2024 George Cronin Awards Case Study

Missouri - Operational Improvement Through Turnaround Time Management

The collection and meaningful interpretation of data is a key concern for cutting-edge organizations. Public procurement offices are no exception. So, it is no surprise that this is sitting eighth on NASPO's list of 2025 Top Priorities for State Procurement is Analytics for Data-Driven Decision Making.[1] So how much might the procurement of data analysis methods cost procurement offices–both financially and in staff bandwidth? According to Missouri, not much, necessarily. Missouri's Division of Purchasing is leveraging a small financial investment in data tracking to modernize the state's procurement process.

THE CHALLENGE

Missouri Division of Purchasing's (Purchasing) past efforts to monitor the statuses of their procurements and improve turnaround times did not produce analysis that they needed to inform effective changes. Purchasing wanted to lower turnaround times and be able to communicate this to interested parties, like the legislature and user agencies. If they could improve these turnarounds, Purchasing knew it would be the first step towards addressing the hesitancy that state user agencies had in submitting requests for proposal through the central office.

Previously, Purchasing staff needed to sort through 40 or more pages of Excel-based bid tracking data to fully understand the status of a procurement. By the time reviews were completed, data had already changed, making the analysis unhelpful. The Purchasing office needed to implement an innovative approach that would redefine bid prioritization and expedite the bid management process. Senior leadership sought to develop a new system of tracking progress data of procurements that could identify bottlenecks and give them the information they need to plan with their teams about how to address these challenges and improve procurement timelines.

DEVELOPMENT PROCESS

To address this need, after a great deal of collaboration, Purchasing implemented two relatively low-cost tools and developed a new process for tracking the status of their procurements. The office used Smartsheet, a low-to-no code, cloud-based spreadsheet that captures bid worklog data and informs buyers of turnaround time goals. It also implemented Tableau, a data visualization software that promptly displays operational metrics through dashboard creation and internet viewing.

For Missouri Division of Purchasing's three teams and 40 employees, the annual expenditure on licenses was estimated at $5,000. The office purchased four Smartsheet creator licenses with pro support, two Tableau creator licenses, and ten Tableau viewer licenses.

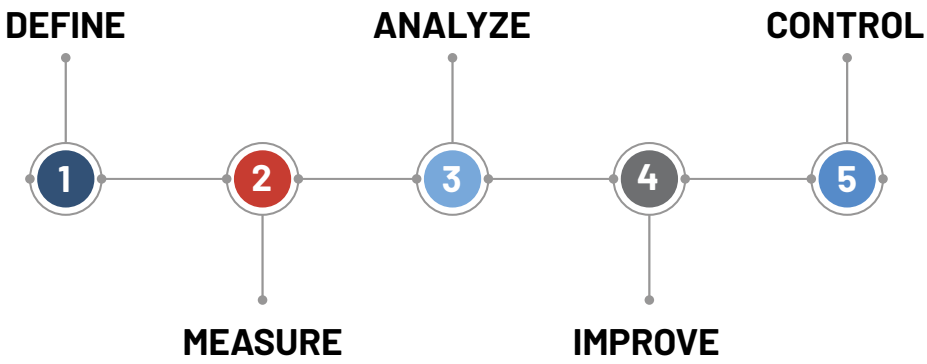
"We just didn't have the right person with the right skillset and the mind," said Stacia Dawson, Assistant Director at Office of Administration, Division of Purchasing. "That was critical, and that was where Michael came in for us."

A recent graduate from the University of Missouri's industrial engineering program, Michael Stroud, joined the office and helped the team with his software background.

[1] "2025 Top 10 Priorities for State Procurement," NASPO, accessed January 6, 2025, https://cdn.naspo.org/RI/NASPOsTopTenPriorities2025.pdf.

Missouri has a built-in advantage in implementing Tableau, which appears in many of the state's training materials, said Stroud, now a Research and Data Analyst for the State of Missouri. He said Smartsheet is less common and takes some more time to learn than Tableau, but it is similarly simple to use once fully operational. "It's worth the climb to do the work, and you get this big payoff at the end," Stroud said.

To track the status, the office developed a new process for monitoring individual bids and evaluating the entire bid management process. It involved granular turnaround time goals for each procurement phase and tracking bid timelines. The new tracking cycle consists of five steps (DMAIC):



After determining benchmarks and the tracking process, leadership also created a user guide and provided training in small team environments to staffers. Procurement officers practiced in a demo version of the new system before it went live. "We try to think through everything and have a really good plan together and not just do the, 'Here you go. Here's a tool. Have fun using it,'" Stacia Dawson, Assistant Director at the Office of Administration, Division of Purchasing, said. "I think that's what made it super successful, and I think the adoption was great. I think all the staff find it easy to use."

Additionally, division leadership and each of the buying teams planned to meet weekly to review the analysis produced by both tools. The goal is to enable buyers to self-manage their procurement outcomes. These innovations allow the division to monitor all in-progress procurements and proactively address bottlenecks. They also serve as a visual guide as the office navigates each week.

"It was definitely a collaborative approach," Dawson said. "We had a lot of a lot of great conversations."

IMPLEMENTATION AND GROWTH

With the new tools in hand, trained staff began tracking the status of procurements. For the define and measure stage, staff closely recorded and examined bid awarding, issuance, and evaluation. Previous tracking lacked step sequencing guidance and an estimated time of step completion. As a result, procurement officers defined each procurement through sequentially organized steps within each phase and assigned estimated times. They even began sharing those estimates with customers. This phase provided a clear, planned path forward.

To track performance, based on the defined estimated timelines, the new software assigned three colors to reflect the status of the procurement:

- **GREEN** for swift completion,
- **YELLOW** as a warning for turnarounds nearing a deadline, and
- **RED** for ones that exceeded the desired turnaround times.

PHASE	FLAG	ALLOTTED TIME/PHASE – FLAG COLOR START DATE			
		Cost-Based less than $500K	Cost-Based greater than $500K & QVL	Weighted Criteria less than $500K	Weighted Criteria greater than $500K
Drafting	🟢	1	1	1	1
	🟡	14	17	32	40
	🔴	**18**	**24**	**40**	**54**
Issuance	🟢	1	1	1	1
	🟡	10	17	24	32
	🔴	**15**	**21**	**30**	**42**
Evaluation/Award	🟢	1	1	1	1
	🟡	13	30	40	50
	🔴	**17**	**40**	**50**	**64**
TOTAL DAYS:		**50**	**85**	**120**	**160**

Figure 1

The office classifies each bid category based on the cost of the bid (Fig. 1). Continual review of timelines is part of the office's practice. Purchasing leadership and the team review the date assigned, such as completion date of each phase and the final award date, to understand the anticipated timeline of each procurement. Recently, the office has restructured turnaround times by reviewing the number of days bids spend in each color code.

With the new system, the analyze and improve stages were significantly hastened and more actionable than previous efforts. Now, staff and managers may quickly review dashboards to get up-to-date data before making decisions. The structure and color-coding system allows staff and managers to easily interpret data results and effectively communicate progress to all stakeholders. Overall, Tableau color coding increased staff awareness and responsiveness to bid times and buyers receive regular, digestible status updates.

Each row in the Smartsheet bid worklog displays a specific bid that is updated by the buyer at least weekly. Cell background conditional formatting within the backlog allows the office to highlight essential data to the buyer and display the color of the bid. The formatting has increased staff awareness and sensitivity to their turnaround times and provided buyers the ability to track bid progress at their convenience.

To maintain control over the innovative changes, Purchasing holds weekly meetings to discuss turnaround times at leadership and team levels. Directors and teams in these meetings review the Smartsheet bid worklog and Tableau dashboard. This allows the office to make decisions about which bids need to be prioritized, address questions, and find solutions. Directors check ongoing metrics such as the number and percentage of reds per week and average turnaround time. As the new system continues to grow, teams and leadership consistently discuss updates and any needed changes with office leaders.

"You can put all these things into play, but if you're not looking at it and you're not managing it, that's not going to get you anywhere either," Dawson said. "The weekly reviews that we do, that's a critical piece to it too."

OUTPUTS, OUTCOMES, AND TRANSFERABILITY

The integration of this new system inspired significantly faster turnaround times and more effective communication with parties involved in bids. The office even organically adopted a new slogan to reflect its shifting ethos: *Say No to Tableau Reds.*

In addition to the motivation of avoiding the red category, office leaders had a better sense of why any bids would hit that point, Dawson said. "It gives us a little panic, but it also gives us a little competitiveness too."

Operational improvement and user agency satisfaction followed. The average time to complete a bid dropped from 149 days in September 2022 to 48 days in December 2024 (Fig. 2). The data also offers the office an opportunity to "debunk" previous concerns about turnaround times, Stroud said. The data has also been used to communicate improvements and the realities of the Missouri procurement process to various stakeholders, like legislatures and customers.

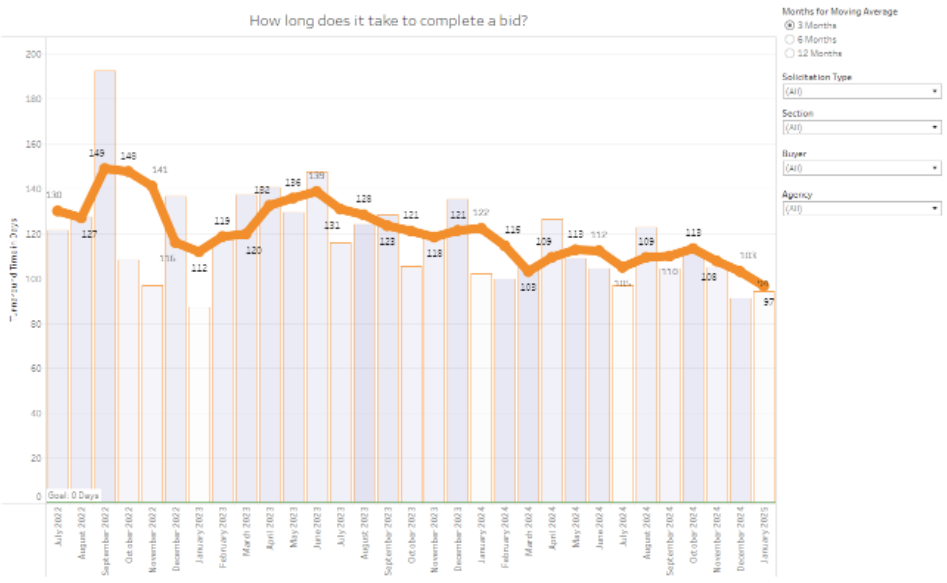


Figure 2

At a surface level, the switch seems simple: purchase a couple of inexpensive pieces of software and start using them. However, the success of the project was possible because of thorough planning, training, and continual process improvement. This reinforced Purchasing's commitment to efficient progress tracking, ensuring a speedier process for customers and a more productive internal environment.

Offices seeking to improve turnaround times and customer relations may wish to use the two software tools and refocus operations. Tableau and Smartsheet, and other similar tools, are available to any office for purchase, and procurement offices may implement versions of the DMAIC cycle tailored to their needs.

An eProcurement system is not necessary to achieve these results, but a data analyst or consultant—in-house or borrowed—can build and support the necessary software. Quick, usable, and inexpensive data will more likely convince procurement and executive leadership to implement such changes. Smartsheet-like tools can offer data collection and automation, while Tableau or Power BI-like tools can produce easy-to-read data visualization and reporting. If used effectively, the tools can power a process that hastens turnaround times, improves communications among bid parties, and inspires a more productive office culture.

Stroud recommends keeping a worklog, a key component of the new system as an effective project management tool. "I think it's definitely exceeded my expectations," Stroud said. The Missouri office stresses the need for thorough planning and making sure your team has the skillsets to build the process, implement the process, and make systematic improvements as they arise. The team's most significant piece of advice—they wished they had implemented the new tools and process much sooner.

For more about **data analytics**:

- Read Procurement Toolbox on strategic sourcing, a practice that evaluates long-term procurement needs.
- See the NASPO Content Library's "Data Analytics" section offers numerous webinars, Procurement U courses, and Pulse Blog posts.

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