

Organizational Intervention in a Sugar Mill Located in the State of Veracruz, Mexico

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Abstract

This paper review the findings concluded from a transversal and exploratory case study approached from the qualitative paradigm, founded in observation and individual non-structured interview with information obtained from a sugar mill on the central coast area in the state of Veracruz, México. The main objective is to determine the reason or impediment to promote the good performance and achieve the satisfaction of both, the managers and the general workers and the continuous improvement in the sugar manufacturing area, concluding that the managerial leadership is the main cause of the problem.

Keywords: Management; Communication; Sugar industry; Management leadership

JEL: L11, L23, M11, M14

Introduction

Hernandez et al. [1] reports that in Mexican territory, the cultivation of sugar cane started when Hernan Cortez (sic) moved plants from Cuba in 1522, finding in this soil conditions conducive for reproduction and predilection. It became being accepted socially and economically to be used to industrialization. This trend has resulted in the cultivation and industrialization, antithetical values like greed and cruelty, power and subordination, tyranny and slavery, class struggle and interests, corruption, politics, abuses and injustices, but also represents, for certain regions, the only alternative survival.

The phrase attributed to Napoleon Bonaparte, according to which the one who does not know history are doomed to repeat it, is relevant to analyze the possible consequences of the current situation and recurring sugar mill in question. The area with the best opportunity for improvement and that represents the focus of this essay is represented by the dedicated to manufacturing with a statistical behavior of the last 10 years in what is known as lost and missed time or production stoppages indicator par excellence in this the types of industries resorted with processing capacity, same as shown in Table 1 where instability and lack of safety is emphasized.

In this essay, it is developed an option supported on the observations made in February 2016 about the dynamics of the sugar mill and registered symptoms set the tone to deduce that the main problem is generating the leadership style used and is presented at different hierarchical levels, significantly affecting communication in all directions and organizational learning. The primary limitations in the research presented are bounded primarily by the time available for observation and availability of key informants who spend part of their working time, leaving aside their routines, for retrospection of the situations proposed for this purpose, always looking for the most basic reason. The timing for implementation of the intervention plan did not allow taking place.

This essay would not have been possible without the participation of operational staff of the sugar mill and comments or observations that the staff at the various controls was good enough to provide with the knowledge that the information would be used for academic purposes, all of them sincere thanks.

Background of the Problem

The company discussed in this paper belongs to the Mexican sugar industry. The sugar mill under analysis is located in the Southern part of the sugarcane region XIII on the coast of Veracruz, about 35 km. Northwest of Veracruz, Mexico, which produces and markets standard sugar, alcohol and electricity (Figure 1).

The economy of each country is impacted by the effects of globalization. This is a recurrent discourse in the mass media; with the indicators in oil prices and the dollar U.S. least this happens in our country. The sugar mill does not escape this crisis and the recurrent discourse in senior management during the past two years it has prevailed around the high costs and the need to diminish to what value? It has not been specified, but no hierarchical entity has

Period of Production	Lost and missed time		Quantity Detentions	Days of Zafrá
	%	Hours		
2014-15	7.16%	235:03	530.0	137.0
2013-14	11.45%	394:41	737.0	144.0
2012-13	8.74%	359:10	1,036.0	172.0
2011-12	6.59%	203:47	858.0	130.0
2010-11	6.08%	164:24	422.0	113.0
2009-10	7.85%	251:46	915.0	134.0
2008-09	5.50%	181:00	517.0	139.0
2007-08	13.85%	482:43	1,025.0	146.0
2006-07	14.46%	536:34	1,435.0	155.0
2005-06	15.34%	647:15	1,684.0	175.0

Source: Own elaboration

Table 1: Comparative data for 10 years with the traditional indicators of reliability.

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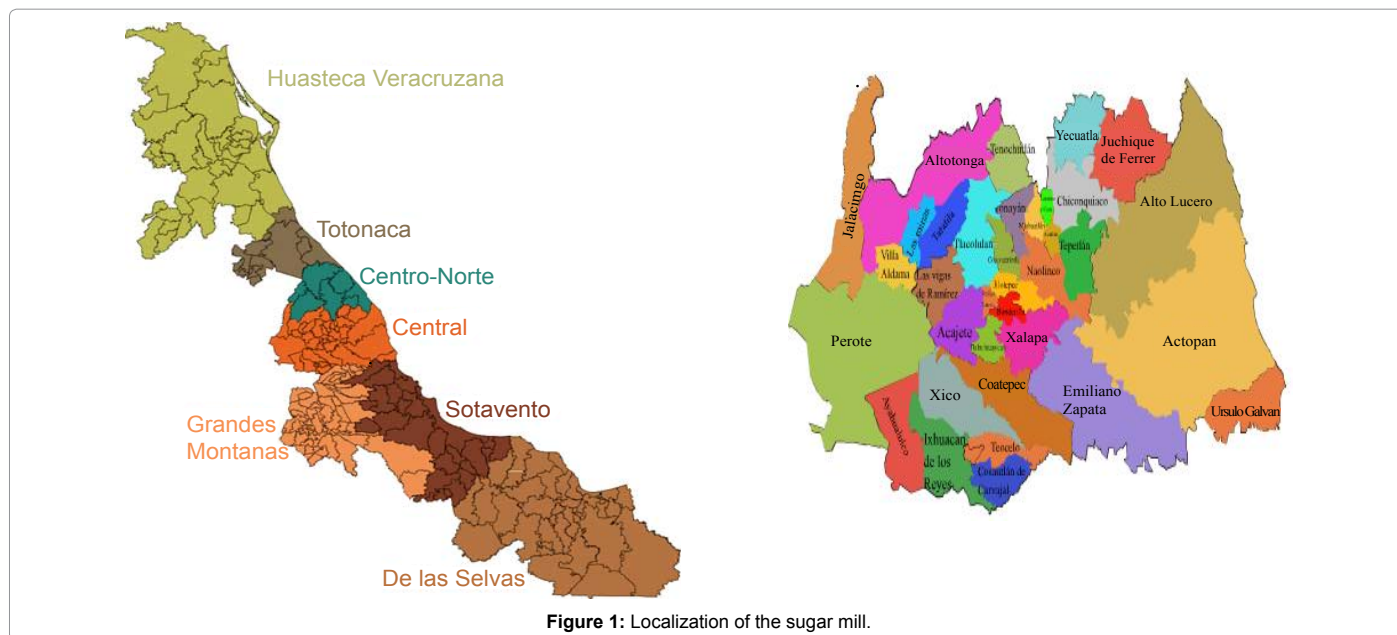


Figure 1: Localization of the sugar mill.

information about breakeven point and what needed to control this potential conflagration that statistically was shown in Table 1. Within these indicators, it is hidden the root cause that stimulates the need to reduce costs.

An organizational diagnosis was used as an instrument of management identified as a collaborative process among members of the organization and consultant, to collect relevant information, analyze and identify a set of variables that allow for the determination of the originators causes of this behavior and to draw conclusions [2]. Using as a tool to gather information, the observation is defined by Avila [3] in the following terms: Observe, in this case, it may mean detect an inaccuracy or draw attention to an aspect that deserves reworking or modification (p.192).

When performing a more detailed analysis of the data that were used to form the Table 1, it is able to determine that at least 50% of the problems belong to the operating order and 50% are attributable to maintenance. Thus two research lines are deducted, formed by the management of human capital, related to the administration of the efforts of people [4] and the management of technology related to care and innovation in machines and equipment. This is own definition used only for this case.

For human capital management the first symptom that it is sought is concerning schooling of the operating worker. In survey of 302 of the 600 who attended to work in different shifts, the first 13 days of 2016 found that the average schooling beyond basic secondary education into in the upper half for a little over a year, as shown in Table 2 related to different age ranges and demonstrating the ability of workers to training the necessary routines. What was found is the lack of programs and plans aimed directly to the needs of manufacturing.

Another found symptoms are carried out with the support of interviews not structured made to personnel involved in the responsibilities related. It was obtained different perspectives according to the topic related to its direct responsibility in finding the strengths and weaknesses of each process. Annotations of each point are the result of the deductions that can be reached with the data and observations made.

Range of age (Years)	Amount of participants	Percentage participation	Average of schooling years
18 a 20	13	4%	11.846
21 a 25	33	11%	11.697
26 a 30	43	14%	11.605
31 a 35	39	13%	10.821
36 a 40	28	9%	9.750
41 a 45	45	15%	9.067
46 a 50	44	15%	9.750
50 a 55	28	9%	10.429
Above 56	9	10%	9.034
Total	302	100%	10.35

Source: Own elaboration

Table 2: Performance of schooling workers.

Quality

In this assignment, the commitment of senior management explicitly stands committing some resources but without assuming a position to lead and motivate. The answer used in the company when there are quality failures is considered as normal operation events, despite having implemented a formal document circulated widely and reflected in the quality management system ISO 9001-2008 in the same concrete goals that have been raised with periodic evaluation. Only some areas meet physically quality commitments. In short, the lack of commitment to the management system for quality is deductible from observed evidences where significant improvement is comparatively weakly since its inception in 2007.

Training

As quality training and staff development is recognized as a need by senior management of the company, the resources committed are scarce. Less than 3% of total expenditure in the other activities of the company is rickety utilized as the experience of the employees for cognitive enrichment, only isolated efforts that rely on the experience of some department managers are recorded. Leaving simple records formal training needs assessment.

Maintenance

Currently it only offers reactive maintenance; one intervenes only in case that of imminent failure, where the register kept solely for the work performed. The results generated from this effort represent a significant loss in productivity and are reflected in the record of lost production time as indicated in Table 1. In a quick analysis of the displayed values it can be seen as value 2.5 the most recurring daily detentions of production by machinery and equipment failures. No plans or other controls were observed that contribute to the maintenance management.

Production

This is the area that excels in the interest of the technical, supervisory personnel exists in as much logically as the base that supports the entire organization. It highlights the development of new products, the most profitable so far resulted from processing waste materials of the process itself as are the crystallized honey (out honeys) to produce alcohol and other derivatives, fiber grass as fossil fuel (biofuel) and renewable used to generate electricity. Both products have set the tone for their own processes with financial assistance that arises from them. Both the production of sugar, alcohol and electricity are developed and maximized to the corresponding customer satisfaction; production is designed by indications of the general direction.

Information management

This is disclosed only to interested parties and reserved only for authorized. This does not change with the changes undergone by the plant. Only the first version is preserved. Supervision gives instructions and practices are transmitted orally. There is no reliable information on machinery and equipment, progress in other mills is only known through informal talks. Production experience is lost in the absence of records. Each worker has his self-improvement.

Management

As previously has been denoted, the organization is certified with the management system for quality ISO 9001-2008 and with it the definition of purpose, vision, mission and values of the institution. There are allocated time and resources to identify and seize opportunities provided they do not put at risk everyday operation; threats are countered with contingency plans. The company is anticipating competitive advantages and is organized to build and strengthen, moving towards niche markets that are not attractive or accessible to competition. Management participates in cooperative networks coordinated by other, more developed companies. There is knowledge of the rules and requirements governing the behavior of the company in relation to its social, ecological and political environment trying to exceed expectations fulfilled. The main weakness is provided by planning where the strategies and plans are confidential and known only to the managers.

- 1) The results are deduced on observations in daily meetings to evaluate processes and consensus on corrective measures for deviations allowing to interpret with little effort.
- 2) Deficient structure for the orderly tracking of issues to discuss.
- 3) When is analyzed a problem only are involved the superintendent of the area in question, the general superintendent of factory and technical director. This implies that consensus is not generated and are not aligned the groups or teams, in such a way that each one must confront almost alone the solution to his deviations.

- 4) It is questioned only deviations and possible causes, there is no detailed investigation. Therefore becomes fault frequency most of these deviations.
- 5) Inconsistent follow-up actions to be taken to contain the deviations in the process.
- 6) The body expressions during meetings, for some area superintendents, can be interpreted as concern about what is happening when two-way radios maintain a high volume of transmission and are placed on the worktable. Another indicator of this "posture" it can be interpreted by the amount of documents placed on the table and are constantly reviewing search for indicators that would justify the results generally bad, when considering that are free of questions the number of documents decreases considerably.
- 7) Observation of the functions of the department heads, superintendents and technical director in the daily work activity, supported by the locutions of operational staff and lower ranks can conclude that their working period is greater than 12 hours per day. They are active when no everyday occurrence there is a burst arriving to observe great hustle to hold as soon as possible the problems. When the event is contained in the normal calm, it returns awaiting a new one.
- 8) The events are recorded in log books type, not electronically.
- 9) Only the process indicators are recorded electronically and are subject to statistical management by the department of chemical analysis (laboratory).
- 10) The routines are due to tradition rather than instruction and consensus among operational staff at different hierarchical controls.

Definition of the Problem

This test was based on the events that occur in a sugar mill located in the central coastal area of the State of Veracruz, Mexico. Here organizational dysfunctions are most evident in the sugar manufacturing area where research is focused. This functional area is the fulcrum from which the plant for production of alcohol and the plant for generating internal power are held to be productive and then it will be for the new generation power plant dedicated to the distribution and sale in the assembly process.

The question that emerges from this situation is apparent that if there is knowledge about the administrative problems afflicting the manufacturing area, determined by the arguments of the key informants. Then, what are the reason or impediment to save the good operation and achieve satisfaction of both managers and workers in general and continuous improvement in sugar manufacturing area?

Rationale

Productivity and high manufacturing costs are the main elements of the speech delivered by senior management. It is not possible to contradict this speech since the results, comparing them against other sugar mills belonging to the consortium Coca cola - FEMSA considered the country's best, show in their periodic production reports that have reached target positions for the sugar mill research. From this speech delivered by senior management of the company can be deduced that the search objective should be a competitive production management as detailed by Arnoletto [5] when he quotes T. Peters, "the quality,

maintenance, response time, flexibility, innovation cycle time ... are controlled by the factory".

What is intended to solve is the socio-technical problem currently afflicting the sugar mill in question and is responsible to some extent, operational instability affecting the productivity of the area for sugar manufacturing and in the same way impact the new plant for power generation because this depends on the supply of biofuel generated first.

Social problems are controlled from the platform to restore the bond of organizational communication in all directions through providing employees of organizations, behavior change, raise awareness of their behavior and attitudes, acquiring greater awareness of other people's behavior, provide opportunities for knowledge and development, raising awareness and perception of one's own behavior and others. Improve interpersonal relationships by providing skills and knowledge to perform the activities of management and leadership. Seeking to awaken a sense of belonging and pride among all who work in the industrial unit.

With the emergence of the first steps of the selected tool to correct social deviance aforementioned, it can be investigated the best applications for the technical part, taking the first steps toward operational stability, resource utilization and cost reduction with solid foundation of organizational growth.

Research Method

This case study is approached from the qualitative, transversal and exploratory paradigm based on observation and single interview, unstructured. It is followed the format used for daily production meetings supported by video recordings, obtained by the expressed consent and participant observation. Also, the management results were observed for each area superintendent and department head. Hierarchies are analyzed: A technical director, a general factory superintendent, five area superintendents and the department head.

Individual interviews were conducted in the field without a specific structure, except in order to establish the perception of the development of the various links converging on organizational development for sugar manufacturing area.

Analysis of Results

Diagnosis of the situation

Commitment deteriorated manifested in all hierarchical levels sponsored by detraction of some factory managers, foster a management system for quality untapped potential for organizational growth. It is necessary an explicit and formal consensus of all grade levels being achieved only with the participation, monitoring and demand of senior management as it has decided to raise the management system for the ISO 9001-2008 quality as a flag in the market. Some minor problems that are deducted from the initial diagnosis can be resolved only with joint effort and dedication required in their home as suggests the following the summary: Human capital management can be achieved through a joint effort and commitment, drawing on the expertise of each specialist working in the organization. This will provide much of the cognitive requirements generating a bond of trust between the skilled and the instructor, reaching the ideal competition for each case. Resources may be destined for this initial effort that will achieve higher productivity. The formation of replacements in each job, from the management to the operation, is a pending task and that is creating hierarchies of listless behavior

control having no opportunity to access greater responsibilities with the proportional increase in economic perception.

With the behavior described above on the nonexistent maintenance management it is deducted the inexistent guarantee of continuous operation, poor knowledge generation, anticipatory myopic vision coupled with a low demand and diluted by having services operating in isolation liability follows. It is possible that with lean manufacturing techniques, especially related to the total productive maintenance, considerable progress is achieved in the short term. The efforts made to this management must be concatenated with human capital, quality and participation of the union itself which represents the larger challenge for management.

General administration looks strong but this position is not yet evident in manufacturing strata. Conditions that require first level attention in this organization within the manufacturing area, and according to the observed and reflected in the symptomatology, are addressed basically by a style of inappropriate leadership that creates poor communication generating a work environment problem for the productivity.

It is therefore necessary to establish an intervention plan, at least, and then is proposed here. Because the symptoms in varied excess and directly related to each consistent functional area with the manufacture of sugar have been selected two conditions, which are present at all hierarchical levels, according to what was observed in gathering information and suggests. They are the most impact on the organization; inappropriate management leadership and poor organizational communication in all directions at different hierarchical levels.

Intervention Plan B

Because the symptoms in varied excess and directly related to each consistent functional area with the manufacture of sugar have been selected two conditions, which are present at all hierarchical levels, according to what was observed in gathering information and suggests they are the most impact on the organization; inappropriate management leadership and poor organizational communication in all directions at different hierarchical levels.

Intervention plan

The process of organizational intervention has initiated with an internal audit whose main objective was placed on highlighting areas of opportunity in the departments of the company examined or better yet where it is detected the deviation preventing optimal administration, same as presented in this essay. The requirement for external support can also be a solution because if the consultant is appropriately selected can provide experience to have the forms, procedures and knowledge required to conduct the audit efficiently, thereby reducing the time it will have to invest the organization. It is possible to obtain a trial with less bias than determined by internal audits and detect the necessary corrections that can take the organization to an optimization of costs.

This intervention plan proposes an organizational development supported by a model technical partner, where the biggest challenge is human growth while maintaining values such as respect, trust, support your colleagues and participation in order to intervene directly in the organizational environment. This s for the social part from the platform for groups "T", which is the formation of small groups and study the ways in which the group interact, comprising short (few sessions) therapies, learning focuses on human behavior oriented to

the organization and its performance, described as a tool for social, institutional and group counseling with an additional purpose focused on the preparation of the links between people. Training is then in all its dimensions: Emotional, cognitive and social [6].

The capital importance of these working groups lies in the opportunity offered to break down barriers to communication allowing acceptance of technical changes, which depend more on an economic investment. So it can be improved the technical partner based on the symptoms described and provided in unstructured interviews that served as a platform to infer the high possibility that the style of leadership and poor communication are key factors to initiate an organizational development from the point of tactical and operational view in this sugar mill.

The plan is generically given in Table 3, which indicated the intervention procedure and its basic objectives. It is not considered diagnostic evaluation and has been previously developed. For the formation of improvement groups we proceed under the flowchart shown in Figure 1 of Annex 1.

Conclusions and Recommendations

Given the overlapping claims of key informants about the condition of the organization and the need to initiate an evolution in the same

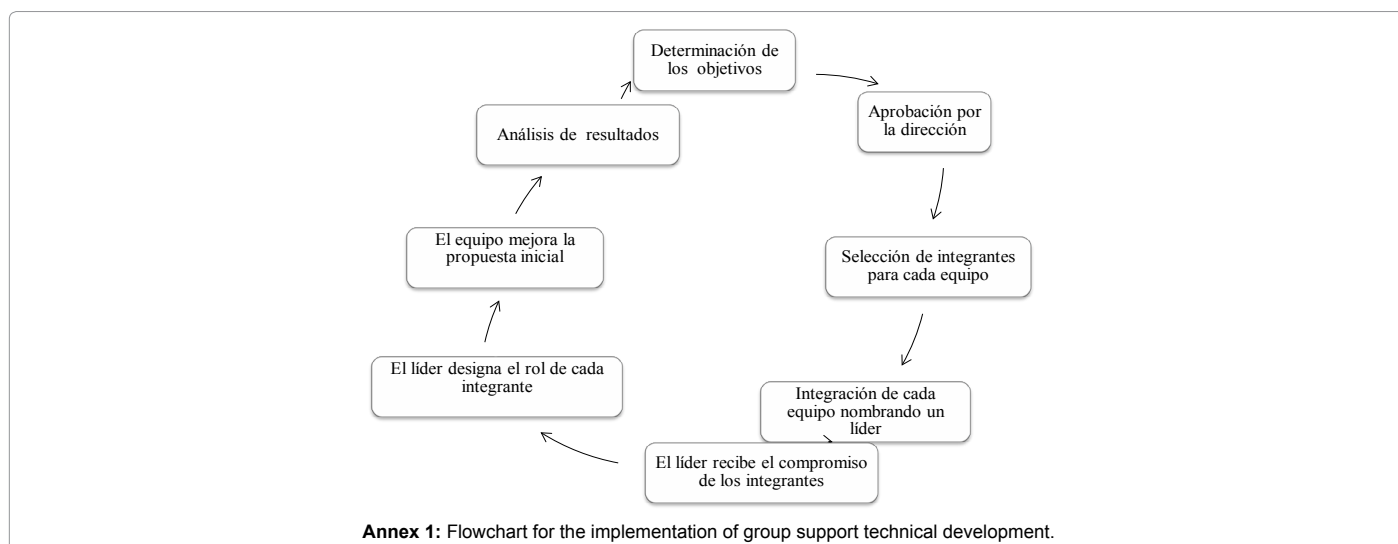
under the threat of a crisis that makes ineffective the industrial unit where is beginning to see development of features that allow deducting this is not in a very distant time. These indications show a rough interrelation, in many cases, between different hierarchies or levels of command. The operator staff gives monitoring to their work and the interest of middle managers by enforcing them, all in an environment of free demands, where the operational results are thanks to the nobility of the process in addition to the professionalism and shame of those who remain with those virtues.

Perhaps the proposal that emanates from this research is not the total solution to the problem and may need to add or put aside some but if it is an imperative to start, on the scale desired or resources are available, with a development towards the current organizational system and according to the situation of existing threats in the external environment. Like the audits applied for monitoring management system ISO 9001-2008 for quality, it is necessary to maintain a periodic review of the conditions of organizational development to prevent any deviation or simply improve the current condition. The aim is to start with social development, to achieve the necessary awareness for the transformation and gradually correct the deviations detected in each area to support the creation of improvement groups. This research other relevant lines are derived as can well be:

Intervention plan	Objective
Training Groups "T"	Real efficiency
Group of 8 area superintendents	Provide employees of organizations, behavior change, raise awareness of their behavior and attitudes, have greater sensitivity about the behavior of others
Group of Director, 4 advisers and General Factory Superintendent, and Laboratory Head	Provide opportunities for knowledge and development, increase awareness and perception of one's own behavior and others. Improve interpersonal relationships
Supervisors Group (15)	To reflect and inspire values to staff of the organization, to obtain high efficiency in the processes that take place within it
Managerial skills and emotional intelligence in the enterprise.	This preparation is necessary for all controls mentioned in the group "T", will give a better perspective of the functions for each position, allowing preparing in turn the potential replacements in the top hierarchy or at least you have full knowledge of the limitations in each position. Providing skills and knowledge to perform the activities of management and leadership
Technical development	Potential efficiency
Benchmarking to determine control tools used in other sugar mills and the results obtained, as well as establish links to exchange achievements.	Continuous Improvement in control processes and information management. It should be a multifunctional research group formed by superintendents and supervisors with experience in other work systems
Creation of improvement groups	Increased interdepartmental cooperation, creativity and improving communication

Source: Own elaboration

Table 3: Basic intervention plan.



Annex 1: Flowchart for the implementation of group support technical development.

How has it impacted the operating staff confidence, leadership style applied? And what behaviors have been developed as a reaction to the leadership styles applied in the operating staff?

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