internal processes of the company, to obtain greater productivity in your business chain, senior executives should consider having computer tools That allows to store in an organized way all the information of its organization and this can be visualized and analyzed at any time and in any place. They must also have efficient decision-making methods to reduce and improve all possible risks that arise in each of the areas of your company.

The CMI and AE are one of the methods that help to organize internal and external processes of any organization, offering the possibility of obtaining greater productivity in the human resource as in the production and also helps to increase the profitability of the business reducing unnecessary costs in manufacturing processes.

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