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GUIDELINE MANAGEMENT: THEORETICAL CONTRIBUTIONS AND PRACTICAL IMPLICATIONS FOR THE ACHIEVEMENT OF STRATEGIC OBJECTIVES

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Abstract:: Given the constant debate on quality management, it can be considered that presenting results from the implementation of quality tools, from the perspective of what has already been produced, still contributes to the expansion of the discussion on ways of thinking about quality. It emphasizes the importance of applying methodologies that promote a technical and rational translation of medium/long-term objectives into executions aligned with them, such as the one exemplified in this work. Thus, through this work, we sought to contribute to theoretical debate and the practical implications of applying the “Hoshin Kanri” method, through a case study developed in a Brazilian private company in the multimodal logistics sector.

Keywords: Quality Management, Management by Guidelines, Matrix x, Hoshin Kanri, Production Engineering, Meeting, Operations, Sustainable.

INTRODUCTION

Productive processes undergo constant changes as: new technological and organizational conditions develop (MONACO and MELLO, 2007); or conditions external to organizations, such as economy, consumer behavior, laws, among others, are changed (SADIKOGLU and ZEHIR, 2010).

Given these changing conditions of society and production systems, the debate on practices and quality management is always present when discussing improvements in production systems. There are many works that address quality management, from different perspectives, although it can be considered that the contributions of the Toyota Production System and the consolidation of Lean Manufacturing are a common basis for most works that focus on presenting contributions within the scope of quality management (MONACO and MELLO, 2007; SILVA et al., 2019).

This way, according to Turrioni & Neto (1995), issues such as top leadership engagement, hierarchical structure and breaking administrative barriers can be addressed by quality management, in addition to the application of statistical and management techniques for quality, such as the Deployment of Quality Function (QFD), Statistical Process Control (CEP), Failure Modes and Effects Analysis (FMEA), Quality Assurance Systems (ISO 9000), for example. In this sense, a gap is perceived with regard to the need to translate the determinations of senior management to the other levels of the organization in terms of effective and efficient execution. This gap often promotes distortions or misunderstandings as to what is actually intended to be accomplished. Thus, in an attempt to meet the strategic deployment for better monitoring of its execution, the “Hoshin Kanri” method or, as translated by CAMPOS (2014), Management by Guidelines (GPD) can be applied (TURRIONI & NETO, 1995).

Given the constant debate on quality management, it can be considered that presenting results from the implementation of quality tools, from a perspective of what has already been produced, still contributes to the expansion of the discussion on ways of thinking about quality in cases similar to introduced. With this intention, this work proposes to present the application of the “Hoshin Kanri” method in a Brazilian company in the multimodal logistics sector. To this end, the following development phases will be presented, namely: identification of long-term goals, breakdown into annual goals, main priorities and control and review metrics.

Considering that the work is a case study, in addition to contributing to the theoretical debate on the implementation of quality management policies, it is expected that it

can make a practical contribution as it can be used by managers of the quality in productive organizations similar to this work or others that judge that the discussion presented is valid.

THEORETICAL REFERENCE

In this session, the topics of quality management and management by guidelines will be discussed, as these issues circumscribe the *Hoshin Kanri* methodology used in the organization in which this research was carried out, as can be seen in Figure 1.

QUALITY MANAGEMENT

According to Flynn et al. (1994), it is possible to define quality management as an integrated approach aimed at achieving and sustaining quality results, with a focus on continuous improvement and prevention of deviations in processes at all levels and functions of the organization, with the ultimate goal of meet or exceed consumer expectations.

According to Carpinetti (2012, p.1), the theme of quality management is perceived, both in academia and in the corporate world, as a strategic factor for improving competitiveness and productivity. The development of quality management is essential to guarantee survival in the market, both to maintain customer satisfaction and to obtain better results and generate new orders (CARPINETTI, 2012).

The concept of quality management establishes a bridge between the field of theory and practice through the exposure of methodologies and/or tools that help companies and managers. Among the main ones, the following stand out: verification sheet, Pareto diagram or graph, cause and effect diagram or Ishikawa diagram, Brainstorming, GUT matrix and 5W2H (MENESES et al, 2017). Often, methodologies such as PDCA or A3 Problem Solving and Hoshin Kanri are also associated with the concepts and practices associated with Total Quality Management (TQM) and lean production, as a way to

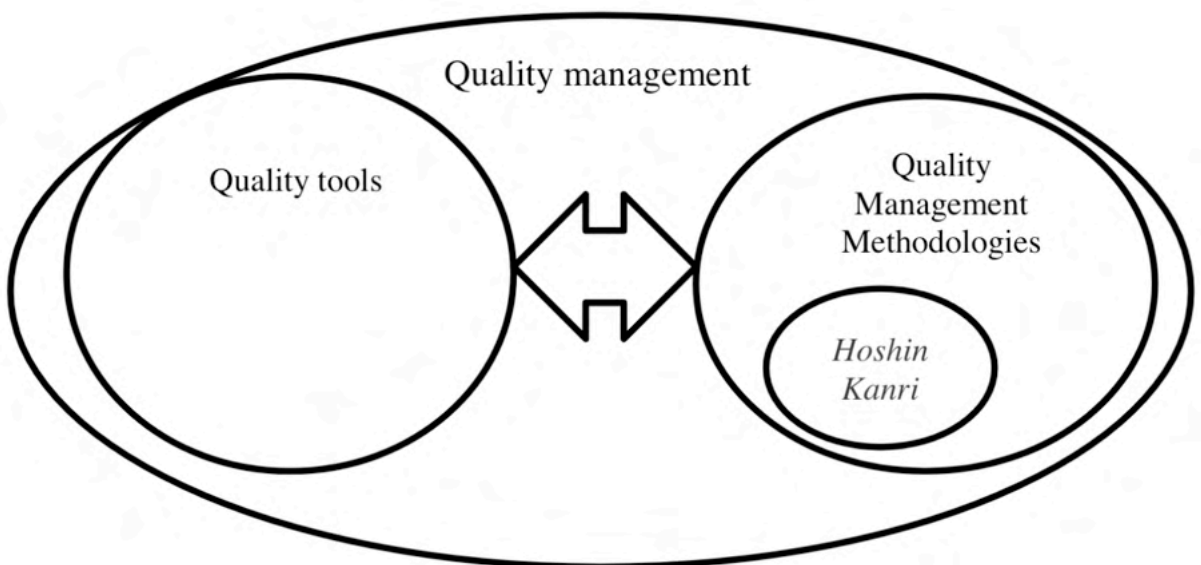


Figure 1: Representative Quality Management Scheme

Source: elaborated by the authors.

I) Long-term objectives: in this phase, the aim is to establish the Quality Policy, which is a set of guidelines. These are established with four parameters: Management team view, Competitive situation analysis, Technological environment analysis, Market opportunities. In the study presented, this phase is referred to as “Value Drivers”.

II) Breakdown into annual objectives: the set of actions that will be established to achieve the Quality Policy. This cannot create false expectations, and must be based on methods that are adequate to the company’s reality. In the study presented, this phase is referred to as “Strategic Goals”.

III) Main priorities: this phase deals with data collection and analysis aiming at the proper selection of priorities in the application of established methods. The objective here is to detect points in which the correct application of the methods accelerates the achievement of the Quality Policy, seeking to guide the efforts of each one. In the study presented, this phase is referred to as “Priorities”.

IV) Control and review metrics: Based on the three previous phases, the parameters that will allow the assessment of the achievement of the established Quality Policy are established in this phase. The definition of the targets to be achieved and the means to be used must give priority to the observations made in the previous phases, and results from the continuous negotiation between the

management levels of the company. In the study presented, this phase is referred to as “Initiatives and projects”. According to Farinelli, Santos and Galli (2018), it is important to emphasize as a point of difficulty in implementing the GPD, the cultural limitation of individuals in senior management in establishing records, controls and performance evaluation systems for the method. Another difficulty in implementing the method is the clear absence of vision,

objectives (goals) and means, both at the macro and micro levels, since they are premises for the GPD.

METHODOLOGY

The Case Study aims to promote the gathering of detailed and systematic information about a given phenomenon (PATTON, 2002). It is considered a methodological procedure that summarizes contextual understandings, paying attention to representativeness (LEWELLYN; NORTHCOTT, 2007), focusing on understanding the dynamics of the actual context of application (EISENHARDT, 1989) and engaging in deep and investigative work on objects, in a way that allows the detailing of knowledge (GIL, 2007).

For the development of this work, a combined approach of qualitative and quantitative characteristics was used. From the qualitative approach, the importance of the natural environment as a source and the researcher as a fundamental instrument is highlighted, in addition to obtaining descriptive data about people, places and interactive processes through the researcher’s direct contact with the studied situation, seeking to understand the phenomena according to perspective of the participants of the situation under study. For quantitative approach, data collection and analysis.

For Mattar (2001), the data can be obtained at such a level of depth that it allows to characterize and explain in detail the unique aspects of the case under study, as well as pointing out similarities and differences when compared to other cases studied.

To effectively conduct the research, the researcher must carry out an operational planning, which may consist of six steps as shown in Figure 3.

After the operational planning for carrying out the research, the next step is to

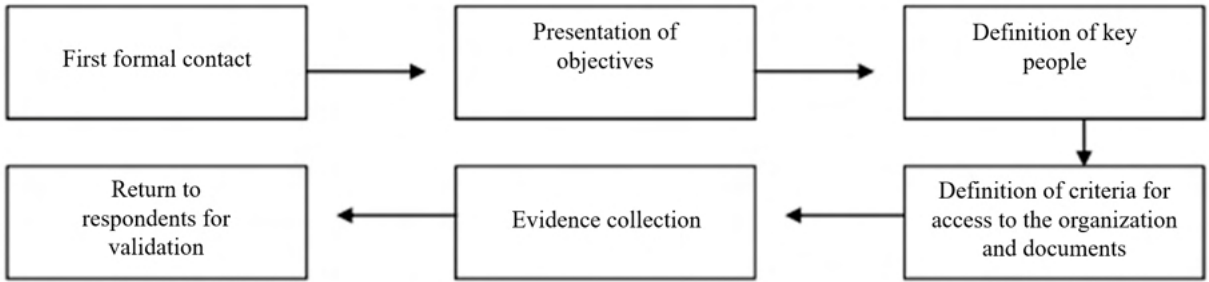


Figure 3 – Data collection and analysis process.

Source: Adapted from Eisenhardt (1989), Voss, Tsikriktsis and Frohlich (2002), Yin (2005) and Bryman (2008).

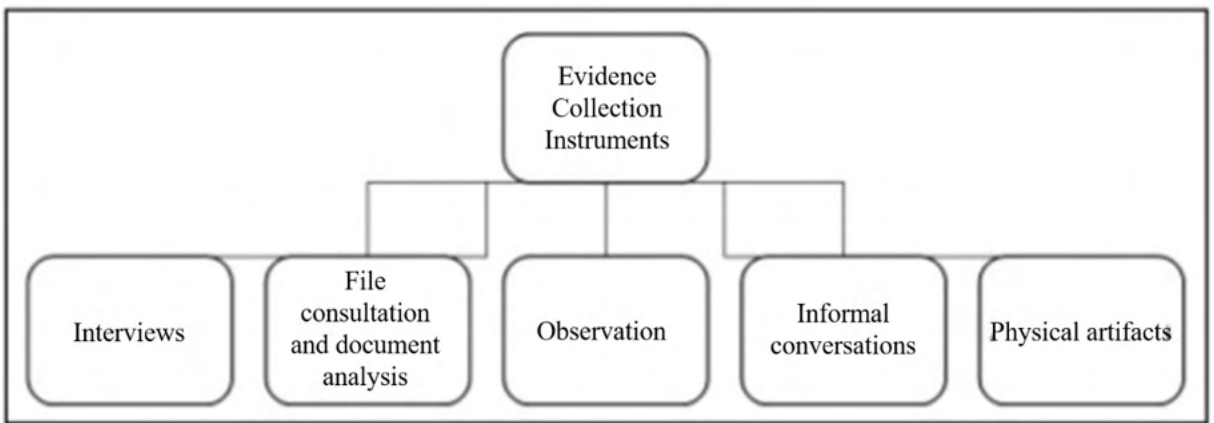


Figure 4 – Evidence collection techniques/instruments.

Source: Adaptado de Eisenhardt (1989), Voss, Tsikriktsis and Frohlich (2002), Yin (2005) and Bryman (2008).

define the techniques for obtaining data and evidence. The main techniques are presented by Eisenhardt (1989), Voss, Tsikriktsis and Frohlich (2002), Yin (2005) and Bryman (2008), in the figure 4.

This work is inspired by the Case Study methodology, although it does not triangulate data, having only two data collection sources: document analysis and observation.

Data were analyzed using the technique proposed by Bardin (1977), following the rules of meaning, enumeration and categorization. Finally, the company's internal circulation documents provided by the interviewees and public order documents made available by the company on its website were consulted. Furthermore, it is noteworthy that the data were analyzed according to the phases of the GPD, presented by Farinelli, Santos and Galli (2018): identification of long-term goals; breakdown into annual goals; top priorities and control and review metrics.

RESULTS: CASE STUDY

The present work analyzed a Brazilian company in the multimodal logistics sector that has approximately 7,000 employees, headquartered in Belo Horizonte, Minas Gerais. The company carries out transport and storage of commodities in the agricultural, industrialized and steel industries through road, rail and cargo transshipment terminals. Specifically to apply the method, the context used was one of the business units that has a staff of 527 employees. The following sections present the results identified considering the phases of the GPD.

IDENTIFICATION OF LONG-TERM GOALS

The consultation of files and analysis of planning documents made it possible to identify specific guidelines for the logistical corridors, based on the geographic regions

of operation and segments of transported products. The Strategic Planning for the years 2018-2022 promotes a translation of the company's mission, vision and values to the four strategic drivers that must guide the tasks of the business units for the period described, which are:

- Sustainable operational performance
- Growth in revenue base
- Healthy level of return on investment
- Efficiency in risk management

BREAKDOWN INTO ANNUAL GOALS

To promote the deployment and feedback of the strategic objectives, a schedule was prepared, shown in Figure 5, which considers shared activities, divided into meetings promoted through meetings and stages of internal exercises, where each area promoted analysis and discussions between leadership and technical staff, for the four area managers of the business unit.

For the sustainable operating performance driver, targets were established related to customer satisfaction and production volume.

For the growth driver in the revenue base, targets were established related to the viability of new business projects. The time horizon applied to the implementation and return of projects corresponds to the period 2018-2022, according to strategic planning.

For the healthy return on investment driver, expense management goals related to fixed, variable and direct expenses were established.

For the risk management efficiency driver, goals related to the business unit's risk management were established.

TOP PRIORITIES

In order to define the main priorities, it was necessary to obtain access to historical operational data sources, analyzed by a multidisciplinary group mobilized between the area managers, during the second exercise

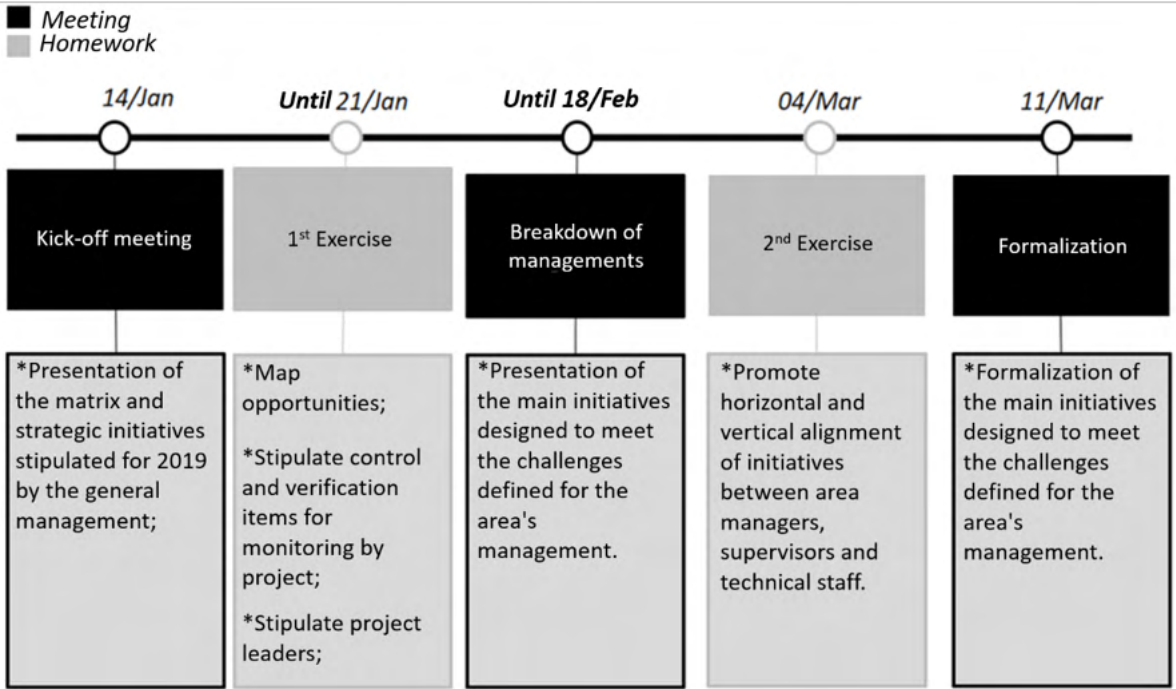


Figure 5 - Unfolding schedule.

Source: Prepared by the authors from the analyzed documentation.

of horizontal and vertical alignment of the initiatives.

For the volume target, the product import rate indicator was correlated, measured in the unit of tons/hour (t/h) and for the customer satisfaction target, a new maintenance quality indicator, measured under the unit of adherence to the availability of equipment operation.

For the goal of making new businesses viable, the implementation of two digital transformation projects was correlated with two performance support activities. The time horizon applied to the implementation and return of projects corresponds to the period 2018-2022, according to strategic planning.

For the expense management goal, it was correlated by the sum of savings achieved in fixed and variable expenses in reais, with a stipulated minimum attainment of R\$10MM.

For the risk management goal, the risk mitigation indicator was correlated by

reducing its risk appetite, classified as mild, moderate or severe. The priority is the mitigation of at least 2 risks among those mapped.

CONTROL AND REVIEW METRICS

In order to meet the import rate and maintenance quality indicators, routines were established for analysis and monitoring of the indicators, to meet operating assumptions and deal with recurring deviations that affect the stability of the processes.

For the indicator of implementation of digital transformation projects, routines were established for the implementation of projects, one of which was for “Monitoring of Mobile Machines” and one for maintenance “Predictive Maintenance of Rollers and Bearings”.

For the sum indicator of savings made in fixed and variable expenses in reais,

with a stipulated minimum achievement of R\$ 10 MM, routines were established for mapping and implementing opportunities for operational improvement through the use of quality tools to enable reduction of waste in the respective processes.

For the risk mitigation indicator, follow-up routines were established for the actions mapped and stipulated by means of an internal audit applied by the competent area of the company.

From the performance analysis of the main business result indicators in the year 2018, an X-matrix was prepared to promote the alignment and correlation between: (1) company value drivers, (2) strategic goals of the unit of business, (3) priorities and (4) initiatives and projects for the year 2019, as shown in Figure 6:

Through the application of the tool, 7 follow-up initiatives and projects were deployed among 4 area managers of the business unit, divided into: management, operation, maintenance and utilities. The formalization of the main initiatives and projects prepared and aligned between the four area managers took place through the application of the strategic A3 tool for each priority established for the year 2019.

Table 1 shows, directly from the strategic drivers, which targets or priority goals were established for the year.

From the monitoring of each strategic A3 proposed by projects or initiatives and based on monthly performance, route adjustments were promoted or not, depending on the trend towards achieving the goals established for the year. The graphs shown in Figures 7 and 8 were stipulated as a way of monitoring the performance results.

For both indicators, the calculation was made monthly, and for the other indicators, the calculation was made on an annual basis, with monitoring carried out through the

implementation schedules of projects and initiatives. In the next session, the comparison between the years 2018 and 2019 is presented.

ANALYSIS

Regarding the analysis presented, for the performance driver, the result indicators presented have the opportunity to establish upper and lower limits for the control charts, based on the collection of historical data from monthly calculations. The absence of these limits made the process of identifying critical deviations from punctual problems difficult. For the risk management driver, there is an unmet need to investigate new ways to classify them, so that there is a better targeting of risk as to the hierarchical level to be treated given the magnitude of investment required for mitigation. The table below shows the results obtained in 2019 for each stipulated strategic driver.

For the product import rate indicator, the result was 221 t/h for a target of 150 t/h and the maintenance quality indicator was reached, with a result of 163% for the target of 100%.

For digital transformation projects, they were implemented with a NPV result (R\$ MM): +0.65 for a NPV target (R\$ MM): +0.5.

For the indicator of savings made in fixed and variable expenses in reais, the result was R\$ 11 MM for a target of R\$ 10 MM.

For the risk mitigation indicator, two risks from severe appetite were reduced to moderate appetite, through actions prioritized in current investment.

FINAL CONSIDERATIONS

It is possible to emphasize the importance of applying methodologies that promote a technical and rational translation of medium/long-term objectives into executions aligned with them, as exemplified in this work. The clarification of the indicators unfolded in a

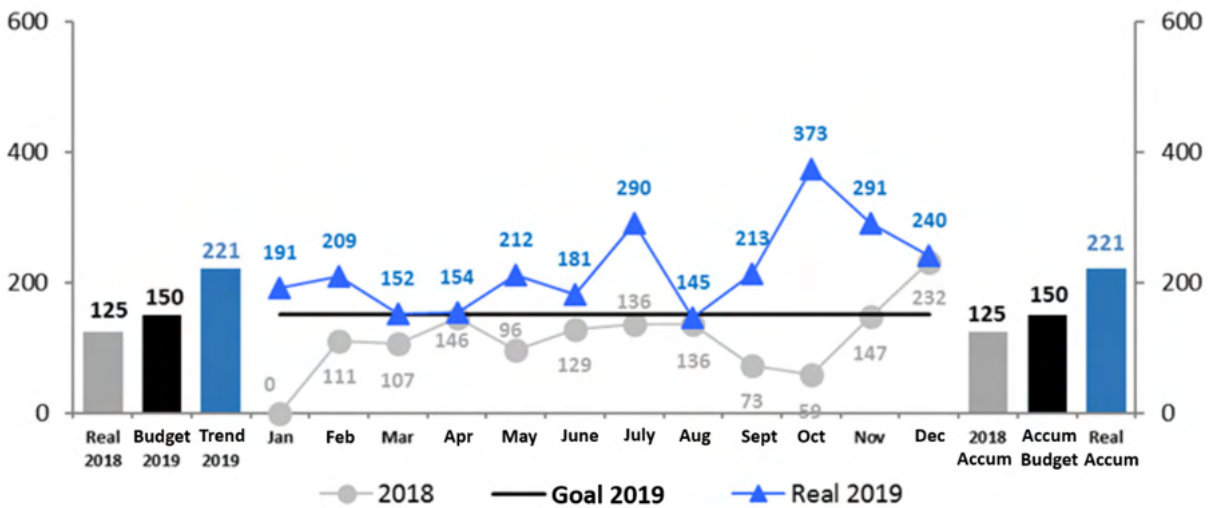
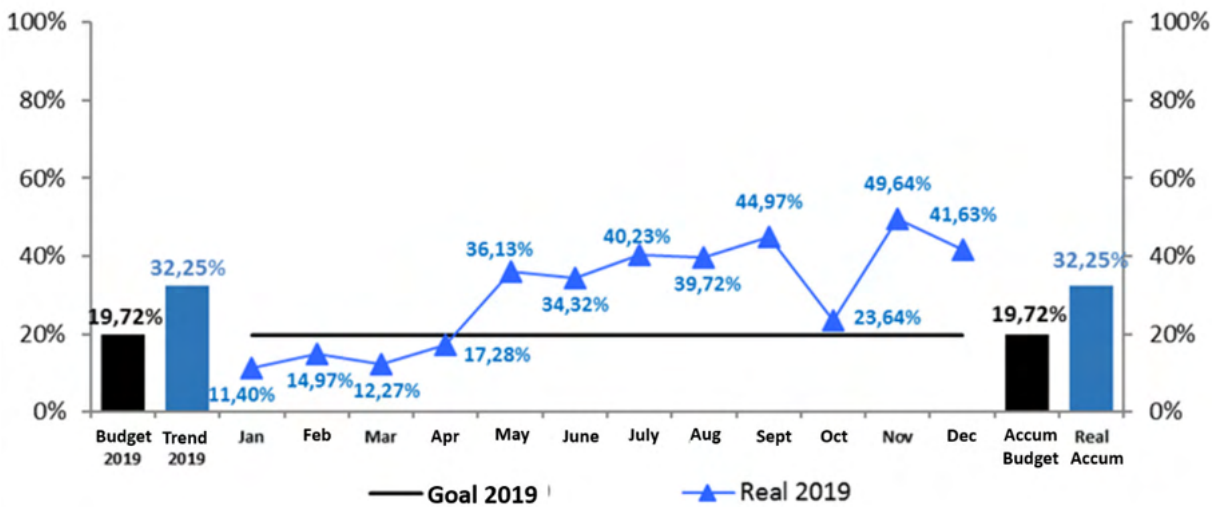


Figure 7 – Import rate (t/h).
Source: Prepared by the author.



Meta = goal
Real = real

Figure 8 – Quality of maintenance (%).
Source: Prepared by the author.

OBJECTIVES OF LONG TERM	STRATEGIC GOALS 2019	RESULT 2018	PRIORITIES 2019	RESULT 2019
Sustainable operating performance	Customer Satisfaction	Maintenance Quality: not verified	To adhere 100%	Maintenance Quality: 163%
Sustainable operating performance	Volume	Importing rate: 149 t/h	To reach 179 t/h	Importing rate: 225 t/h
Growth in revenue base	To enable new business initiatives	Projects: 0 VPL (R\$ MM): 0	To deploy 2 NPV (BRL MM): +0.5	Implemented Projects: 2 NPV (BRL MM): +0.75
Healthy level of return on investment	Fixed Spending + Variable Spending + Direct Spending	Expense management: BRL 8 MM	To save: R\$ 10 MM	Economy: R\$ 11 MM
Efficiency in risk management	Risk management	Risk Mitigation: not verified	Mitigate 2 severe appetite risks	Severe risks mitigated: 2

Table 2 – Verification of results.

Source: Prepared by the authors

meta-measure relationship, presents itself as a source of support in the construction of the necessary routines to achieve the results, in line with the strategic guidelines stipulated by the company. This way, we sought through this work to contribute to theoretical debate and practical implications.

Another important point related to work concerns the change of perspective from time management to energy management of work routines. The application of methodologies and tools are able to assist in the process of identifying key activities and allow the energies of work routines to be focused, at different hierarchical levels, in order to leverage the productivity of processes that directly impact results.

One of the disadvantages of Hoshin Kanri is the low forecast of events on an annual horizon. In fact, this annual goal setting has been largely rejected by the agile community due to the need for a system that adapts to the dynamism of today's world.

For the context presented, it is possible to identify several lessons learned both in management and in technicians, and it is possible that studies will be carried out on how methodologies are calibrated based on adjustments made in the company's strategic planning. In addition, it is possible to investigate how employees are trained and educated in the management model, in order to be able to put these methodologies into practice, through adjustments in work routines.

Finally, it emphasizes the importance of the production engineering professional in the process of understanding the application context and adapting the available methods and tools, in order to promote an alignment between individual contributions and the achievement of strategic objectives.

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