

Audits in Business Partners Focused on the Ideal Process for Implementation of Process *Poka Yoke*

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Abstract: With the resumption of economic growth, companies are experiencing problems with the lack of accuracy in the deliveries of their business partners with greater intensity; aiming to elucidate this fact, we have as example the study of the indicators of attendance of the problems that the company Honda Automóveis has received monthly in the last 15 months (period that includes part of the Brazilian economic recess and resumption of the economy growth). In order to analyze and explain the results about the new method of “auditing” in suppliers, where in the conventional way, it is audited in the processes evidencing the failure modes, being in charge of each of the business partners, assess the causes and mainly return with countermeasures, in the new condition (already in progress), is adopted the use of the audit process against what is understood to be an ideal process in each step that makes the manufacture of a product in the entire logistics chain in bound and out bound) as well as assess deviations from Quality and Logistics. Thus, the present study aims to evaluate nonconventional method of application of audit in business partner and evaluate the evolution in the service question.

Key words: audit; ideal process; quality tools

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1 Introduction

In a scenario of stagnant or falling economy, it is natural that to balance the accounts, the companies remodode their staff, leaving the lower effective. But in a contrary process regarding the economy, there is a certain delay in the adjustment of the picture, much because of the lack of confidence and even to evaluate if the increase is lasting or only a peak that in some months will tend to retreat.

In these cases, where there is a delay, the company needs to meet a growing market demand with the same amount of resource, and that is where the failure potencies begin, given the amount of overtime that will deplete the productive vigor of its resources. collaborators, as well as the well-known “jeitinho” or shortcuts to take care of the growing demand that causes failures in the process of production and/or expedition to the customer.

Bearing in mind what are ideal processes and causing suppliers to effectively implement these processes, the present work aims to evaluate the effects or results of conducting process audits in these suppliers, in order to direct the actions of containment of failure by acting in their processes and changing or modeling them to an “ideal process” that is described by the client company; in this case, the case study will be used at Honda

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Automóveis do Brasil Ltda de Sumaré-S.P.

This work is justified because of the growing need for improvement and automation of processes, and the same is in line with what current experts say about the new industrial revolution or simply industry 4.0; since all the effort that a company of the size of Honda carry out in search of migration of its processes can have its efficiency or result affected by the level of quality of the service of its suppliers and business partners to their demands.

2 Theoretical Reference

According to Slack, Chambers e Johnston (2002, p. 415),

... although all operations in the chain have the immediate goal of satisfying their own immediate consumer, the purpose of supply chain management is to ensure that they have a full appreciation of how together they can satisfy the end consumer. A central question for all operations is, “What is the level of quality, speed, reliability, and flexibility that I need to develop in my part of the chain to satisfy the end consumer?”...

Based on the premise of meeting the needs of a client, Maranhão (2002, p. 147) also corroborates the above statement in the following explanation:

The things that make up both the entrance and the exit can be of any nature. Examples of input or output are: Information, tangible products, services, etc.

The output or product should ideally be aimed at meeting the needs of a customer, the *raison d'être* of the process.

Ideally, the product of the process should be such that it completely meets the needs of the customer. When this happens, we say that the process is done with Quality.

That is, based on the strategic condition of being a customer, the company must define the necessary actions of its suppliers to be delivered products and/or services with quality, using some means to declare them, whether by contract, description in memorial, procedure, minutes, design, specification, drawing or in the case of the object of study, an audit.

Eliminate the potential of human failure in the interactions between production processes and meeting the demands of the company, where at each stage of production what will validate if a package, piece, basket, color, quantity is correct, it will be the system and not the employee.

For the above-mentioned condition, the case study of Honda Automóveis do Brasil Ltda de Sumaré is presented, which, through audits directed to the ideal processes, engages suppliers in the acquisition of new production methods such as production sequencing, pulled from HAB (Honda Automóveis do Brasil - applicable only to Sumaré plant) etc.

2.1 Important Information

The work also addresses the automation of checking and assurance of quality and accuracy of the production processes of what is produced in each stage of the operation of a manufacturing system, taking the employee this responsibility, in addition, has as measurement the indicators before the audit process and is compiling new indicators subsequent to the audit process.

For the mapping, we used the stratification of information extracted from the database that is fed via ROR¹ portal (Report of occurrence on receipt) according to Figure 1, following example that already shows the stratified data after importing the information from the database:

ANALYSIS OF ROR

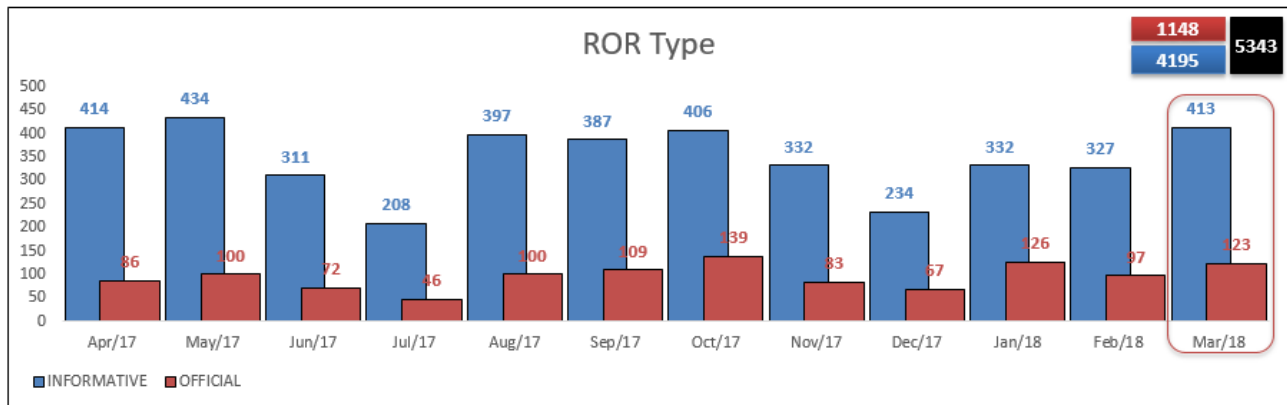


Figure 1 Indicator of “Receiver Occurrence Report (ROR)”

Source: Portal ROR Web Honda

Being a company already consolidated and with uniform demand growth, the importance of this process is to avoid production line stops due to failures in deliveries, being the most diverse, such as packaging invoiced and identified as X and allocated part Y, moment of detection = Production, that is, without reaction time, leaving the production line stopped until new parts arrived.

The study process here aims to evaluate the efficiency gain in suppliers' service to Honda, which will give base to play the role of process auditor, as well as the basis for insertion of the author in the academic environment as a teacher in the coming years. years.

Also because it is an activity to be held in bound, it is believed that for college, the gain would be in the accumulation of experience and expertise on processes, which is little explored in logistics courses in general and that currently has great relevance for the professional of industrial logistics and of supplies and purchases.

2.2 Detail of the Operation (Audit)

When an audit is mentioned, it should be understood that it will have some steps to be completed in order for the out puts of the customer to the supplier and the same can modify, create or modify its processes in order to meet the stated requirements according to the schematic model demonstrated in Figure 2.

2.3 Data Collect

Collection and compilation of data about Honda's failure to attend to its business partners, took place in the company's own database, where the student has free access.

It was analyzed in two periods, before and after the performance of the supplier's audit and its evolution in relation to the indicators of occurrence on receipt and the result in the Delivery Evaluation Ranking.

After analyzing the data, it is expected that the indicators of each supplier have improved in terms of attendance so that there is also a reflection on their evaluation in the Honda service indicators, as an example, we

¹ The portal originally called “**IOR**” in Portuguese, short for “**I**nforme de **O**corrência no **R**ecebimento”, per hour, we will call ROR – “Report of Occurrence in Receiving”.

have below in Figure 3 the evaluation of one of the suppliers with indication of before and after the audit performed and with results pointed out together with the expected actions.

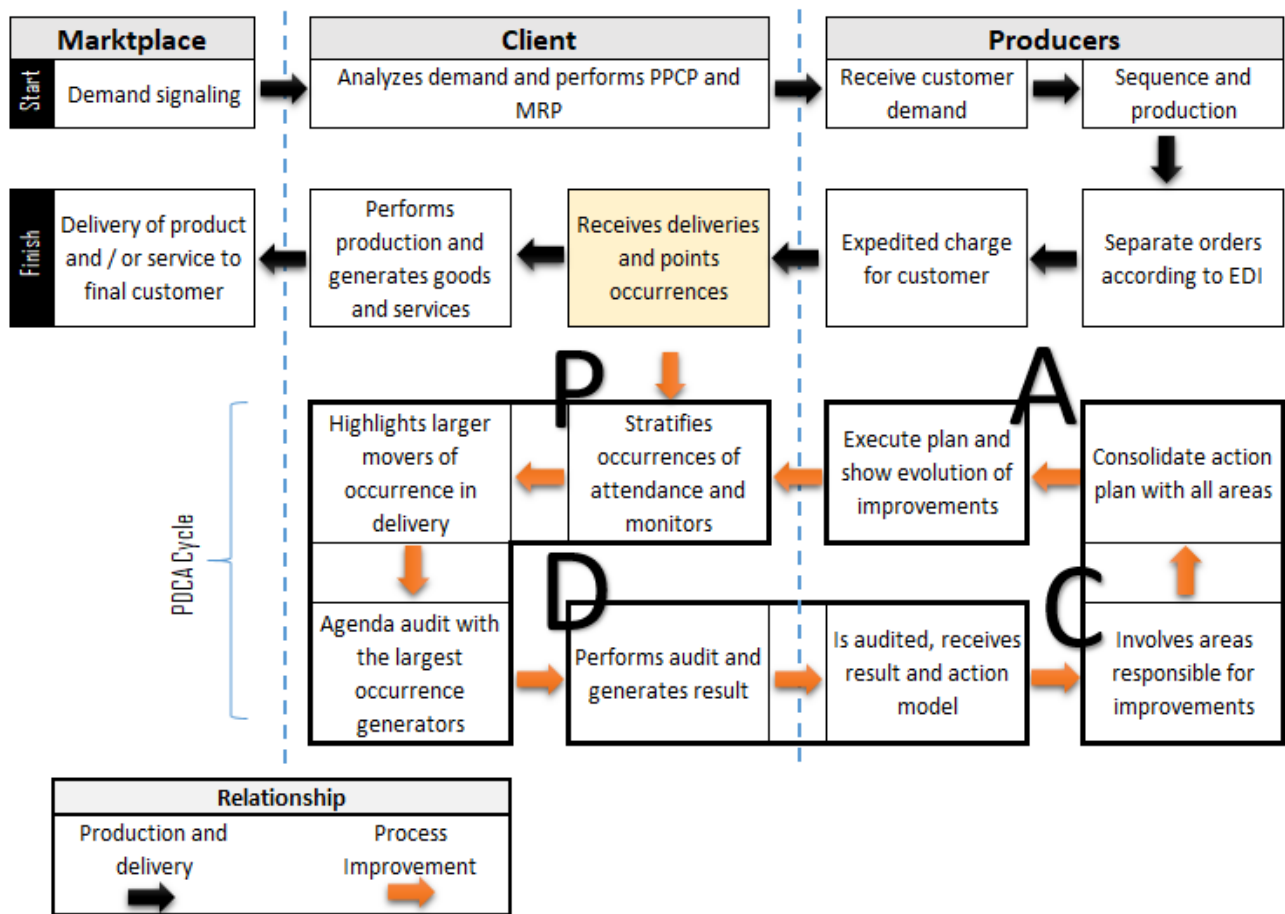


Figure 2 Flow of Customer and Supplier Interaction Regarding Service and Improvements

Source: Author's own article on logistics audit Honda

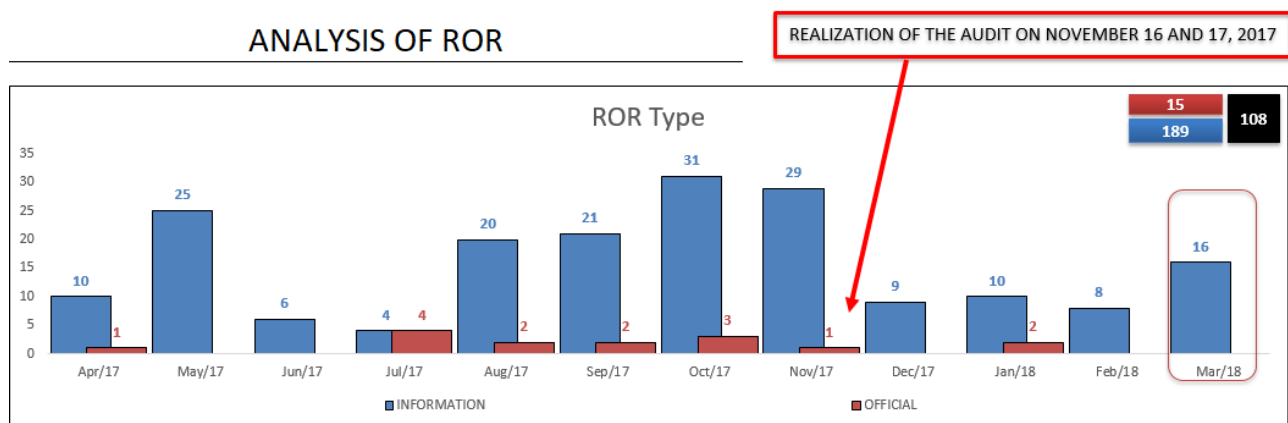


Figure 3 Occurrence Tracking Chart

Source: Portal ROR Web Honda

The image above shows the evolution and improvement of a given supplier in relation to the official occurrences. Prior to the audit, it was followed for 5 consecutive months presenting problems of delivery and

afterwards, the types of occurrences in question were mitigated, having only 2 occurrences (punctual) in January due to system change and the need for manual controls that were healed within the same month of occurrence.

3. Development of the Activity in Him

3.1 In Puts for Execution

One of the characteristics of audit processes is to analyze the status of one or more processes against a requirement, be it a standard, contract, law, statute, guideline or any means/method that defines actions or procedures and spells out the needs of the stakeholder; taking this as a basis, the next step is to relate the points that need improvements because they present faults or failure modes. In this scenario, Benchmarks were carried out in several of the 164 national suppliers that serve the company and it was agreed models and ideas of process or process execution in order to guarantee more accuracy in deliveries, reducing or even eliminating occurrences of nonconformities in deliveries that are performed.

Of course, there are a multitude of variables to be taken into account, such as company culture, the degree of professionalization of employees and departments, the financial contribution to structure departments and processes or the complexity of the operation due to volume of deliveries, product mix, demand and peaks of production, but the most important factor is the vision of the situation; why there are suppliers that make 20 daily or more deliveries without occurrence and some with 1 weekly delivery generates in all of them occurrence of non-compliance, being an error of Invoice's issuance, failure to identify the material, sending a quantity divergent to the invoiced less like for more)?

To complicate the analysis, the reverse is also valid, where suppliers with several deliveries in the day, have several occurrences as well and another one with monthly delivery with vast product mix has no occurrence in its deliveries?

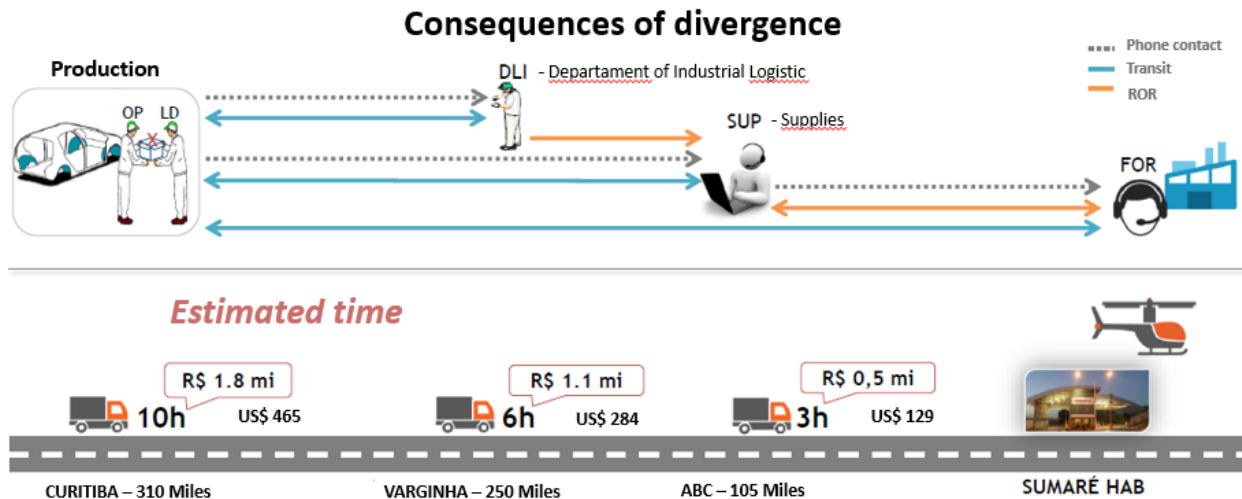
In view of the above, visits were made to suppliers who have a good track record in order to evaluate the best practices at each stage of the production chain, from the receipt of Honda's demand information to delivery itself.

3.2 Result of the Checks

In order to prepare the audit process with a focus on the actions to be taken, it was necessary to know what was wanted as an ideal process and it was necessary to evaluate on-site suppliers who did not have a good service history.

The processes were mapped in the two situations (service with efficiency and without any nonconformity) against exactly the opposite and that generates consequences as shown in Figure 4, which is the attendance with failure in the Invoice emission, packaging with different amounts to the invoiced, missing Invoice with the load, error in the identification or even no identification of the product, delay in the deliveries that culminated in the stoppage of the production line of the company and consequently costs with labor stopped, replanning to receive load outside the window hours of the dock among many other factors.

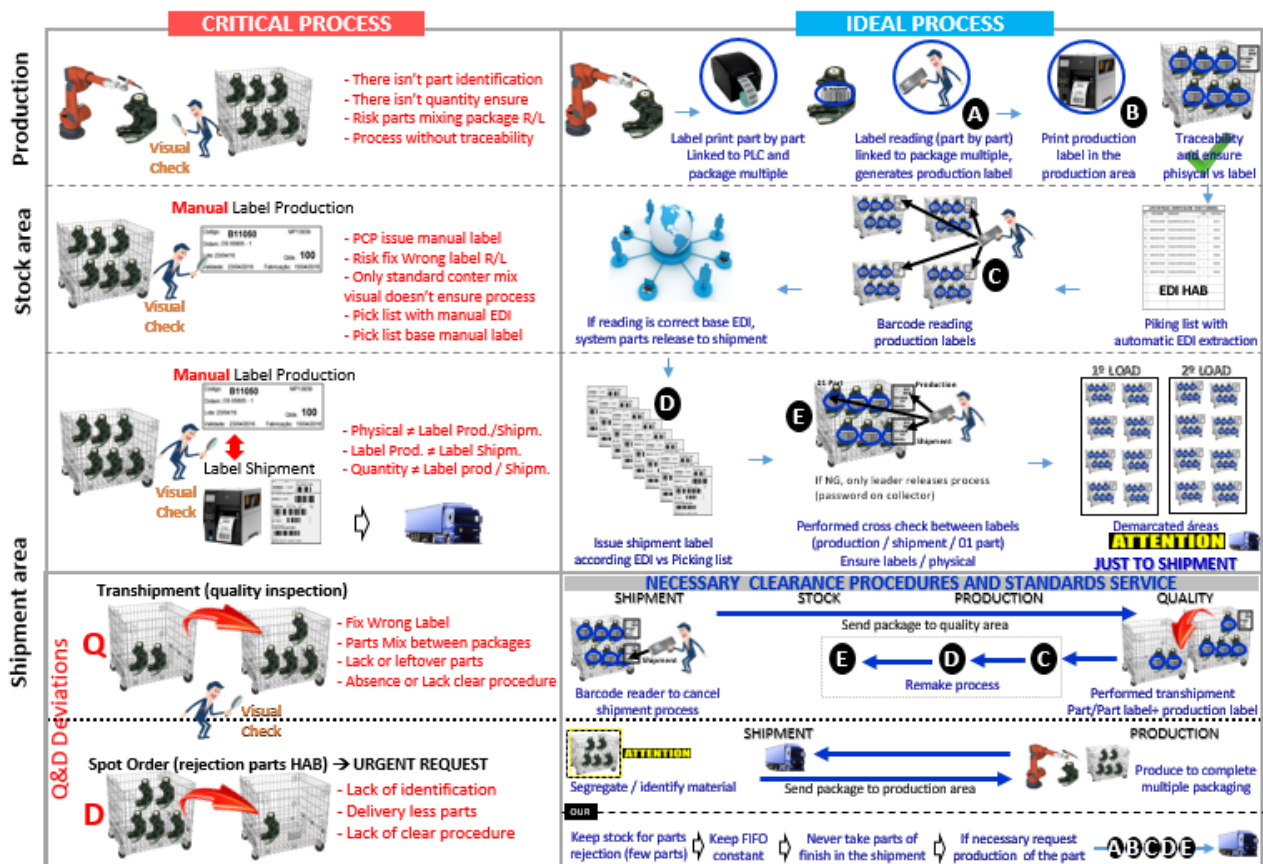
Well, with the vision of the two situations, a schematic model was elaborated to orient the suppliers in the action that is related in Figure 5, and in order that there were no occurrences after measures of improvement, it was agreed to evaluate the process from the beginning of production in which there is a need for controls to ensure the quality of the finished product at each stage of manufacture and that it is properly identified in order to avoid mixing of symmetrical or similar parts and that they have differentiations by color, drilling or application of different components or in different positions.



Necessary improvement in processes to avoid unnecessary cost.

Figure 4 Model of Consequence of Divergence

Source: Event Material with Honda Suppliers



Mandatory development of Poka Yokes in the production / stock to ensure correct send of parts for shipment

Figure 5 Schematic Model for Supplier Support

Source: Event Material with Honda Suppliers

4. Results and Discussion

As an example of the ideal process model, six suppliers were evaluated as shown in figure 6, since they are the most critical in the assembly process in the production line.

In the next stage of the initial analyzes, audits were scheduled and performed as of November 2017 with the following attendance condition (before and after the audit and improvement actions), which elucidates the influence on the occurrences indicated through portal.

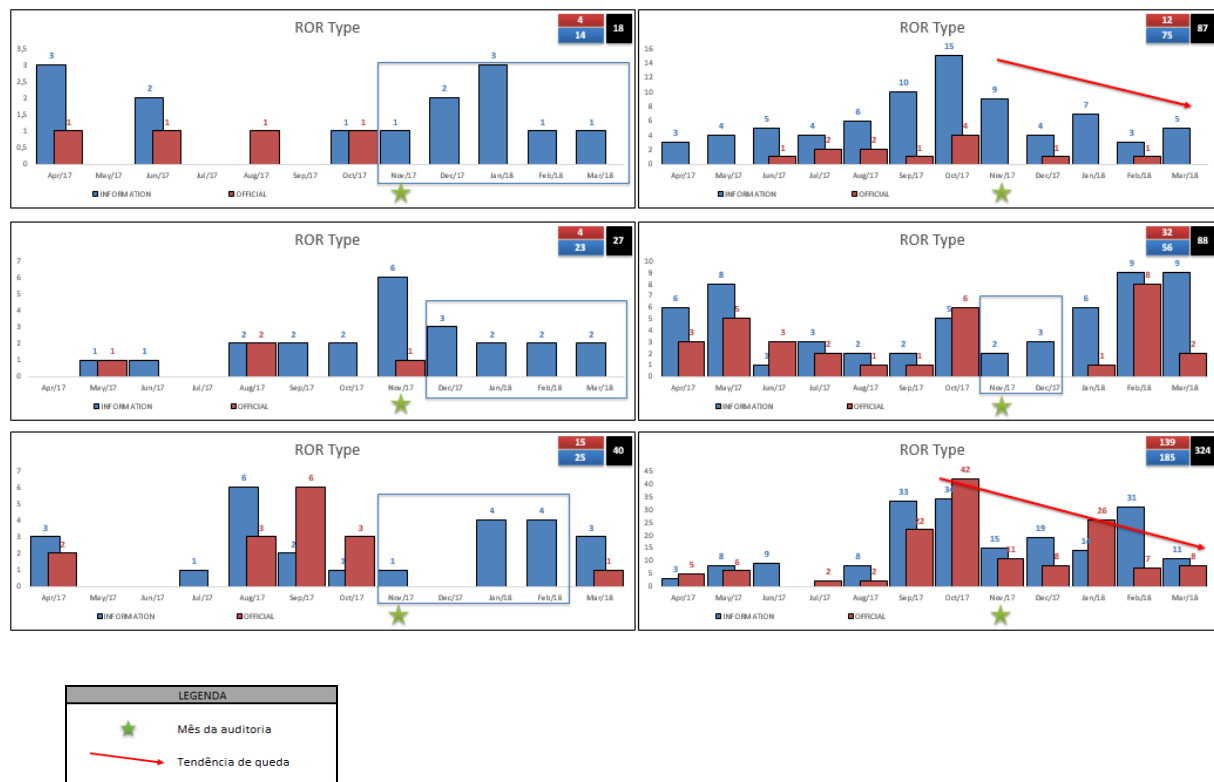


Figure 6 Service Indicators
Source: Stratification of RORs from Honda suppliers

5. Final Considerations

Based on the assessment and evolution of Honda care by suppliers who were audited and tracked for actions aimed at migrating production methods and assurance of visual/manual accuracy to automatic or via Poka-yoke, it is notable that there are improvements.

It is also necessary to follow the evolution, since for the evaluated suppliers, after the audit and for at least 2 months subsequent to the activities, they have eliminated the occurrences or downward trend by means of a phased implementation of the improvements if they are evaluated a deadline.

We also evaluated that a negative point may arise over time, since the standardization of processes in all suppliers, inhibits the creation and implementation of creative solutions for them, as used in the benchmark, but the decision to follow with the proposal it was necessary for the company to eliminate Downtime because of its suppliers' failure.

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