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## Seis sigma pdf

Welcome to a new blog post by Atlas Consultant. In our previous note we saw the main quality values for interpretation processes. This time, and to help interpret these concepts, we will develop a success story of the implementation of a Six Sigma project to improve the procurement process of a manufacturing company. We will also establish some basic principles when implementing this methodology. → I want to go straight to see the success story click here. You might also be interested in the following [link](#). While sigma is a Greek letter, it is also used to designate the standard deviation of the population of a process. This gives us a way to quantify the level of variability of the same. That is, the level of sigmas that a process has is how to describe how well the variation of the process meets (or does not) meet the customer's specifications. After seeing in the previous note, the ideal goal for a process is for it to have a six Sigma quality level. Next we will develop 5 fundamental principles when implementing this methodology and then we will see it in an example of industry application. 1. Employee management and Six Sigma projects with Six Sigma's own structure above all is a management program that involves a change in the way they operate and make decisions. This is why the strategy should be understood and supported from the highest levels of organisation leadership. When it comes to having Six Sigma projects with your own structure, it includes full-time people. If there is a way to express commitment to a Six Sigma strategy, it is by creating a management structure composed of business leaders, project leaders, experts and facilitators. Each must have a role (usually described in programs with ribbons based on martial arts and colors). In the image below you will see the directive and the technical structure of Six Sigma. 2. Training and accreditation Within the team structure, several of them must take a difficult workout, which is generally known as the black belt exam. This training lasts between 120 and 160 hours and is ideally done in 5 non-consecutive weeks, if each of them is associated with a stage of the DMAIC process. The goal of stretching over time is for the student to learn and at the same time to practice and implement what is acquired within their work perimeter. If we refer to what accreditation is, we can add that, ideally, these distinctions are not easy to obtain. Being the black belt, the green belt or the master must involve an effort, receive a workout and that you have knowledge and Necessary. 3. Six Sigma is customer-oriented, with a focus on process Another feature of Six Sigma is that it tries to ensure that all processes meet the customer's requirements in terms of quantity, volume, quality, time and service. Therefore, the start of such a project begins by analysing in depth the needs of the internal or external client. 4. Six Sigma is data-oriented and based on a robust methodology Data and statistical thinking help us identify what are the critical quality variables, their processes and areas, thereby guiding efforts in the Six Sigma strategy Quality improvements should never be implemented at random, on the other hand, project support should take place in those cases where it is possible to demonstrate that, when running the project, the project should be implemented the difference will be perceived by the client. After we know that the data itself does not solve problems, this requires a methodology. In this case, the six Sigma project strategy is based on the 5 phases of a DMAIC process. The following image details each of these steps. 5. Six Sigma projects are recognized and communicated A fundamental aspect of this program is that it is supported over time by strengthening and recognizing the leaders on whom the program is based, as well as the teams that carry out successful DMAIC projects. The modalities of recognition can take place on 4 levels: the first by greeting, the note of congratulations of superior leadership, the second presentation and presentation of the success story for colleagues and superiors, the third economic recognition and, finally, the fourth, which is the promotion to a position of superior hierarchy. On the communication side the objective is to generate and promote compression, support and engagement, both inside the organization and outwards (suppliers, key customers). This helps strengthen the new philosophy based on explaining what Six Sigma is and why it is necessary to work with it. Any result of the project obtained must be a fundamental part of the communication program The case that we will develop below was realized in a company dedicated to the assembly of certain metal components. One of his most critical problems in initial research was the great slowness that existed in his purchase authorization order (OC) processes of these components. This slowness experienced by the process was that the supplier's materials are not on time according to the production plan, thus causing delays in production orders and therefore also in delivery times. In turn, these delays have led to an increase in the cost of overtime has been repeatedly requested to meet deliveries in order to avoid transferring the delay from supplier to customer. Everything described above has made it necessary to generate a Six Sigma project to address the problem. As a starting point we see below a brief description of the definition phase of the project. The Six Sigma project for the OC authorization process. Date: 20/04/2014 V1.1TympThe time to authorize purchase ordersThe main internal section of the operating sector is that the authorization time of a cb is very long. Waiting for materials from suppliers is the main cause of delays in production orders. The most common consequences that often manifest themselves when they have a delay in the delivery of materials is the excessive overtime expenses required to fulfill the production schedule. By reducing the time of the certification bodies' licensing cycle, you will be able to reduce additional costs and improve customer satisfaction by reducing delivery times. Statement of the problemDefinimos as OC time cycle authorization at the time elapsed from the time the purchase request is received until CB is sent to the vendor. In the initial situation this time cycle for unapproved suppliers is an average of 27 days, with more than 95% of the OC dispatched within 45 days. For already approved suppliers, the average is 7 days, with 95% delivered within 11 days. ObjectiveReduces the time cycle to authorize CBs from unapproved providers and spends 27 to 10 days on average with a maximum of 17 days at a sigma level 3. ScopeLimit the project to the purchase of components from unapproved suppliers, which, according to the pareto analysis performed, represents 75% of the total cb. Additional Project Owners Purchase, Quality and Engineering.SponsorGeneral Operations ManagerSharer project area operations, purchase and accounts paid analyst, quality analyst and engineering analyst. Resources to pay database and vendor quality records. The main OC measurements cycle approval time Percentage of internal complaints about overtime OC delays attributable to the lack of OCInventory material delay in the process. Project Start Date: 20/04/2014Project Completion Date: 20/09/2014Project Rule Modified and Documented ProcessDecreasing During The Projected OcAhorros Annual Authorization Cycle: US\$20000 for Overtime Payment and US\$12,000 for Inventory Decrease in Process. Decrease in internal complaints about delays in the OC. During measurement, some of the instruments that are already explained above, as we describe below: A detailed logical diagram of the OC authorisation process has been carried out for unapproved suppliers of metal processing components. An analysis of how the key values involved in the project were measured (seen above). The aim was to understand whether it was measured well and consistently. The results obtained were considered satisfactory, with the exception of the measurement of the additional expenditure attributable to the lack of material due to the delay of the CBs, if it was not specified whether the delay was caused by the supplier's problems or by the delay in the approval of the central bank. At this point, the recommendation was made to modify this measurement to continue. The baseline has been calculated for the four values involved. For example, in the case of the OC authorisation cycle, depending on the sample taken we have in the initial situation an average equal to 26.4 days, with a standard deviation of 7.3 days. This implies that at 3 sigma above average we are declining in just over 48 days (over 45 days specified as the upper limit) Time cycle to authorize purchase orders before improvement In this case, we will conduct an analysis of the activity sequences to authorize an OC and graph map of the flow of values. On the basis of the claim that an authorisation does not add-up, it sought to call into question the existence of routine bureaucratic activities and waiting times. Basic activities include selecting certain suppliers, soliciting tenders, negotiating prices and managing the authorisation of managers in demanding areas. The analysis found that, in general, the authorisation process was moving from one stage to another in lots or groups of certification bodies, and not individually, as originally thought. In addition, it was detected that most of the process was consumed in waiting times for managers to sign CB. The striking thing about this is that in practice, when signing CB, managers have not reviewed it in depth, relying on certain previous firms. The signature they made was just informative. The conclusion at this point was that the main cause of the delay is the design of the process itself (activities and sequence), so the recommendation was the total redesign of it. To reach this point it was necessary to go beyond the traditional view that the buyers, and those who managed the authorisation process, were negligent and that, for this reason, the process was slow. In the proposal to redesign the process, a strong emphasis was placed on the flow of authorisations not in batches, but, on the contrary, in order to simplify the tasks that were not important for the efficiency of the procurement process. This proposal was shared to receive feedback from project managers and sponsors to achieve an administratively viable process as well as agility. The redesign proposal excluded activities related to validations and signatures of some actors, eliminating the expiry of the deadline. The management team has given its authorisation to implement it for a quarter in the form of a test. After three months, the preliminary results were satisfactory. In particular, the duration of the OC cycle for unapproved suppliers was on average after the 9-day improvement, with a standard deviation of 2.5 days. Compared to before and after, the average duration of the authorisation cycle of certification bodies of non-erat suppliers increased from 26 days to 9 days, and their standard deviation from 7.3 to 2.5, reflecting a decrease in both parameters by about 65%. Duration of the post-improvement purchase order authorization cycle Because the improvements implemented have achieved the objectives pursued, changes to the new process have been formalised at the control stage by: Defining and standardizing the new purchase process for unauthorized suppliers. Document the new procurement process for non-pros (adjustments to appropriate systems and software, updating procedures and work standards)Implement control charts to monitor critical values: OC cycle duration, overtime, and inventory in process. Finally, it was decided to continue monitoring these variables for a few more months before assessing the final financial impact. In short, we've reviewed the 5 fundamental principles for implementing a Six Sigma strategy for continuous improvement, and we've also seen a typical project success story, so you can take it as a reference when you apply it in critical processes. Do you want to correctly interpret processes and implement Six Sigma strategies, but don't have the structure or knowledge to do so? Click the balloon on the right and write! We will contact you immediately to tell you we can help you boost your business. To learn more about Atlas, visit our Services section. Follow us on Facebook and Instagram. Note.