

Best Value Procurement Results within the GSA

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A large government agency, seeking to become more efficient, implemented the Performance Information Procurement System (PIPS) Best Value (BV) process on various construction projects to determine if the program could increase the performance of outsourced services. The impact of this model for increasing the performance of procured projects is presented. The environment of the projects and testing of the process were unique, as they allowed concurrent testing and validation of multiple projects, similar in scope, and uniform application of key performance metrics. A case study is also used to illustrate the overall performance of the BV process. The findings in this paper show that the process resulted in approximately a 60% increase in performance with regards to customer satisfaction, project delays, and cost increases. In an industry with delays in excess of 20-50%, a model that results in an increase of performance for outsourced services is significant.

Keywords: PIPS, GSA, Best Value, Case Study, Performance Results

Introduction

The building industry has been described as inefficient and resulting in many project changes (Ibbs et al. 2007, Thomas 2010, Thomas and Napolitan 1995, and Wambeke et al. 2011). Most of these sources identified the causes of change and risk, but experienced challenges in quantifying the resultant inefficiencies. In practice, large governmental organizations are not perceived as being efficient (Krueger 1991, Riedl 2009, Fahrenthold 2014, Le Grand 1991, Culvahouse 2007). Instead, they are characterized as slow, reactive, and lacking accountability (D. Kashiwagi 2012a, Anonymous 2003, DioGuardi 1995). Another commonly used term to illustrate the hierarchical structure is bureaucratic (Trondal 2012, Sullivan et al. 2011, Howlett et al. 2011). Amid this environment, a large government organization sought a system to promote efficiency of outsourced services and increase performance, the Performance Information Procurement System (PIPS) of Best Value (BV).

Best Value (BV) concepts have been gaining worldwide attention (Van de Rijt and Santema 2012, Adeyemi et al. 2009, Kashiwagi et al. 2011, Kashiwagi et al. 2013) as a

business model and methodology to minimize risk on projects via supplier selection, pre-planning and measurement of project deviations. The BV system was originally developed at the Performance Based Studies Research Group (PBSRG) at Arizona State University (ASU) in 1994. The system has been tested on more than 1500 procurements encompassing \$5.7 billion (PBSRG 2012, D. Kashiwagi 2012a) in procured services and construction, with a 98% client satisfaction rate, and a variety of project savings and benefits **with utilization of the BV System** (PBSRG 2012). Historically, BV concepts have been utilized for the execution of construction, service and commodity contracts, with effects such as improved efficiency and quality (Sullivan 2011, Smithwick et al. 2012, D. Kashiwagi et al. 2012b). As a business model, BV has been well tested in various organizations and sectors (D. Kashiwagi 2012a, Mselle 2009, PBSRG 2012); however, the impact it can have on performance when utilized by large governmental organizations is not as well-known and would provide valuable guidance to large governmental organizations seeking to implement the process.

The questions that this paper addresses are:

- 1) Can the PIPS BV system be used in a large governmental organization?
- 2) What is the difference in performance of projects utilizing the PIPS BV system compared to those that did not?

In the following summary and analysis, these questions will be answered as well as recommendations provided.

PIPS Overview

The Performance Based Studies Research Group (PBSRG) is a group of educators and researchers at Arizona State University that have developed tools to improve the procurement, management, and delivery of projects and services. These tools have been packaged together into a process called the Performance Information Procurement System (PIPS). This PIPS process has significantly increased the performance of outsourced projects and services (Little and Kashiwagi 2012, Sullivan et al. 2012, J. Kashiwagi 2012). The process has three major phases that are outlined below:

- 1) Identification of Potential Best Value. In this phase, vendors or proposers are evaluated based on their cost, schedule, ability to identify and mitigate project specific risks, past performance information of the team, and interview of key personnel. Although similar criteria are found in other selection processes, the manner in which these criteria are collected and analyzed are significantly different.
- 2) Clarification. Unlike traditional processes that immediately award a contract after evaluations are complete, in the PIPS process, a period of time is set aside to carefully preplan and clarify the project/service. This clarification occurs between the owner/client and the potential best-valued vendor. During this period of time, the vendor proactively reviews the project to assure that they understand the

owner's/client's intent, outlines what is included in the scope, and responds to any questions or concerns that the owner/client may have.

- 3) **Contract Award and Performance Measurement.** Upon a successful clarification period, the owner/client has the option to award to the potential best value vendor. Upon a successful award, the awarded vendor is required to submit a weekly risk report that tracks all project deviations with regards to time and money. This report is used to provide an up-to-date analysis of the project on a weekly basis and information to key stakeholders.

The PIPS process has been applied, tested, and refined for over 20 years on over 1,500 projects and services. The program has documented higher success with regards to customer satisfaction, minimizing cost increases, and minimizing schedule delays (Kashiwagi 2010, D. Kashiwagi et al. 2013b, Riley et al. 2012).

GSA Overview

The General Services Administration (GSA) is an agency of the Federal Government that is responsible for managing and preserving \$500 Billion in Federal assets. The GSA owns, operates, constructs, and leases 9,600 buildings, which range from courthouses, laboratories, post offices, land ports of entry, and data processing centers. The GSA employs over 12,000 employees and has an annual operating budget of \$26 billion (GSA 2012 and 2011). The GSA was experiencing stagnant performance in their source selections regarding procedures and project delivery and was seeking solutions.

Research Partnership

In 2009, the GSA Heartland Region (Region 6) partnered with ASU to assist the Region in increasing performance and efficiency (Kashiwagi 2011b, Meyer et al. 2010). The goal of the research program was to implement the PIPS best-value system to identify if the process could work within the constraints of the GSA and the Federal Government (GSA 2005). The process would have to meet all Federal rules and regulations, would have to be fair and open for all interested vendors, and would have to increase the performance and accountability (on time, on budget, high quality) of construction services.

The process was implemented on several projects, but the largest pilot project was on the Zorinsky Federal Courthouse in Omaha, Nebraska. This project was very sensitive since the courthouse had received negative publicity due to a renovation that was started in 2003. The original renovation was scheduled to cost \$41M, but resulted in \$18M in cost increases and was completed 4 years behind schedule. Politicians publically criticized the delays and increased costs and used it as an example of the GSA's inability to competently build a building (Glissman 2010). Therefore, the subsequent project would receive increased attention and scrutiny due to poor past performance.

Case Study

After completion of the 2003 renovation, the building tenant became concerned with pedestrian safety. During the winter, melting ice would fall from the building's renovated windowsills and sunshades onto the pedestrian sidewalks. The GSA determined that they would need to install a canopy system around the building to keep the falling ice from injuring pedestrians. The project received approval in April 2010 to be procured, but would have to be designed and installed by December 2010. The total budget was \$2.8M.

Due to the highly political environment, the GSA determined that they would use the PIPS Best Value process to select the highest performing contractor and designer to design and install the new canopy system. The procurement process was completed in approximately five weeks. Three design firms and two construction firms competed for the project. In both procurements, the highest evaluated proposal was selected for award. The awarded contractor had the most competitive cost and was approximately 15% below the budget.

As part of the PIPS process, the contractor was required to submit weekly risk reports that documented any changes in time or cost. The final report indicated that there were no (0%) contractor cost increases and only four changes due to scope changes and unforeseen conditions. These changes totaled 1.2% of the projects original awarded cost. At the completion of this project, the GSA Tenant rated the Contractor a 9.0 out of 10 and the GSA Project Manager provided the contractor with a 9.9 out of 10 in terms of customer satisfaction.

Overall Results

The GSA implemented the PIPS Best Value process on 10 construction projects from 2009-2011. Using the Weekly Risk Reports (the third phase of the PIPS process), the GSA was able to document the performance of the projects. The GSA was also able to compare the results to 11 similar Non-PIPS construction projects. These projects were procured under the traditional GSA process, but were required to document their performance using the Weekly Risk Reports. The comparison of PIPS and Non-PIPS projects was distinctive because the projects were similar in size, cost, and scope.

Table 1 provides an overview of the PIPS and Non-PIPS projects. The PIPS program encourages open competition: the average number of proposals received per project increased by 161% when compared to the traditional process. The awarded costs of the PIPS projects were 6% below the budget, which reduced fears that the process would be more expensive (even with initial cost). The total time to procure a best value project was 10 days longer compared to the GSA's traditional process.

Table 1

Overview of the Pilot PIPS Projects

NO	PROJECT OVERVIEW	NON-PIPS	PIPS
1	Number of Projects	11	10
2	Number of Proposals Received Per Project	1.5	3.8
3	Total Estimated Budget	\$ 14,894,840	\$ 10,630,102
4	Total Awarded Cost	\$ 14,244,385	\$ 9,994,887
5	Percent Awarded Below Budget	4.4%	6.0%
6	Average Procurement Time (Advertise-Award)	68 days	78 days

Table 2 illustrates the performance of the pilot projects. PIPS projects had an overall change order rate of 5%, compared to 12% of the non-PIPS process (the overall change order rate includes all owner scope changes, contractor changes, and unforeseen conditions). This is a 63% decrease in overall cost change orders. Similarly, overall schedule delays were decreased by 62% when compared to the traditional process. The GSA Project Managers also evaluated the performance and their satisfaction with the awarded contractors. On average, the GSA Project Managers were 61% more satisfied with the contractors on the PIPS projects versus the Non-PIPS projects.

Table 2

Performance of the Pilot PIPS Projects

NO	PROJECT PERFORMANCE	NON-PIPS	PIPS
1	Total Awarded Cost	\$ 14,244,385	\$ 9,994,887
2	Total Amount of Cost Increases	\$ 1,718,492	\$ 616,606
3	Total Percent of Cost Increases	12%	6%
4	Total Awarded Duration	1,822	1,373
5	Total Amount of Schedule Delays	1,606	761
6	Total Percent of Schedule Delays	88%	55%
7	GSA Satisfaction Rating of Contractor	7.1	9.5

Conclusion

Returning to the original questions, the PIPS BV system can be used in a large government organization. The outlined system tracked 10 PIPS projects and 11 Non-PIPS projects to build a comparison. PIPS BV is in compliance with governmental regulations and does not negatively impact competition.

The process documented that Best Value does not cost more money since the awarded cost of the pilot projects were 6% below the estimated budget. The process did require 10 additional days to procure and award a project due to a detailed project clarification and preplanning phase that are part of the PIPS Best Value process. However, the additional time that was used during procurement resulted in substantial performance

increases. The pilot projects showed a 62% decrease in schedule delays (approximately 1,000 days savings) and a 63% decrease in cost change orders (approximately \$1.3M). The customer satisfaction ratings also increased by 61% compared to the traditional process.

In 2011, the GSA took over the best-value program after determining that they had received adequate education and training.

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