

# *Optimization of PQAE Task Training Guide for Better Onboarding Process in the Department of QE at Space Company Z*

*Amanda M. Santiago Blanco  
Master in Engineering Management  
Dr. Héctor J. Cruzado  
Graduate School  
Polytechnic University of Puerto Rico*

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**Abstract** — *People tend to change jobs on average every 2.73 years. Therefore, onboarding experience is an important stage for the new hires to adapt to their new position and company. The new procurement quality assurance engineers of Space Company Z struggled to adapt with the current task training guide and more so in a remote environment. They were experiencing long lead times as it took them a lot of time to find the required documentation to perform their daily tasks. More so, many of these documents were outdated and scattered across different platforms. To reduce the lead time of performing such tasks, a DMAIC methodology was utilized, where in the implementation stage a 5S methodology was followed to organize the virtual space where the team store their documents. After the optimization of that interphase, the lead time for the top 3 most performed task was reduced by an average of 40%.*

**Key Terms** — *training, onboarding, quality assurance, 5S methodology*

## **INTRODUCTION**

The procurement quality assurance engineer (PQAE) team is part of the Quality Department of Space Company Z. This company specializes in the aerospace and defense industry, where the PQAE team is key and the first line of quality assurance when it comes to purchasing and receiving parts that will be used to develop the final product that will be deliver to the customer.

As people transitioned out of the PQAE position, the team was faced with a high workload. The new hires were unable to perform their daily tasks in a smooth and timely manner due to lack of a proper task training guide and document disorganization. Their onboarding guide was outdated, and current circumstances has them

working remotely, limiting the knowledge transfer needed from current employees when welcoming new employees.

Therefore, the main objective of this project was to reduce PQAE task performance lead time. There are a lot of technologies and virtual spaces available within Space Company Z that could've been used to help improve this process and knowledge transfer. To prioritize and minimize the length of the project, the optimization of the task training guide was focused on the top 3 performed tasks and their necessary documentation was updated within the team's current SharePoint following the DMAIC and 5S methodology.

## **LITERATURE REVIEW**

One of the issues many companies are experiencing is how quickly employees change positions, whether within the same company or externally. People tend to change jobs on average every 2.73 years or two years and nine months [1]. Also, some positions are moving towards a long-distance workspace, which presents a challenge when training new hires to do specific tasks. This sometimes limits access to necessary information, which extends the time to obtain it, and it requires much effort from coworkers to transfer that knowledge [2]. Even if the new hire has a knowledgeable background and many years of experience, some tasks are job specific, like those of the procurement quality assurance engineer (PQAE), and particular to each department and company. This requires a good onboarding process for them to adapt to their new environment and learn their respective role within the company in a timely manner. Successful onboarding can result in employee retention and better business outcome [3].

If well planned, onboarding and training can be smooth. A way to help during remote training is to shorten the session and identify the correct interface to provide such training. Although remote work makes people lose geographical proximity with their colleagues, people must find a way to work together effectively. It is essential to encourage inclusive and trusted interaction within the team so that knowledge transfer can flow effectively [4]. One out of 10 employees leave a company due to a poor onboarding experience. Loss of productivity can occur due to an increase in employee turnover. It costs 16% of a low-wage worker's annual salary to hire someone new and 20% more for a mid-level position. Therefore, onboarding matters since, during this period, new employees are provided with the necessary knowledge and training to become productive [5].

## **METHODOLOGY**

The DMAIC methodology was followed to define the problem, which was unorganized and outdated task training guides that cause higher lead time (LT) for tasks performed by the new hires. This was measured by obtaining an average of the new hires A, B and C time sheets for 4 weeks. The data collected was analyzed and the top 3 most performed tasks were determined to prioritize on the optimization of each training guide.

The number one task was VRIC review, which stands for vendor request for information control, where suppliers send information and the PQAE most review and concur that the information presented is correct. The second most performed task is PR coding, which stands for Purchase Request Coding, where the PQAE incorporates the quality requirement codes, such as special process, into the purchase order for the supplier to follow. The third most performed task is QNote reviews, which stands for Quality Notification, where a PQAE reports any nonconformance or suspect of nonconformance.

The PQAE team uses Microsoft SharePoint, as an interphase for data storage. When 5S was

implemented, all the necessary information for training new hires and current employees was sorted and set in order in SharePoint. New files for each daily task were created and placed inside the PQAE Team file. This allowed an easy process for document upgrade. Once the information was well organized in that interphase, for the shine step of this process, the old training guide was updated to reflect in a user-friendly manner these updates.

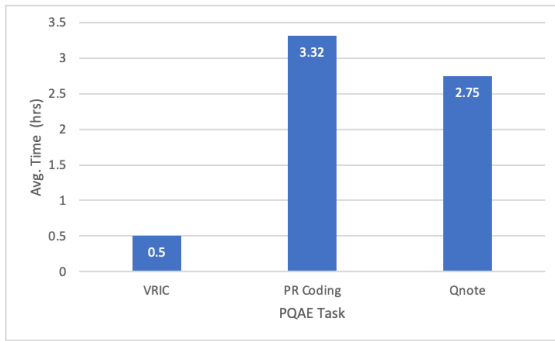
Additional shortcuts were added to the folder to link other departments' necessary tools. Documents, including the processes for the daily PQAE tasks were updated accordingly. For the VRIC review task, a point of contact was included to request access from. For PR Coding, a new flow chart was added to aid in the process of identifying which codes to include to the purchase order for each hardware. For Qnote review, a step-by-step summary guide was created, using the technical users guide as reference and screenshots from current software were included for better visualization.

To standardize and control the updates of these documents, a subject matter expert (SME) was identified in the team to control each task guide upgrade.

For the final stage of the project, data was collected by performing time studies on the same PQAE tasks identified using the updated task training guide. This was compared with the time sheet tracker of the original training guide. A survey was also developed to obtain end-user feedback on the new onboarding process for continuous improvement purposes.

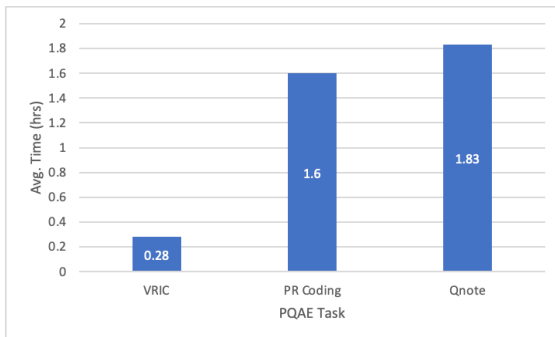
## **RESULTS**

After the data collection from the new hires time sheets, the top 3 most performed tasks were identified to be VRIC review, PR coding and Qnote review. On Figure 1, it can be seen the average time it takes a new hire to perform each task. PR coding being the most time consuming of 3.32 hours, followed by Qnote with 2.75 hours and the least VRIC review which takes 0.5 hours to complete.



**Figure 1**  
Average time it takes the new hires to complete a task.

After the PQAE team SharePoint was organized and updates to the task training guides were completed, the onboarding guide was updated to reflect them. The LT of the top 3 most performed tasks were reevaluated using the new guide. Figure 2 shows the average time it took the new hires to perform the task with the new guide. VRIC review took about 0.28 hrs, PR Coding 1.6 hrs and Qnote 1.83 hrs.



**Figure 2**  
Average time it takes the new hires to complete a task with the new guide.

When comparing the before and after the optimization of the training guides the LT that reduced more than 50% of the average time was PR Coding. The creation of a flow chart to determine the codes that a purchase order requires was easier to follow than the matrix table alone. Although VRIC review itself does not take as much time to performed compare to the other tasks, the explanation and organization of documentation and POC to get access to the system still reduce about 40% of the LT. Qnote review also was able to reduce around 40% of the LT using the step by step

training guide with screenshots, as it show visually where the employees need to input the data in the system.

## CONCLUSION

After the optimization of the task training guides and the organization of the SharePoint for the documents needed to perform the PQAE task, for the top 3 performed PQAE tasks there was an average LT reduction of 40%. As per the new hires feedback, the new guide helps them condense all the necessary data to perform their task without having to waste time searching or training to remember where they save the documentation.

The newly organized folders in SharePoint helped the employees find the needed documentation quicker, allowing them to perform their task faster. Updating the documents and establishing a point of contact for each task created a better knowledge transfer. Future new hires will now have someone to reach out to when they have concern if they are in a remote environment.

Due to a change in priorities a new interactive landing page was removed from the implementation of this project, but it is something that can be done in the future as a separate project. Nevertheless, the standardization and organization of the needed documentation to perform PQAE tasks helped the new hires perform their task efficiently and the project was completed withing the budget limits of \$40k.

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