Reducing Cycle Time of the QA Review Process

Six Sigma Green Belt Project Spring 2021

Sponsor Company: Olsson

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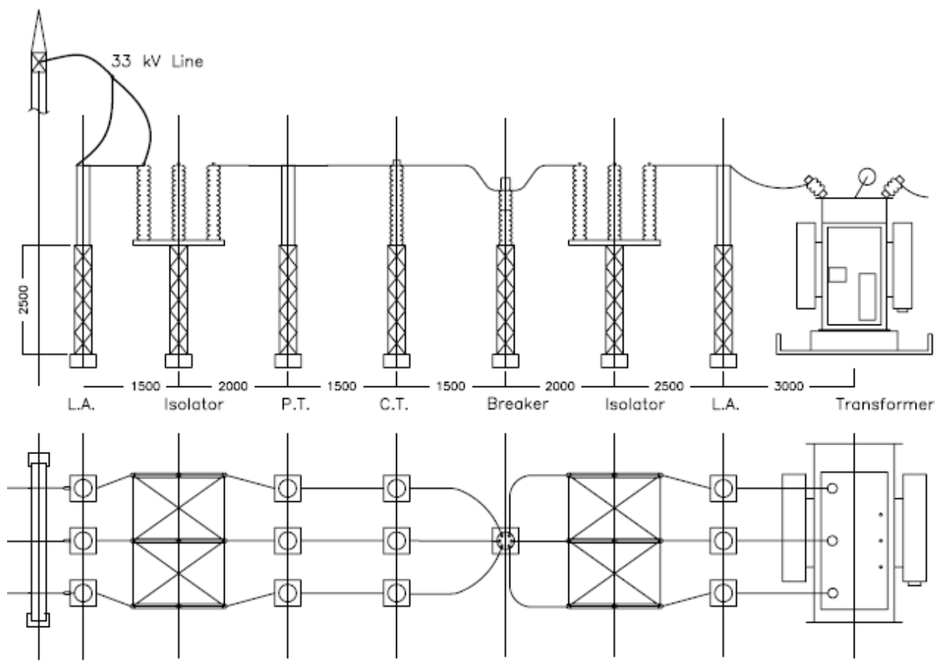
Major: Industrial Engineering Technology

Introduction

Company: The project took place at Olsson, an engineering design firm that has locations throughout the Midwest region in United States. Olsson provides engineering solutions to clients across a wide variety of disciplines, such as; civil, structural, surveying and power delivery. The QA review is an integral part of the projects as a whole, and it is essential that it is done with efficiency to maintain profitability and customer satisfaction.

Problem Statement: From March 2020 to February 2021, nearly 4,900 out of 54,000 man hours were spent on the QA review process, or 9.1% of total hour time, and 3900 of those QA hours were utilized on projects that went over budget, or 10.8%. Comparatively, approximately 1,000 hours were utilized on projects that were under budget, or 5.5%, which is the company standard.

Objective: Seek root causes and recommend countermeasures to stabilize the future QA Review Processes at an average of 5.5% of total project hours.



Methodology

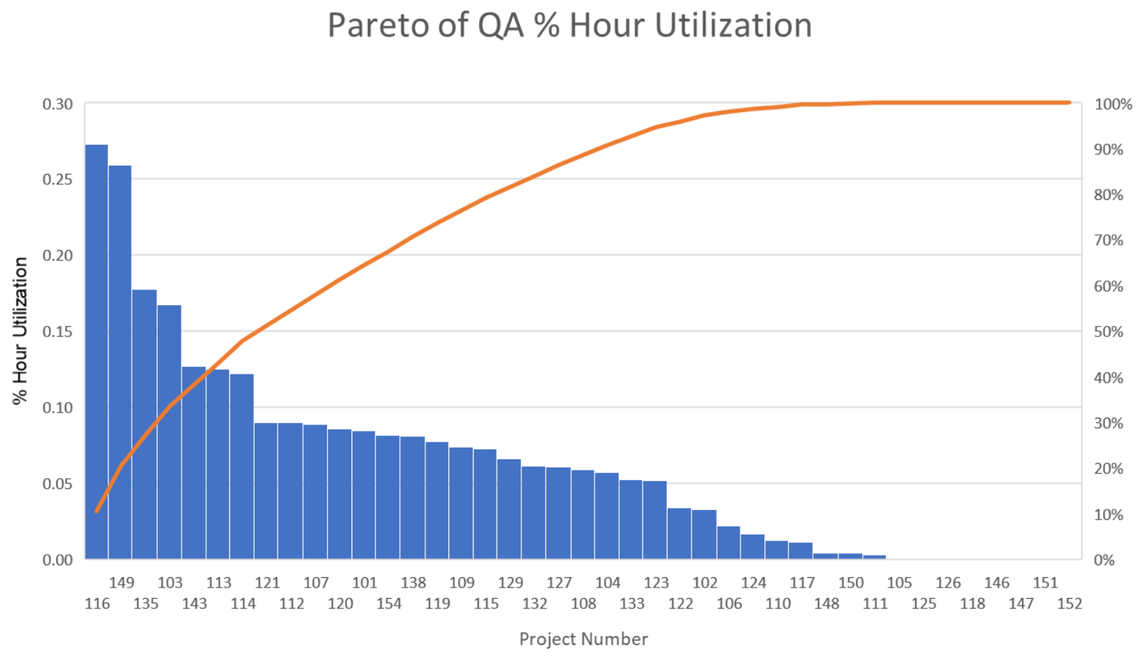
First 3 phases of the **DMAIC** model were utilized.

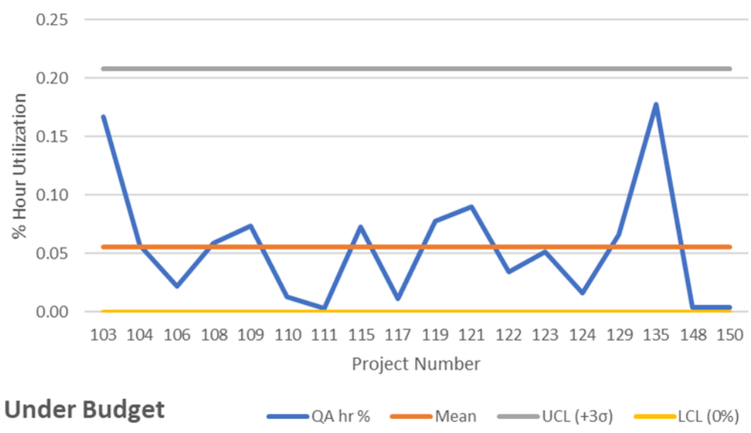
Define: The purpose of this first step was to clearly define the problem, create an objective and any financial benefits. Furthermore, understanding what the current process is and what the customer requirements are.

Measure: This was the next stepping stone, through data collection current process performance was established and any operational definitions of the process were outlined.

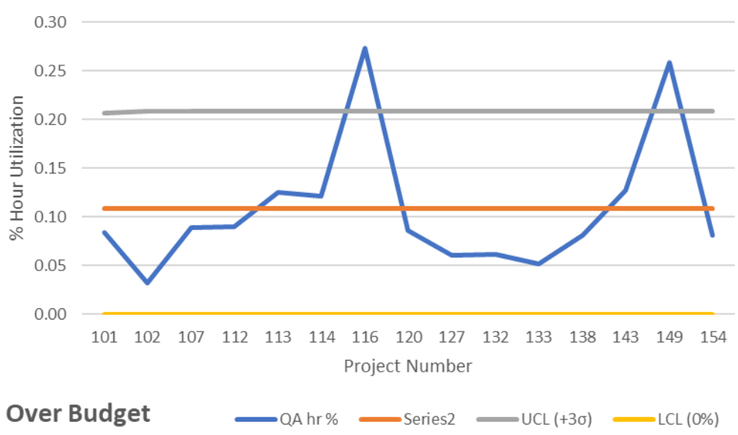
Analyze: The purpose of this step was to summarize and examine the collected data in order to identify potential root causes. Using tools such as Pareto and Control Charts and the Five-Why analysis to dig further toward a solution.

Results





Control charts showed that projects that were within budget utilized an overage of 5% of total project hours on QA review versus projects that were over budget, which utilized an average of 10% on QA reviews.



Historical data was collected existing company tools, which included 41 different projects. Each project had a number of hours charged to it, and within that was a further breakdown on how those hours were specifically utilized for each project, such as QA review. The pareto chart showed that 7 projects utilized more than 10% of total project hours on QA reviews.

Financially, the 5% of excess hours spent on QA Reviews equates to $270,810 that could have been saved in a 12 month period.

	QA Hours	% QA Hrs vs Total
OVER	3982.50	10.8%
UNDER	948.25	5.5%
EXCESS	1991.25	5.4%
	avg rate/hr	$136.00
	TOTAL	$270,810.00

Conclusions

Out of 41 projects, 7 were identified which had significantly higher QA review times than the company standard. The team members that were part of those projects were surveyed on an individual basis to reveal the root causes.

To address the root causes, a plan was proposed to the company with the goal of stabilizing future QA Review cycle times to the company standard of 5.5% of total project hours.

If the plan is successfully implemented, the company's estimated future annual savings will be $270,000, or approximately 1,990 man hours.

References

Quentin Brook (2014). Lean Six Sigma and Minitab.
OPEX Resources Ltd

Acknowledgements

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