Reduce the Amount of "Turnback" on the Classification Center

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Abstract

The Reduce the Amount of "Turnback" on the Classification Center research consists in the large amount of turnbacks that occur on the database system on a daily basis, these turnbacks are errors that affect the service time that is performed when classifying items for the customers, in other words, any error that consumes a certain amount of time and interrupts the classification process. These classifications are all types of items or documents which must be classified with their correct regulation and jurisdiction. Using the DMADV tool it was possible to find the highest quantity of turnbacks that occur on the system. In this research is determined that the highest amount of turnbacks was the lack of information, which has an average of 48.41% of the total turnbacks and the other 51.59% are the rest of the defects registered. The design that was developed to solve the turnback problem was to perform a checklist where it is provided to the requestor with a simple and easy to understand guidance in order to help the requestor to successfully submit a request. This checklist is provided to all customers, and it help to avoid so many errors occurring on a monthly basis that has reduction of turnbacks of more than 50 %. The classification center of company X have less time wasted and obviously reduce the amount of expense and helped focus more of other customer and new projects.

Key Terms — *DMADV method, turnbacks, classification, and guidance.*

Problem Statement

The research is based on a current problem that is happening every day on the company and is affecting the output of item and delayed the work that is being done during the day, this affect not only the company but the business that are receiving service of the classification of item to export/import. The issue that is presented on daily basis are called "turnbacks" which means an error appears on the request of the classification of an item, the common error is poor information of the item, wrong business unit, wrong functional area, incorrect item identifier, the item is already classified or protocols that are being overlook which can't do the classification properly. Acting on this problem would solve this issue that it is never being taken into consideration and would help the team of classifier to reject less request and work more efficiently throughout the classification.

Methodology

The methodology that is conducted on the research is the Six Sigma tool called DMADV which help to structure and organize the work done on the project. On the Table 1, there is a brief definition of each step of the Six Sigma's tool.

DMADV Methodology Tool	Description
Define	Define the problem and established the goals of the project.
Measure	Measure the process or data obtained.
Analyze	Analyze the data and develop design alternative.
Design	Design the selected alternative and test the process.
Validate	Validate that the design meet all the requirement to achieve the goal.

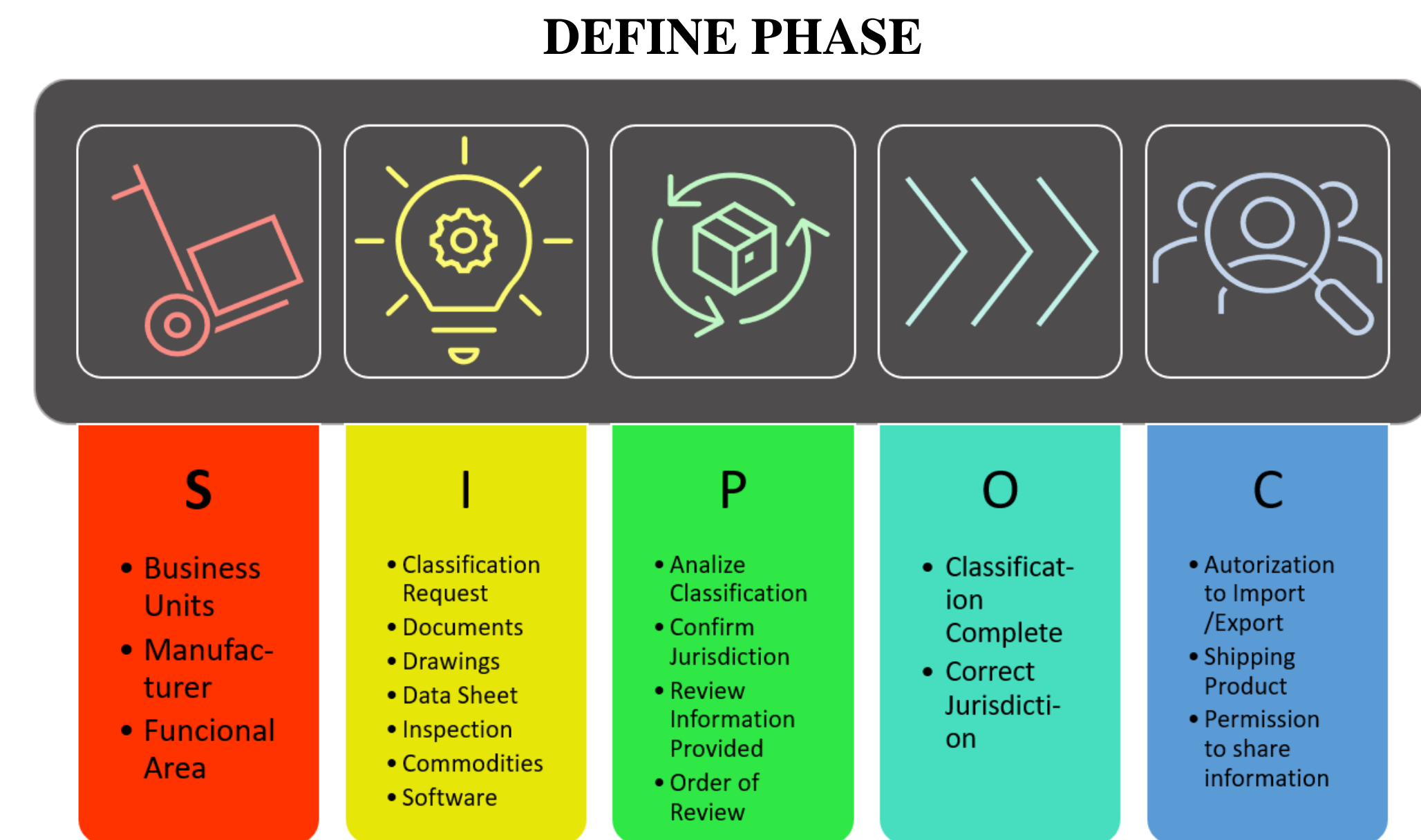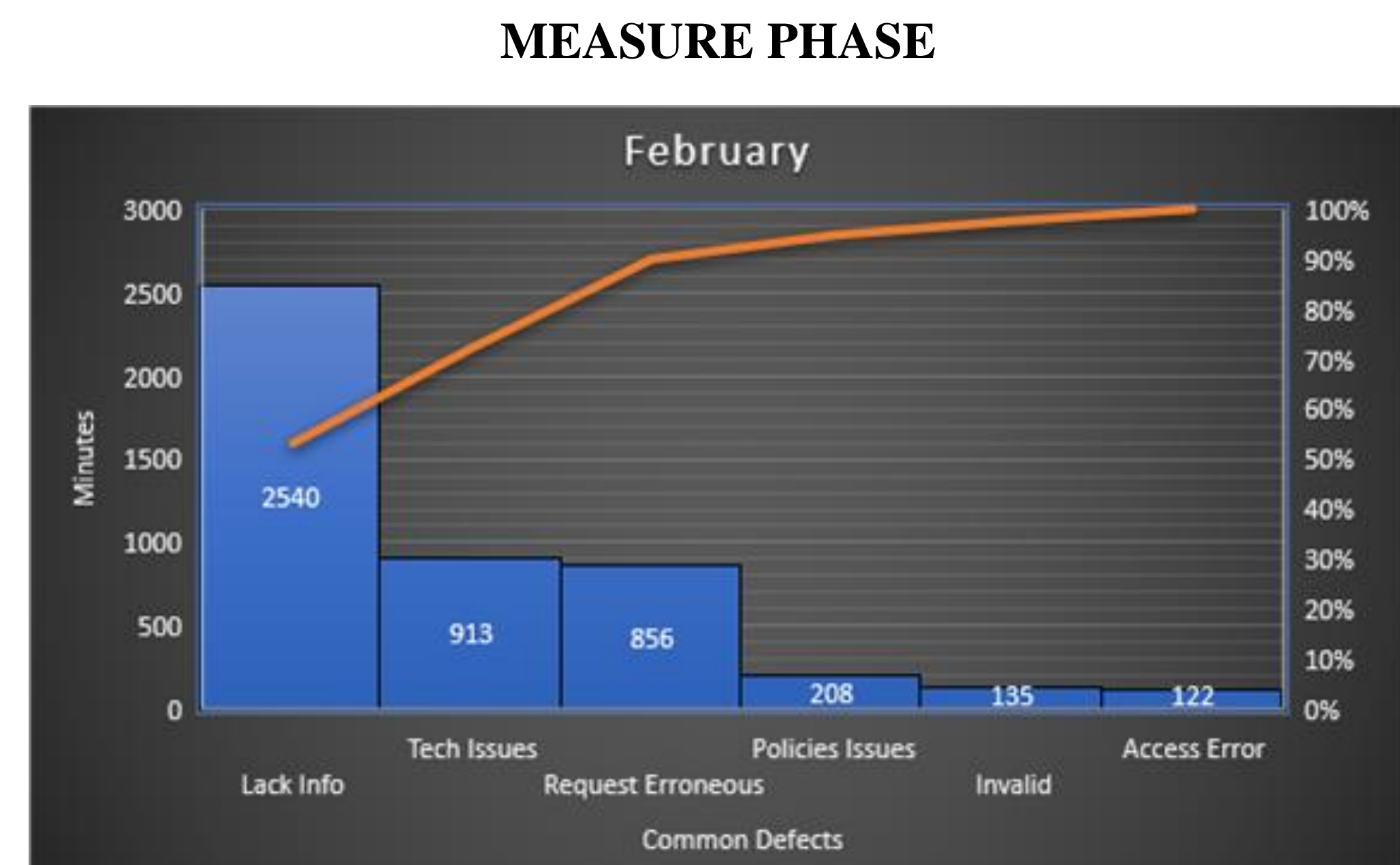*Table 1: DMADV Methodology Tool.*

Results and Discussion

DEFINE PHASE

*Figure 1: SIPOC Diagram.*

MEASURE PHASE

Graph 1: Pareto Chart.

The Pareto chart was used to find the majority of the turnbacks that are registered on the database which the defect with the most turnback was the Lack Info that it take 48.41% of the total turnbacks on the system. The Boxplot was used to have a better understanding how much minutes are wasted on the turnbacks which it is found that the time wasted on the 2 most time-consuming defect the total of minutes wasted is between 727.6 and 1,988.0 minutes.

Graph 2: Boxplot of Lack Info.
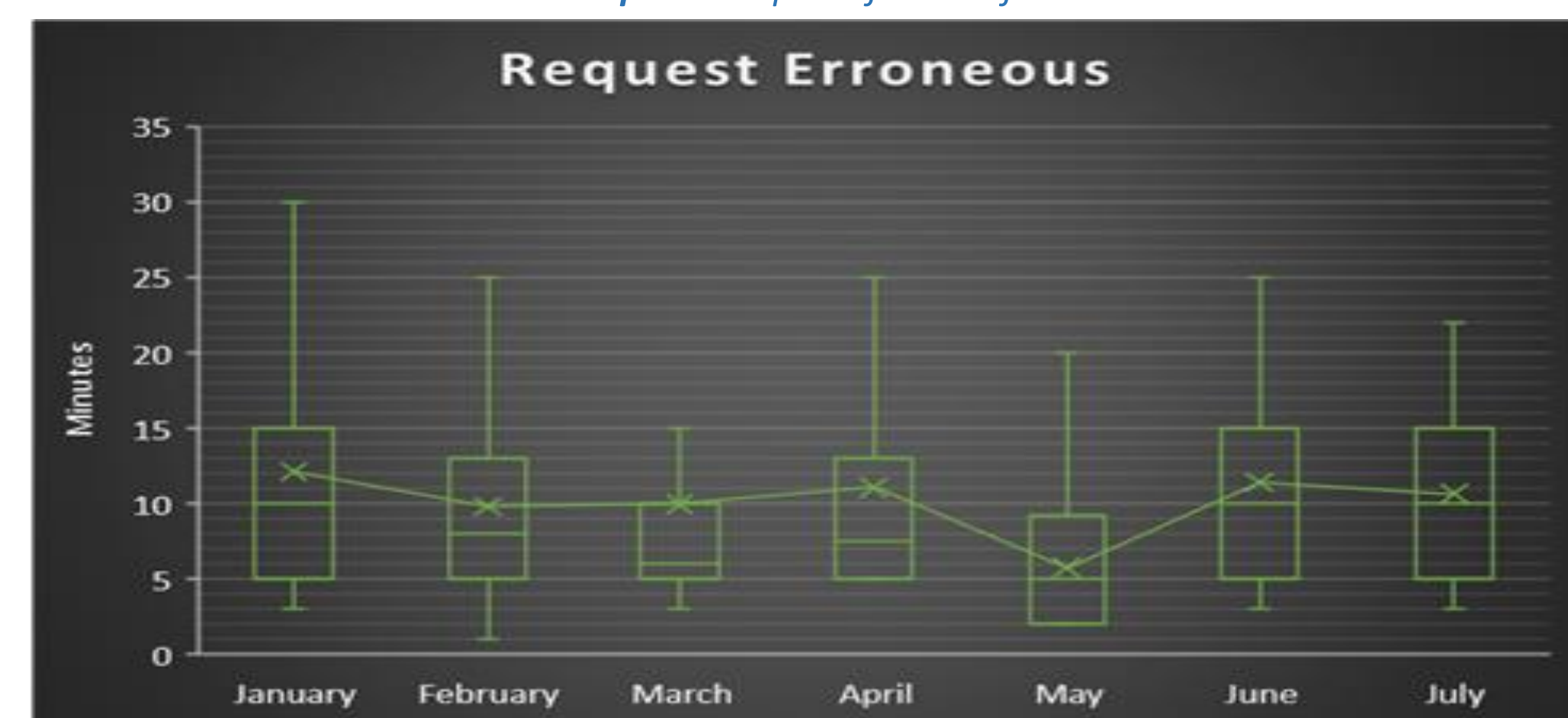
Graph 3: Boxplot of Request Erroneous.

ANALYZE PHASE

On this section of the research, the fishbone diagram was used to to help discover the defects, failures, and variations within the process of classification, the fishbone diagram is one of the most used and efficient technique when talking about root cause analysis.
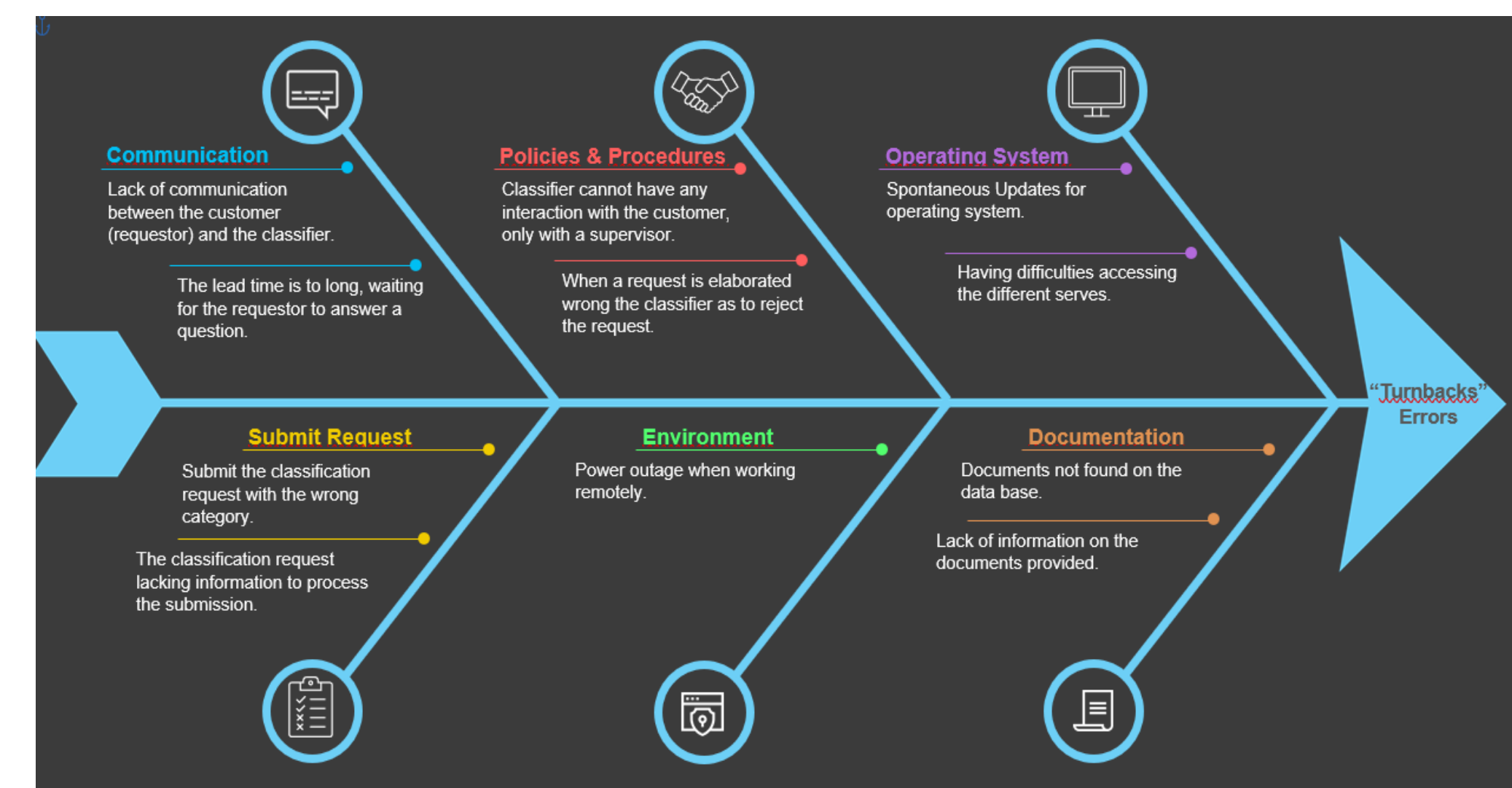

Figure 2: Fishbone Diagram.

After the fishbone diagram is develop it is necessary to conduct the 5 Why's Tool because each of this tools complement each other. The fishbone diagram focused on identifying the problem and the 5 Why's focused on why the defects are happening. The development of the 5 Why's tool it is able to identified the root of the defects which on this case is because the requestor do not have the guidance or training to submit a request successfully.
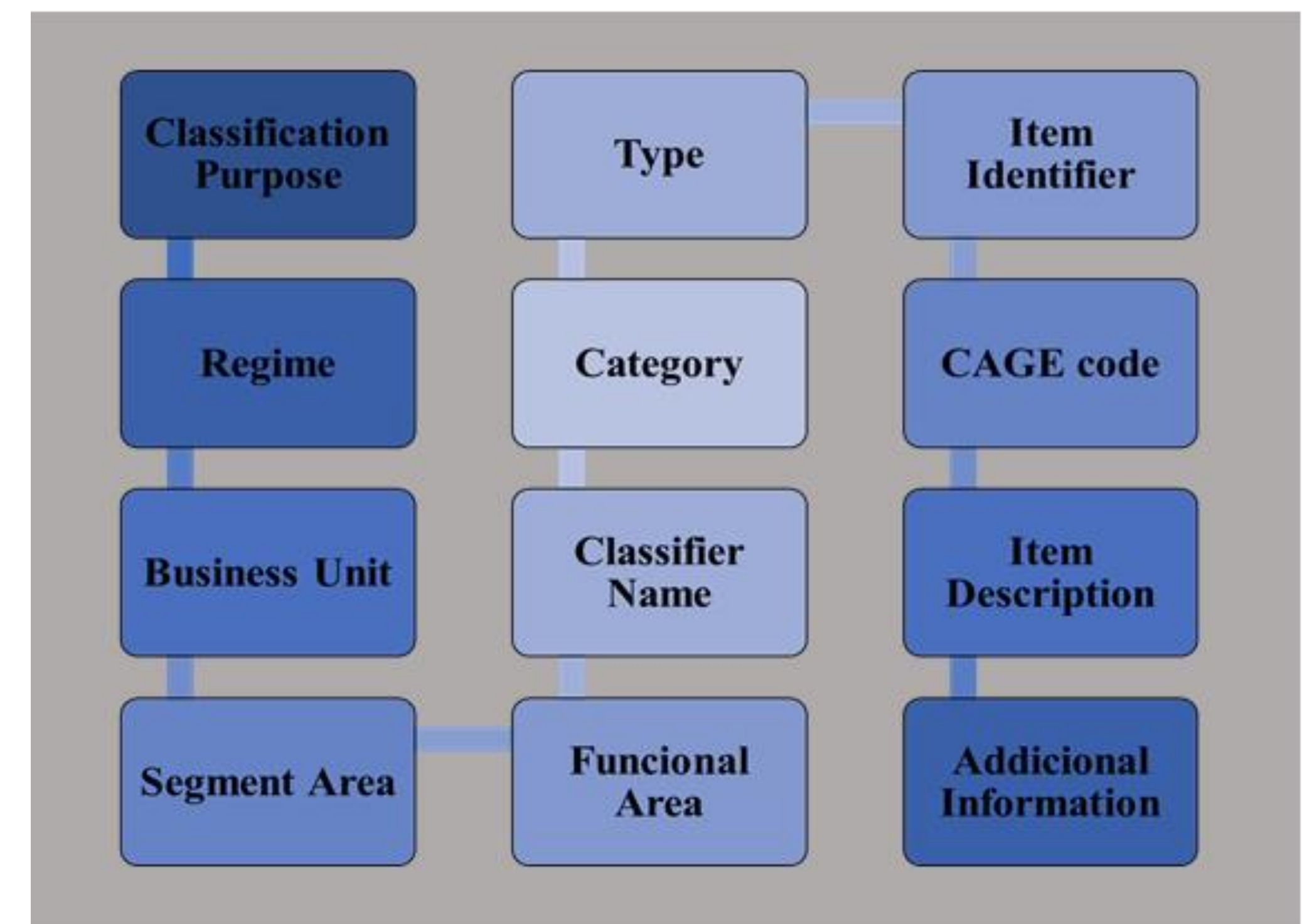
DESIGN PHASE

Figure 3: The Process of Requesting a Classification.

VALIDATE PHASE

On the final phase of the tool of DMADV is validate which focused on the verification of the design develop previously were multiple test are processed to ensure that the design reach the objective that was implemented at the begin, on this case the reduction of the turnbacks that enter the database. The 5S methodology, is going to be used on the validate phase which comply with all the requirements that is needed on this phase. The 5S is a tool used on lean manufacturing to organize, clean, and control the productivity of the service and to help to keep a system operating at the highest standard. Sort is the first step on the 5S tool which on this research is to removed or rejected any request submitted erroneous and rejected possible classification duplicates. The Set in Order is the step where the checklist previously develop take place which help organize all the data for the requestor to submit a successful request.

Shine is the next step on the list which is to maintain a low amount of turnback that on the classifier side is to submit all the request a signed process with success. The Standardize is basically to make the previously step a routine which can be execute on the daily basis and have record of all classification. The final step is Sustain which consist on continuing with the cycle on a daily routine but this step is being reinforce with weekly meetings and training with the latest updates with a jurisdiction change.

Conclusions

In the research that was conducted on the *Reduce the Amount of "Turnback" on the Classification Center*, the problem and the solution was determined using the DMADV tools of the Lean Six Sigma methodology. Using this tool, it was possible to define the problem, measure the severity of the turnbacks, analyze the data collected, make a design plan and validate the proposal for the reduction of turnback in the classification center by using a Checklist to help and guide the Requestor to submit the Requests in an organized and error-free manner.

In the Measure process, it was determined that the largest number of requests that were rejected in the Classification process was due to the lack of information with an average of 48.41% of the turnback registered on the database, and the other 51.59% being erroneous request, technical problems, policy problems and access denied. On the other hand, using the boxplot, it was possible to determine the amount of minutes that were wasted on each request which was approximately between 10 minutes to 16 minutes. In addition, the monthly wasted time was calculated for each month and was found to be between 727.6 minutes and 1,988.0 minutes. In the analyze phase, the cause and effect was determined the turnbacks that have been registered on the database system. During the analyze phase, it was determined that the large quantity of turnbacks that enter the database is due to the lack of information, due to the Requestors do not have the adequate training to successfully submit a Request. For this reason, in the design phase a Checklist was developed, which helps the Requestor to have all the necessary information to submit a Request and recommendations to help the classifier to determine the classification of the item without any inconvenience.

Providing this Checklist to all customers who receive the item classification service will provide a simple and easy to understand guidance to reduce errors in the system by more than 48.41% because the other defects like the erroneous request will be solved with the same guide. This research reaches each goal that was presented on the objective section, the primary objective was to reduce the amount of turnback for at least 20% and during the evaluation and analysis of the research the goal was surpass because with the checklist provided to the customer is affecting more than one type of turnback.

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