

Accounts Payable Center WIP Reduction with Six Sigma Analysis Enhanced by Simulation

Vertical

- Manufacturing
- Pharmaceutical
- Healthcare
- Portfolio
- Logistics
- Financial**
- Government
- Business

Genre

- Case Study
- Project Review**
- White Paper
- Technology Overview

Client

Aerospace Defense Manufacturer



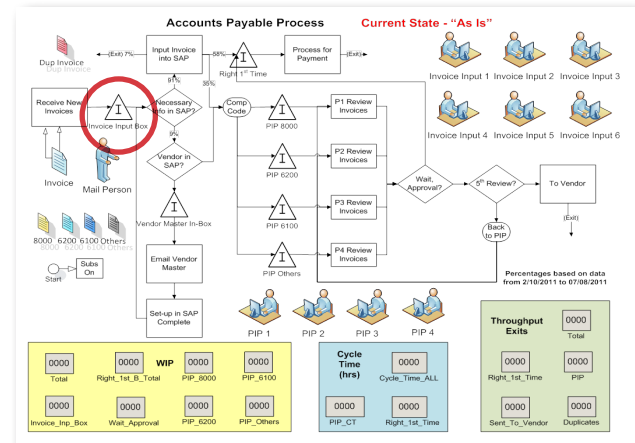
Situation

An aerospace defense manufacturer's Accounts Payable (AP) Center processes approximately 300 invoices a day. With current staffing and organization, the center was having difficulty getting all the invoices processed on the same day they came in. Eventually, these invoices began building up over time and the company had hundreds stacked up, waiting to be done. This led to vendors not being paid in a timely fashion. The staff also felt unbalanced because of the fact that some were being overworked while others underutilized.

They knew the problem was in the part of the process comprised of two kinds of invoices and staff; regular accounts that had to be inputted by the three input staffers and four Payment Invoice Processor (PIP) accounts staff. The PIP staff handles the larger, more company specific accounts. This led to some staff being overused and some underused. Many times, the input staff was working overtime while the PIP account staff was being underused. They wanted to study this part of the process in a risk free environment without putting the already stressed AP team members through a myriad of live trial and error staffing configurations, thus decided to use a simulation based predictive analytic method.

Objectives

- Analyze staffing options
- Eliminate bottlenecks
- Decrease cycle times
- Reduce daily invoice
- Work-in-Progress from hundreds to a reasonable amount

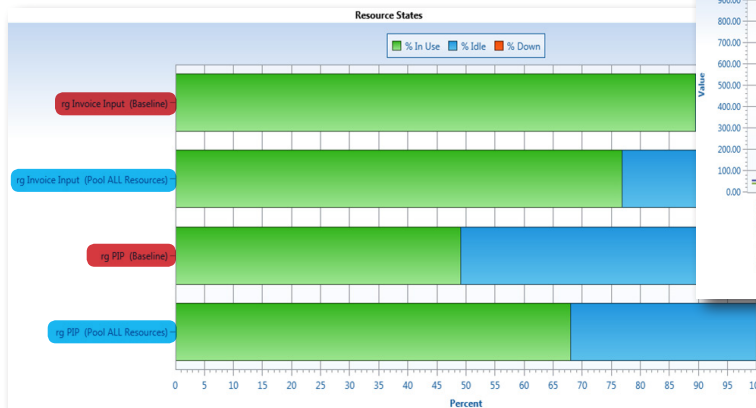


Model of current state AP process – invoice input box in red circle

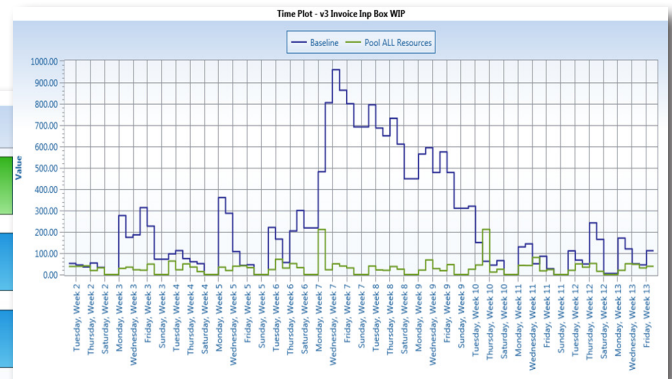
Results

Armed with the results of the five different solution scenarios, they decided to cross train the staff so that the PIP employees worked on the regular invoices also and shared the work with the input staff, effectively pooling all the resources. Implementing this helped achieve:

- 7.5% throughput increase in 12 wks (22.6k -> 24.3k)
- 83% WIP reduction at Invoice Input Box (182 -> 30)
- 7% Cycle Time decrease (137.5 hours -> 127.5 hours)
- More consistent process



Output chart showing more balanced staff utilization with future state (Pool All Resources Scenario) vs. current state (Baseline Scenario)



Output chart showing WIP at invoice input box: Green Line – Future state (Pool All Resources Scenario) vs. Blue Line – Current state (Baseline Scenario)

Solution

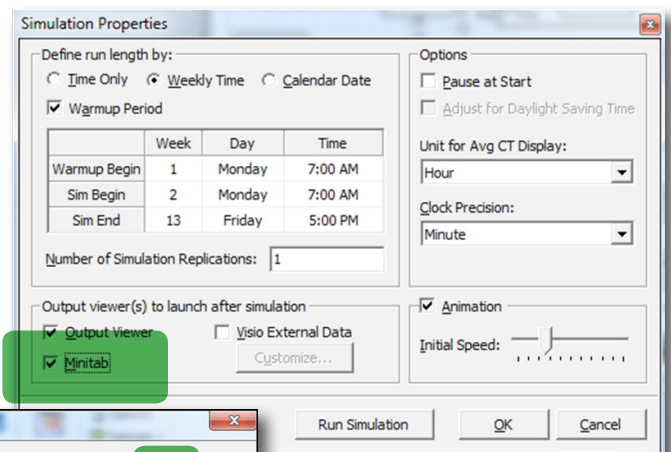
The process, being one that is highly repetitive and associated with high volumes, makes it a prime candidate for simulation. The model also allowed management to experiment with scenarios in a risk free environment without the emotional stress on the staff.

Using ProModel Corporation's Process Simulator, they built a model of the appropriate portion of the Accounts Payable process. As part of the project, automatic connectivity from Process Simulator to Minitab was used to conduct six sigma analyses to capture periodic average of a variable showing invoices remaining to be input each day.

They evaluated five potential scenarios via the resource utilization operational model during a 3 day training period:

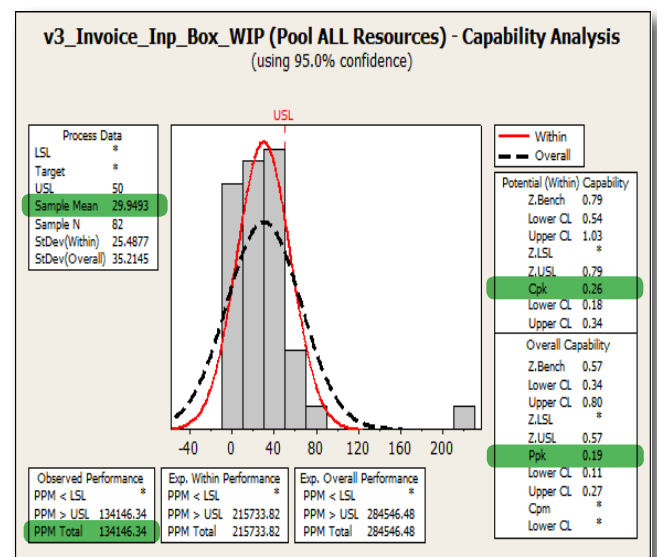
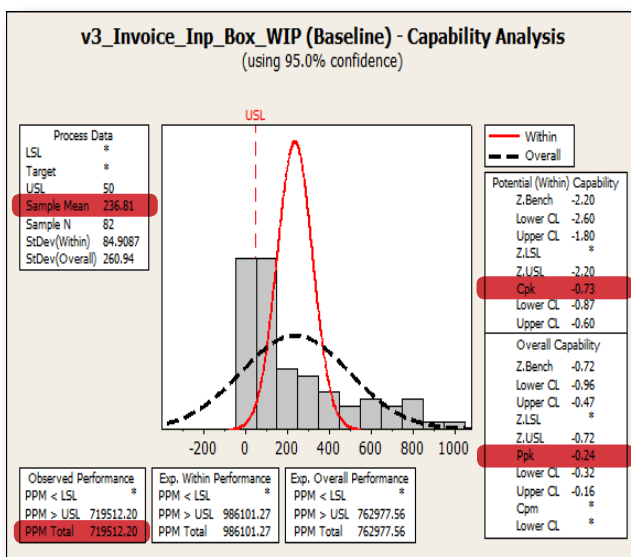
1. Hire an additional invoice input FTE
2. Transition a PIP account staff member to become a regular input staffer
3. Pool all the resources and use them wherever they are needed
4. Have the regular input people work overtime at least 2 hours a week
5. Every day at 3 p.m., if the input people still had enough work, have the PIP people help

The three day training period taught the accounts payable staff how to use the model as well as getting them immediately involved in solving the current issue. The scope of this project was small enough to successfully accomplish all of this in these three days.



Six Sigma Configuration									
	Disabled	Name	Type	Stat Collection	Periodic		LSL	USL	CI
					Time	Unit			
1	<input checked="" type="checkbox"/>	v3_Invoice_Inp_Box_WIP	Variable	Periodic Avg	1 Day			50	95
2	<input checked="" type="checkbox"/>	v3_Invoice_Inp_Box_WIP	Variable	Periodic Avg	1 Day			100	95

Six Sigma with Minitab Analysis Set-Up



Capability Analysis Comparison Baseline vs Pool ALL Resources with 50 Day USL