RESEARCH BRIEF

The Value of eProcurement/ERP Solutions. Case Studies

Introduction

The impact of the 2008-09 recession on state revenues continues to linger through the ongoing economic recovery. While states have been showing moderate improvement in fiscal conditions, progress remains sluggish. These fiscal challenges are likely a result of projected increased spending in healthcare, education and limited gains in revenue collections[1]. State procurement offices may continue to face budget constraints. They will be hard-pressed to find effective strategies to manage spend and better understand and control the cost of government activities. Implementing robust eProcurement solutions that have proven returns on investment by reducing costs and improving processes, has been a key element of state procurement reform initiatives implemented over the past decade.

This National Association of State Procurement Officials (NASPO) paper recognizes the prevalence of eProcurement systems and the clear return on investment from automating state procurement. According to the 2015 NASPO Survey of State Procurement Practices[2], there has been an 11 percent increase in the number of states with active eProcurement systems compared to 2014 which speaks to the continuing growth in the use of eProcurement systems nationwide.

[1] National Association of State Budget Officers. (2016). *State and Local Fiscal Facts: 2016*. http://www.nasbo.org/sites/default/files/pdf/State%20and%20Local%20Fiscal%20Facts.pdf

[2] *NASPO Survey of State Procurement Practices*. (2015). Survey Summary Report available at: http://survey.naspo.org/surveytool/Documents/Final_2015_SurveySummaryReport_updates_6-8-16.pdf

NASPO

This paper highlights best practices and key elements of existing eProcurement solutions, as well as benefits and challenges, in order to guide the decision-making process for choosing an appropriate solution for your state central procurement office. These eProcurement solutions generate substantial savings and create efficiencies for the state central procurement office and user agencies as well; they facilitate the collection of comprehensive spend data and increase transparency. Additionally, they increase competition, provide easily-accessible and efficient ways to participate in contracting opportunities to all suppliers.

The audience for this paper is NASPO membership, public procurement managers and decision makers, chief information officers, any procurement professionals directly affected by Enterprise Resource Planning (ERP) software and eProcurement implementations, and other interested parties.

Definitions

Many state procurement offices are already using or looking into implementing integrated electronic procurement solutions to procure goods and services efficiently. Some organizations, including state and local governments, use traditional ERP systems to integrate their activities across their organizational structure.

The Business Dictionary[3] defines ERP systems as "accounting oriented, relational database based, multi-module but integrated, software systems for identifying and planning the resource needs of an enterprise."

The National Institute of Government Purchasing (NIGP) *Dictionary of Terms*, referenced in NASPO's *State and Local Government Procurement: A Practical Guide*[4], notes that an ERP system "may include finance, accounting, human resources, purchasing, inventory control and other activities" and deploying it is "generally an enterprise-wide process, involving analysis, replacement of legacy systems and the development of new work processes and procedures."

[3] Business Dictionary. http://www.businessdictionary.com/definition/enterprise-resource-planning-ERP.html

[4] NASPO State and Local Government Procurement: A Practical Guide. (2015). Lexington, KY: NASPO

The term *Electronic Procurement (eProcurement)*, according to the definition from the *NIGP Dictionary of Terms*[5], means "conducting all or some of the procurement function over the Internet; it implies that point, click, buy, and ship Internet technology is replacing paper-based procurement and supply management business processes."

How do ERP and eProcurement Systems Address Procurement Principles?

One reason why state and local governments are implementing ERP and eProcurement systems more widely is due to the systems' inherent support of common principles of public procurement. Some of these principles are noted below.

One reason why state and local governments are implementing ERP and eProcurement systems more widely is due to the systems' inherent support of common principles of public procurement.

- *Increasing Transparency*
  Technology-based information systems maximize transparency. ERP and eProcurement systems can significantly increase transparency by providing all interested parties, including bidders and the general public easy access to information in electronic format about the procurement process including current, future, and past procurement information. These systems can also provide real-time visibility into spending patterns.
- *Achieving Value and Promoting Competition*
  The use of ERP and eProcurement systems can enhance competition by making the process more open and accessible to any interested party with an Internet connection versus public advertisement through local newspapers. Public contracting opportunities are more cost-effective and are disseminated widely which results in increased competition and competitively-priced contracts. ERP and eProcurement systems can be used to consolidate the procurement process into one portal, rather than having disparate procedures possibly spread across multiple teams or multiple policy manuals.
- *Expanding the Supplier Base*
  The public procurement principles of open, fair, and equal access to business opportunities are greatly enhanced by ERP and eProcurement systems. Vendors are finding it easy to participate in the bidding process, as these systems generally perform much like other commonly-used online website systems. More businesses have the potential to do business with the state, including small or historically disadvantaged businesses.

[5] National Institute of Governmental Purchasing (NIGP) Online Dictionary of Procurement Terms. (2015) http://www.nigp.org/general-content-list/nigp-online-dictionary-of-procurement-terms

- *Maintaining Financial Controls and Measuring Performance*
  The use of ERP and eProcurement systems creates an electronic repository for all procurement related data – financial or otherwise (for example, data on procurement processing time). Gathering data in a standardized method and generating reports (available in many ERP and eProcurement systems) are powerful tools for any state or local central procurement office. These tools allow the office to review its procurement expenditures and make strategic decisions based on the spend analysis data. Additionally, they facilitate the review of internal practices and outcomes, and identify how to improve service delivery.

- *Promoting Efficiency in Workflow and Approval Authority*
  Many ERP and eProcurement systems include workflow processes that move procurement documents and actions from one person to another, as configured by the system user. This electronic flow is more efficient than the paper-based process that requires those involved to be physically-present in the office. Electronic procedures allow for instantaneous movement of information and one can complete his or her role from any connected terminal. Additionally, governments are increasingly able to customize which steps are included in their systems, from requirements generation, to sourcing, to purchase, to payment, and beyond.

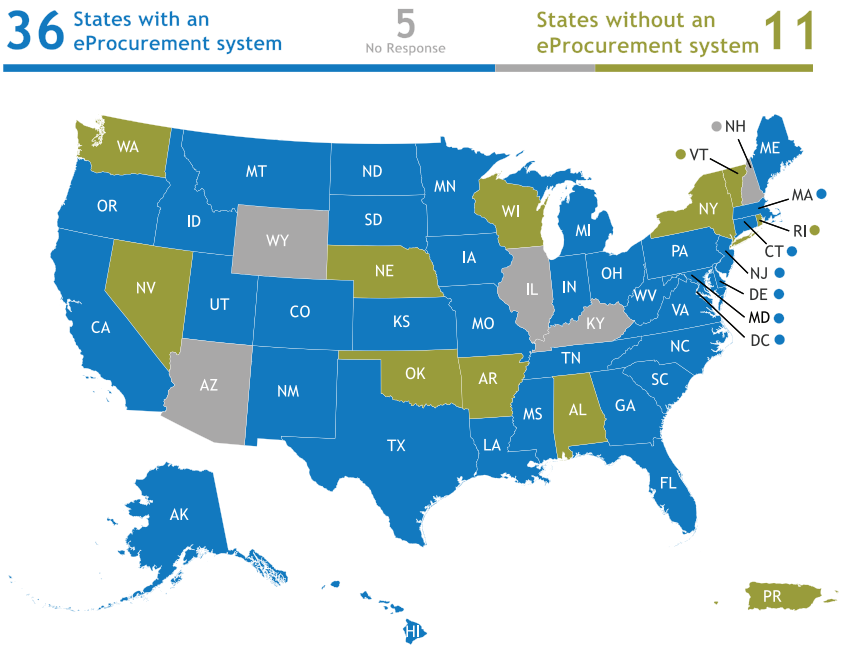
Statistics - NASPO 2015 Survey of State Procurement Practices

According to NASPO's most recent data collection of best practices, the Survey of State Procurement Practices[6] of the 47 responding states, 36 states use an eProcurement system. See Figure 1 below. Of those jurisdictions that have an eProcurement system, 22 are integrated into the state financial system.

The vast majority of states use state appropriated funding for their eProcurement systems. The fee-based funding approach has been used successfully by many states. User/agency fees are used to fund eProcurement systems in eight states and vendor fees are used in nine. Other states fund their system through a combination of state appropriation and either vendor fees or fees to user agencies, contract rebates, or both agency and vendor administrative fees.

[6] *NASPO Survey of State Procurement Practices*. (2015). Survey Summary Report available at: http://survey.naspo.org/surveytool/Documents/Final_2015_SurveySummaryReport_updates_6-8-16.pdf

Figure 1.



eProcurement systems' functionality varies among the states and are dependent on the solution used. Most of them have the ability to receive bids and proposals, provide requisitions/purchase orders, solicitation development, and contract award. Of the responding jurisdictions with eProcurement systems, all but three provide vendor registration and 32 can distribute solicitations through the eProcurement system.

Seventeen eProcurement systems utilize digital signatures. Electronic procurement solutions in 17 states provide for using agencies to share documents during solicitation development. In 13 states the electronic system allows using agencies to pool or aggregate their bid quantities together.

State eProcurement Solutions – Seven Case Studies

In this paper, we examine eProcurement solutions currently in use in seven state central procurement offices and discuss some key issues such as efficiencies, functionality, increased transparency of spend and procurement processes. We are also showcasing implementation successes and opportunities for each state.

CALIFORNIA

The Financial Information System for California (FI$Cal) is a multi-faceted technology project for the state of California in the areas of budgeting, accounting, procurement, and cash management through a partnership between the Department of Finance, the State Controller's Office, the State Treasurer's Office and the Department of General Services.

The procurement module of the system – known as Cal eProcure is the new online portal designed to improve the experience of businesses selling products and services to the state of California. This new system replaces BidSync, giving businesses access to bidding and contracting resources in one location.[7]

California has successfully migrated to using the new statewide ERP system for posting solicitations and to register statewide Procurement and contract purchases.

Funding

This is a statewide modernization effort and has been paid for by bond and special statewide funding.

Functionality

The ERP system for California has the ability to process transactions from requisition to vendor payment, including electronic invoicing and accepting electronic bid responses. Additionally, the eProcurement module is part of the statewide ERP financial system.

With the new ERP system, California now has electronic workflow approvals which also allows for the electronic submission of requests/approvals within the system across all Departments within the State of California Government. The new system also eliminated a large number of manual forms that were required to be filled out, printed, and saved in file cabinets.

Efficiencies gained, increased transparency, value generated

California has only been using the new eProcurement system for six months and system has not been fully implemented, but there is significant achievement in terms of efficiencies and transparency. The eProcurement system has increased procurement process and spend transparency by allowing the State of California to view data in real time. Previously, California gathered self-reported data from departments. The Procurement Division can view purchase orders as soon as they are ready to be sent to vendors. Additionally, the quality of the data shared with the public has improved significantly by eliminating manual re-keying of purchases and contracts.

Implementation is in progress for all state agencies and departments included in this project. It is estimated that by implementing this system California would save $400 million dollars from reduced sourcing costs and reduced procurement cycle times.

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[7] Department of General Services. *Financial Information System for California.* https://www.dgs.ca.gov/dgs/dgsfiscal.aspx

Obstacles to implementation and lessons learned

Training – California purchased a Commercial off-the-shelf (COTS) application which comes with standard training modules. Despite an attempt to reengineer many of California's current procurement business processes, gaps in California's need vs. system functionality remained. Consequently, California had to customize the application to meet the state's complex legislative requirements for bidding and contracting. Making changes to the application functionality has made using the prepackaged training modules a challenge.

California's implementation is currently in progress. The Change Management Group that was put in place oversees the statewide phased rollout and implementation. When taking a phased approach to rolling out functionality it is important to start with oversight functionality. The tendency is to want to get end-users using the system and functionality right away to show progress and adoption. A better approach may be to ensure oversight activities with unique requirements and customizations are properly accounted for and addressed as early as possible. Implementing in a piecemeal fashion to allow for early adoption of functionality that does not require customizations will increase the likelihood of schedule slippage and increase in cost due to rework. It is best to lay out a strong foundation by getting all customized oversight functionality in place first.

DELAWARE

The State of Delaware's central procurement office, Government Support Services (GSS) entered into a contract for the provision of an eProcurement Software-as-a-Service (SaaS) solution for frequently used goods and materiel. The motivating factors which led to a solicitation included seeking to improve operational efficiencies, (i.e., better shopping and contract audit) as well as further enhancements to transparency and competition.

Funding

The Delaware eProcurement solution is paid for by budget appropriation and looks to replace part or all of the state's current public-facing portal.

Functionality

The solution envisioned streamlined procurement shopping, comparison and order processing, better vendor registration/ outreach, a contract repository and sourcing functionality.

After signing a contract in August 2014, the State of Delaware eMarketplace went live for on-line shopping and procurement as of September 2015. The next phases of the project include vendor registration, contract repository and sourcing functionality. System users, depending on the vendor, can use P-cards or be invoiced later. While ERP integration is still a consideration, it is not part of the current rollout.

Since the project's inception, requisition cycle time decreased by 40 percent and invoice cycle time decreased by 45 percent, while spend through the system increased to almost $2 billion/year in purchase orders.

Efficiencies gained, increased transparency, value generated

As the central contract administrator and the executive sponsor, GSS could focus efforts on contracts which are mandatory use by all executive agencies and high use, low dollar product contracts were the first implemented, such as MRO, cleaning and laboratory supplies.

Pre-implementation decisions were streamlined, contracts selected for implementation were grouped for consistency, and agencies retain autonomy to create workflow specific to their needs.

To date, despite generally positive reviews, user adoption continues to be low and sales put through the portal are less than five percent of the implemented central contracts. It has not yet generated the efficiencies hoped, and this has led to secondary efforts to identify divisions that have not used or been using the system, and requires GSS to further promote system use.

Obstacles to implementation and lessons learned

SaaS fees are front loaded, which impacts achievable financial efficiencies. The state bought more licenses than the vendor would normally implement through an initial phase, which demonstrated a need for additional SOW vetting prior to future contract execution(s).

Initial implementation of the Delaware solution has taken longer than expected, which now has the state considering a longer contractual horizon for other SaaS projects; this project has a three-year initial term and has two optional one-year extensions.

FLORIDA

The MyFloridaMarketPlace (MFMP) system was deployed statewide in 2003, as a centralized procurement solution, streamlining interactions between vendors and state government entities. Since the project's inception, requisition cycle time decreased by 40 percent and invoice cycle time decreased by 45 percent, while spend through the system increased to almost $2 billion/year in purchase orders.

In 2012, analysis showed not all agencies were fully utilizing MyFloridaMarketPlace and realizing the benefits and efficiency gains that it provides. As a result, an enterprise initiative was launched to increase overall MFMP utilization. The MFMP team established five metrics recorded on a monthly scorecard to analyze MFMP utilization: (1) Purchase Orders/Contracts (2) Invoicing (3) Catalogs (4) Receiving (5) eQuote. Each metric identified specific utilization targets using a red/yellow/green scale to summarize usage for each agency. The scorecard was distributed monthly to key stakeholders and discussed monthly by the Governor and agency heads. The MFMP team recognized some agencies would need additional focused support to achieve full utilization. In January 2013, the MFMP team created a one-year support plan outlining a phased approach focused

on the 15 agencies with the largest gaps in utilization. The remaining MFMP agencies continued to receive support through operational training and communication activities. As a result, the average utilization significantly increased for all five metrics, meeting the target utilization percentages for all five metrics by November 2014.

Funding

The acquisition, development, implementation and operations of the MyFloridaMarketPlace system is funded through a simple transaction fee. The transaction fee is paid by vendors on payment received from State of Florida agencies and entities leveraging state term contracts and alternative contract sources prices (e.g. local government, educational institutions, etc. In November 2015, the fee was reduced from 1% to .7% on all applicable payments.

The MFMP team reports quarterly to DMS leadership and Florida legislators on the programs utilization and annually for return on investment. As of this fiscal year 2015-16 quarter 3, average agencies utilization for purchase orders and contracts was at 97% and invoicing utilization was at 89% resulting in $20,952,745 total savings for the state.

Functionality

MFMP provides a completely paperless source-to-pay solution for both vendors and agency customers. Four applications were deployed to support MFMP, the Vendor Information Portal, MFMP Buyer, MFMP Sourcing and MFMP Analysis, offering key system features include online certification of minority business enterprise, online catalog shopping, online quoting, commodity receiving, and enterprise reporting.

- **The Vendor Information Portal** is an application that provides vendors with the ability to self-register and connect active vendors to state agencies. Florida's vendor registrations increased by more than 400%, since the project inception. There is no fee for vendors to register with MFMP. During the registration process, vendors map their account to United Nation Standard Products and Services Codes (UNSPSC), select desired Certified Minority Business Enterprise codes and establish multiple locations to define their business. After registering, vendors have access to online solicitation opportunities, and the ability to receive electronic purchase orders and provide paperless invoices.

- **MFMP Sourcing** is the electronic solicitation application which allows for the creation of informal and competitive solicitations, and distributes notifications to registered vendors by UNSPSC commodity code match. Florida uses standardized templates for electronic solicitations, which incorporate a sense of governance and standardization. Agencies have the ability to copy previously created solicitations to reducing manual data entry and vendors are required to respond online.

- **MFMP Buyer** is the procure-to-pay application which provides agencies with access to over 60 catalog purchasing options and prevents rouge spending, through the use of interagency approval flows. MFMP Buyer also provides a complete audit trail, from procurement to payment, which improves management controls and uses an automated 2 and 3-way matching, that ties invoices to purchase orders and receipts, allowing for fewer mistakes and faster payment processing. This captures 94 percent of spend under management.
- **MFMP Analysis** provides agencies with access to over 35 standard reports and allows for agencies to create fully customizable reports, from an easy to use dashboard. This provides complete visibility into Florida's purchasing power.

Another great feature is the real-time interface with Florida's financial system, which improves budgetary controls. One key differentiator that set Florida apart is the Vendor Performance Tracking (VPT) component which allows agency customers to communicate vendor performance on a transaction level. Vendor scores are calculated using a five-year average. VPT provides useful vendor performance history to facilitate informed decision making when negotiating agreements and selecting vendors, while providing constructive feedback to vendors to use for future improvement of services/goods.

Efficiencies gained, increased transparency, value generated

Before MFMP, purchasing and paying meant multiple phone calls and faxes between vendors and customers. Buyers combed through 840 separate product catalogs that featured more than 70,000 items, which were not easily searchable. Approval of purchases within state agencies was done manually via paper being passed around an agency. Vendors were mailed purchase orders and vendors mailed back invoices. Invoices were manually checked and approved before payments were made. The process was time-consuming, expensive and prohibited productivity.

MFMP provides a centralized source of procurement information for the Florida business community, and the ability for vendors to communicate to a broader buying audience. Additionally, MFMP is a one-stop shop for agency customers to access online catalogs and information about vendors that provide goods and services to the state. This enables quicker, more thorough responses to inquiries, provide data for analytical purposes and future negotiations and information for generating Agency-wide reporting. Today, 32 agencies, over 23,000 state users, and over 70,000 vendors utilize MFMP.

In fiscal year 2012-13, agencies processed 179,247 purchase orders and 372,904 invoices in MFMP but increased to 208,477 purchase orders and 403,611 invoices in fiscal year 2014-15. Savings calculation for purchase orders = (208,477 – 179,247) * $25 = $730,750. Savings calculation for invoices = (403,611 – 372,904) * $39 = $1,197,573. As a result of increased MFMP utilization, the state recognized a total of $1,928,323 not including administrative efficiencies gained by utilizing MFMP business functions related to catalogs, receiving or electronic quoting (eQuote).

MFMP business benefits and key metrics:

- Web-based system allowing access from any location 24-7.
- Enables interagency approval flows, preventing rogue spending.
- Real-time interface with FLAIR, the State's financial system.
- Online vendor registration and electronic Purchase Order & Invoice delivery.
- Invoices tied to Purchase Orders and Receipts utilizes automated matching, reducing errors.
- Spend managed in MFMP increases visibility, allowing the state better opportunities to leverage its purchasing power.
- Maintain 51,876 line items across 40 catalogs
- Implemented and maintain 25 punch-out catalogs
- Issued over 208,000 purchase orders to about 17,000 unique vendors totaling about $1.96 billion in spend in fiscal year 2015
- Reduced average requisition to purchase order cycle time by 40% and average invoice to check cycle time by over 45% since project inception
- Processed 9,959 electronic quick quotes
- Maintained a 93% return on investment.

Notable Successes

The top three successes to MFMP implementation and continuous improvement are detailed below.

United Nations Standard Products and Services Classification (UNSPSC) Implementation: In 2013, the MFMP team identified the need to implement a nationally-accepted and standardized commodity code system. The team selected UNSPSC to allow for improve commodity workflow approvers, enhanced spend analytics and an improved method of managing future code changes. After a year of design, development, testing, training, and implementation tasks the team converted the historic Florida specific Commodity Codes to the new UNSPSC. The standardization also provides the ability to better target vendors to receive solicitation notifications and reduce the effort for vendors to provide catalogs to the State of Florida. Shortly after the July 2014 implementation, the MFMP team developed a governance program to track requests to add new codes to the system from the existing version of UNSPSC, voting to add new codes to future versions of UNSPSC, and leading the process of upgrading the version of UNSPSC codes based on the annual update made by the UNSPSC group.

A key obstacle that other states may face when implementing this type of program will be agency customer resistance to change and education on the new commodity code set.

The MFMP commodity code implementation and governance program can be adapted by other states regardless of the implemented eProcurement software. A key obstacle that other states may face when implementing this type of program will be agency customer resistance to change and education on the new commodity code set. Other states or entities may wish to utilize the training and communications offered by the MFMP team if attempting to implement a similar program. Other states should also be aware that coordination and integration with all affected systems (examples, agency unique systems and financial systems) is key to the success of similar programs.

Agency Customer Involvement: One of the fundamental areas of success on initial deployment was early and frequent involvement with MFMP stakeholders. The MFMP team established a series of quarterly customer meetings that continue to receive high participation today. These meetings facilitate in-depth discussions on various topics, allow for decision making on important issues and provide stakeholders with status updates on key initiatives.

- Change Review Board (CRB) meetings are held quarterly and provide designated agency representatives with an opportunity to review and prioritize (by voting) submitted system enhancements to determine necessity, feasibility and suggested timelines for implementation. Meeting minutes are documented to identify enhancements requested for estimate and approved for implementation.
- Customer Round Table (CRT) meetings are held quarterly and facilitate discussions with agency customers for current issues, upcoming initiatives and ongoing operations. Meeting minutes are recorded and posted on the website, identifying key decision points and open items.
- State Purchasing Round Table (SPRT) meetings are scheduled quarterly to discuss topics affecting State Purchasing including catalogs, solicitations (in Sourcing and VBS) and other vendor related topics (such as eInvoicing). Meeting minutes are recorded and posted on the website, identifying key decision points and open items.

In addition to the regular scheduled meetings, MFMP University promotes continuous learning through comprehensive training opportunities catering to various adult learning styles for both agency and vendor customers. On average, the MFMP team provides 118 training sessions reaching over 1,900 customers each fiscal year.

Industry Standardization: Since the initial deployment in 2003, MFMP has gone through two major upgrades, several integration points with statewide systems and many customizations with the support of Accenture as a teaming partner. Additionally, Accenture continues to support the State of Florida through strategic sourcing and procurement transformation initiatives.

The deployment of MFMP enabled a centralized source for procurement activities, automating the state's order, approval, invoicing and payment approval process, making the procurement cycle more cost effective and time efficient than a traditional paper based system. Additional benefits include:

- **More Choice:** MyFloridaMarketPlace provides online access to the system's registered vendors and their products/ services. Additionally, agencies have online access to procurement vehicles such as State Term Contracts, quoting, and sourcing.
- **Reduction in paperwork:** Online requisitions, purchase orders, and quoting/sourcing capability are just a few of the state of the art tools that buyers have access to in order to complete procurement activities. Additionally, MyFloridaMarketPlace provides automated workflow and online approvals for streamlined processing.
- **Faster order processing time:** MyFloridaMarketPlace implemented automated workflow and approvals / escalations for requisition processing and invoice reconciliation (on average across the State, agency purchasing workflows include 4 approvers and invoicing workflows include 3 approvers). By automating the transactions, contracts, approvals, etc., the time from requisition to payment is drastically reduced.
- **Reduction in the cost of goods and services:** MyFloridaMarketPlace provides the State the opportunity to leverage its significant buying power by enabling Florida to act as a single entity during contract and purchasing negotiations through utilization of the globally accepted United Nations Standard Products and Services Code (UNSPSC) codes.
- **Reduced overhead and processing costs:** In addition to more accurate orders, automated workflow, and speed to fulfillment, the system helps to eliminate overhead costs on such items as on paper, printing, supplies, postage, mail and delivery services.

Obstacles to implementation and lessons learned

As with any large enterprise system, the team encountered some challenges during the deployment of MyFloridaMarketPlace. In 2003, agencies were not required to use MFMP. Many agencies continued operating shadow procurement systems resulting in duplicate date entry, limited adoption and higher operating cost. Once MFMP was mandated statewide, utilization, customer satisfaction, standardization and governance drastically improved.

MICHIGAN

From 2008-2013 the State of Michigan utilized the IPT by BidNet's solicitation system for solicitation management; and transitioned in 2013 to Periscope's BuySpeed. Michigan is currently using Periscope's BuySpeed product statewide www.buy4michigan.com. The license includes local units of government, with over 261 organizations actively publishing solicitations through the system in addition to State agencies. In 2017 the eProcurement functions will be transitioned to the CGI Advantage solution as part of the implementation of the CGI ERP system for financial management, called SIGMA.

Funding

The system is funded through administrative fees collected from the state master contracts and from purchases made off of contracts available to participants in the MiDEAL cooperative purchasing program.

Functionality

The system does not have complete functionality from self-service requisition to vendor payment, including electronic invoicing and electronic solicitations/offers. The state implemented only the solicitation and vendor management components of the solution; once SIGMA is implemented these functions will be transitioned and interfaced with the financial system (targeted for 2017).

The solution provides for automation of question and answer and clarification request processes; maintaining the records surrounding these activities with the solicitation in a single repository, saving time managing emails outside of the system.

Efficiencies gained, increased transparency, value generated

All documentation surrounding solicitations are posted on the Buy4Michigan site and are available immediately to the public unless flagged as proprietary. This has dramatically reduced the number of FOIA requests and increased the level of transparency.

With a mechanism built right into the system as part of the solicitation functionality (revision requests) for clarification and revision; requests for pricing clarification/reduction prior to award recommendation is much simpler and has become a fairly regular activity, resulting in frequent reductions in bid pricing.

Vendors have responded positively to receiving notification of solicitations via email from the system and having the ability to respond electronically at no cost. The system has increased competition through providing notification to vendors of relevant solicitations. There are no fees for use of the system by vendors.

While some eProcurement systems include the financials they must complement the purchasing functions, and the right people need to be engaged for the development and implementation of each.

Notable Successes

Fully testing functionality before go-live by users with prior system experience is critical. Developing training and quick guide materials including screen shots for typical functions and process flows which can be accessed directly from the system login screen and accessible prior to login, allows new users to get immediate help without having to wait for help desk staff which will be overwhelmed in the first wave of implementation.

Obstacles to implementation and lessons learned

Conflict in purpose between users focused on financial system transactions, rather than procurement functionality. The system's primary function is procurement and the system priorities must be appropriately focused on the purchasing functions, leaving the financial functions to the financial system. While some eProcurement systems include the financials they must complement the purchasing functions, and the right people need to be engaged for the development and implementation of each.

MONTANA

The State of Montana, State Procurement Bureau (SPB) is responsible for the procurement of all goods and services by state agencies and for all phases of contract administration. In July 2014 SPB began researching the costs and benefits of implementing a statewide eProcurement system. The primary goal of the eProcurement system was to modernize the state's procurement process and provide for greater efficiency in state purchasing, by streamlining, automating, and standardizing existing purchasing processes.

At that time SPB utilized three separate components to process procurements and manage contracts. The three components were outdated and in need of replacement, as they inhibited SPB's ability to provide efficient and effective procurement and contract management services to state agencies and interested vendors. SPB looked to procure and implement a Software as a Service (SaaS) eProcurement system that contained numerous configurable modules to address the specific requirements of the procurement cycle.

Phase 1 of the project, which is complete, was to replace the current system with an end-to-end sourcing solution to expedite procurements by automating the entire bid process, from solicitation creation to vendor distribution. In addition, the system provides a self-service vendor portal for registration, solicitation alerts, online document submittal, and performance tracking. The vendor registration component allows contracted vendors to directly input W-9s and banking information to SABHRS, the state's PeopleSoft accounting and budgeting system.

Phase 2, to be completed by June 2016, is implementation of a contract management solution. The solution will provide full contract lifecycle management functionality, including collaborative

contract authoring, a centralized contract repository for all state contracts, renewal processing, and expiration notifications. By utilizing a web-based application to manage state contracts, state agencies will have immediate access to contract authoring and monitoring tools, resulting in fast, effective deployment of state contracts.

Phase 3-1 of the project will require the expansion of the Montana eMarketCenter, an online marketplace for State Term Contracts, and integration with SABHRS. The eMarketCenter currently provides agencies with an efficient method of procuring office supplies and janitorial products no longer available through the warehouse. By expanding the eMarketCenter into a robust, comprehensive online ordering system, the State will achieve additional efficiencies. This will also provide the State with access to accurate data information instantaneously and will provide for more-effective contract performance monitoring.

Phase 3-2 is the integration with SABHRS. By integrating SABHRS with the entire eProcurement solution, state agencies will be able to track contract spend across the life of the contract, reconciliation issues will be alleviated, and data will be more widely available to state agencies. The integration with a pre-existing system proved to be very complex, and has been put on hold until 2018.

Funding

Montana's solution is funded by internal service rates to our agencies. Our Market Center will be able to report the percentage of sales through the system in June 2016.

Efficiencies gained, increased transparency, value generated

Montana has gained efficiencies in the development, evaluation and approvals of solicitations, as well as providing solicitation results and award information through our eProcurement system.

Staff time to complete the procurement processes has been greatly reduced. Efficiencies in contract management are expected when that module is implemented. Immediate access to the system for these categories results in time savings to complete these processes for all parties. Another benefit is the increased collaboration with the agencies to review and approve the solicitations.

This system has increased transparency by making solicitations, bid tabs, award information and a history of solicitations immediately available to the general public.

The vast majority of vendors have accepted the new system because of the cost savings of responding to solicitations. One major benefit is that vendors do not have to make multiple hard copies of their proposals and required documentation, such as insurance certifications, 1099 forms, and banking information. Initial access to the system was challenging for some, but after repeated opportunities to submit responses, acceptance of the system continues to grow.

There has been increased competition for contracts due to the increased number of registered vendors, as Montana combined its network of vendors with the existing network of vendors already in the system.

Notable Successes

The following greatly enabled Montana to have a successful implementation: Executive-level project sponsors; a Project Manager; a Project Charter; a core team that included dedicated internal staff and agency subject matter experts; and involvement of multiple agency stakeholders. Also critical to the success was a detailed Statement of Work, with detailed requirements that the system provider confirmed they can meet. Finally, we suggest that other states participate in an organizational "readiness assessment" to be fully aware of any cultural and operational strengths and barriers.

The State of Montana believes that this solution has provided for greater efficiency and effectiveness of the State's procurement process, and will continue to do so with the implementation of additional modules in the near future.

Obstacles to implementation and lessons learned

A major challenge was that the system does not allow duplicate registrations from vendors. This affects employees in the same company trying to register separately. Another was that the project timeline, which we agreed to, was underestimated. Integration with our state financial system was a major challenge, and that is delayed until June 2018. Again, an organizational readiness assessment is suggested to help avoid the obstacles mentioned above along with having subject matter experts on your team to help with implementation.

NORTH CAROLINA

The State of North Carolina entered into a contract for the provision of an eProcurement system solution that also included, as part of the scope, the collection of transaction fees. This public/private partnership contract was successful from the standpoint of the provisioning of the eProcurement system and revenue generation. North Carolina also faced the dilemma of identifying when the partnership reaches the point at which the contractor recovers its initial investment, at which point transition to a more traditional fee for service contract is appropriate. North Carolina's procurement technology is unchanged since 2012.

Funding

The system is self-funded through a 1.75% transaction fee charged to vendors for each purchase order processed by the system. Approximately 15% of the State's spending is processed through the system. The North Carolina central procurement office is funded from State General Appropriations. Because the transaction fee

is used to fund the eProcurement system only, the fee is only assessed against vendors who receive purchase orders through the eProcurement system itself. Further, fees are assessed only for commodities purchased through the system; services are exempt. This approach results in lower overall revenue but is a much simpler approach to transaction fee assessment than those of some other states.

Functionality

North Carolina has multiple systems that work together to provide an integrated procurement solution. Solicitations are advertised through the Integrated Purchasing System. Offers are received in physical form, delivered to the purchasing agency. Requisitions and purchase orders are processed through the NC eProcurement System that is integrated with the state's multiple financial systems; NCAS (State Agencies), and Colleague (Community Colleges).

Efficiencies gained, increased transparency, value generated

North Carolina reorganized the Division of Purchase and Contract which is the central procurement authority; the new organization groups contract managers in teams that support specific commodity categories. Additional support roles were added to the organization including business systems analysts, data analysts and marketing specialists. The new roles support new processes that have been formalized and institutionalized in a comprehensive operating handbook. The state has implemented strategic sourcing strategies that have realized over $18 million in savings when compared to previous contract methodologies. The system streamlines approval processes and enables highly detailed spend analysis.

The system provides for public access to solicitation documents and bid tabulations. It also enables the state to respond more quickly to public information requests related to procurement.

Vendors have responded positively to the system but react negatively to the 1.75% transaction fee assessed to vendors for each PO (services are exempt) issued through the system.

VIRGINIA

Virginia's eVA eProcurement program has experienced tremendous growth and continual evolution since the launch in March of 2001. There are 245 state agencies, college and universities and 770 local government entities who are now using eVA. These combined entities have produced over 650,000 purchase orders last fiscal year, for $6.2 Billion in spend. eVA was used to issue over 16,000 solicitations with $60 million supplier email notices going out to almost 100,000 vendors for new contracting opportunities with Virginia's supplier community.

Funding

The Virginia eVA eProcurement enterprise-wide program has been self-funded for over 15 years through both vendor and nominal agency fees. Vendor fees are one percent (1%) and capped at $500 per transaction for a Virginia-certified small business, with a $1,500 cap per transaction for all other (large) businesses. Agency fees are one-tenth of one percent (0.1%) and capped at $500 for a Virginia-certified small business purchase with a $1,500 cap for all other (large) businesses. Roughly 90 percent of discretionary spend within the Commonwealth of Virginia is captured in eVA.

Functionality

eVA includes functionality from self-service requisition up to vendor payment. eVA also facilitates electronic invoicing; however, this has not been used by any entities yet. Continuous efforts have been made over a decade to integrate the state-wide strategic eProcurement system with various financial system/s of the state, and there has been some success. The ability to integrate electronic solicitations has been a key part of the eVA service offering since program inception in 2001.

eVa has evolved over time from a project, to a system, and is now an enterprise-wide program. Virginia's aggressive program roadmap, evolutionary technology and implementation schedule, and a best-of-breed philosophy to meet and adapt to all business needs has allowed eVA to continually evolve over time meeting the needs of vendors, as well as buyers and others. eVA is still adding an average of 150 new vendors each week, or roughly, 7,800 new vendors per year. Vendors are required to pay fees.

Efficiencies gained, increased transparency, value generated

Virginia's eProcurement system has directly assessed efficiency through the more efficient administrative processing of purchase orders since the launch in 2001. From a system functionality perspective, Virginia has continually evolved by introducing several new modules to eVA. The additional functionalities noted below introduced new efficiencies to the business process:

- **Business-to-business (B2B) Connect** – eVA's free, online and publicly-accessible B2B message board that is used by large businesses to find subcontractors and small businesses to look for subcontracting and partnering opportunities in Virginia.
- **Contract Management** – eVA's new contract management module links procurement results to provide complete electronic versions of contracts, storage of all contract documents, spend tracking, web posting, and other typical CM capabilities.

- **Business eForms** – This provides public bodies with standardized templates to replace any paper forms and records for data-entry needs, while utilizing electronic approval process workflows unique to their own individual business unit needs.
- **Ad-hoc Data Reports** – This is eVA's updated reporting tool that leverages eVA's best-of-breed Logi Analytics' Business Intelligence (BI) application to allow all eVA Buyer and Supplier users with the ability to develop and customize business-specific BI reports.

Virginia measures the return on investment of eVA across eight areas (listed below) that are deemed as generating value for user agencies and for the Commonwealth overall.

- **Efficiency** – Electronic processing of bids, evaluations, catalog marketplace, orders, bid postings, approvals, contract management. As a single source for vendor registrations, business opportunities, and manuals/training/support. Overall reduction in the cost of doing business, paper vs. electronic processing, and the web-based/cloud/Software-as-a-Service approach. Estimated savings of $11 million dollars in savings per fiscal year in the cost of processing electronic requisitions as a standalone measure.
- **Reduced Costs-Savings** – Organizational savings include document storage, software licensing and maintenance, data storage, vendor management, centralized support team and customer care. Virginia's informal sourcing tool, Quick Quote, drives on average nine percent lower costs when utilized. The overall savings on items and services purchased using eVA is around $30 million per year.
- **Increased Competition** – eVA is the largest e-commerce marketplace for state government with 650,000 average purchase orders per fiscal year and over $6 Billion in spend. There are 5 million catalog line items that eVA users can shop from. eVA has close to 100,000 registered vendors competing for 16,000 annually issued solicitations. eVA sends out 60 million email notices of business opportunities per year.
- **Support of Socio-Economic Programs** – eVA includes a real-time connection to Virginia's Department of Small Business and Supplier Diversity to obtain and update eVA Vendor Records with all Virginia certified small and disadvantaged businesses. This certification data is available in eVA at key decision points for our statewide procurement community end users, including requisitioning, sourcing, and via our data warehouse for spend reporting and analysis.

- **Transparency** - eVA not only provides public access to current, future and past procurements but also gives open access to detailed information on the rules, regulations, processes and standards behind these procurements. Participate, monitor, analyze or study, all of this information is available to every vendor, buyer, citizen and the public through eVA. Through the Public Report and Resource Center - reports can be generated that provide access to update order data that shows the buyer, the vendor, what was bought, and the price paid. Also, Procurement Metrics provides summarized views of the same data across the state.

- **Economic Impact** – eVA brings a positive economic impact to the Commonwealth by leveling the playing field through fair, open, and transparent competition, with easy access to all Virginia public body buyers. eVA's centralized eProcurement program reduces overall software licensing costs for all public bodies, promotes the mining and spend management analysis of data to identify areas of need, it promotes competition, and it aggregates the overall value that can be achieved through strategic procurement in the truest sense of a "Commonwealth."

- **Innovation** – eVA has continuously evolved since 2001. The program maintains an aggressive bi-monthly release schedule and a robust project roadmap that promotes and incorporates continuous user feedback to drive development and adoption of new features, functions and capabilities and adapt to the changes that are required due to law changes from the legislatures, executive directions from the Governor, and the technological advances of the marketplace.

- **Flexible & Customizable** – Although an enterprise solution, eVA provides its entities a flexible and customizable approach via:

    - Custom Approval flow – enterprise-wide, entity-wide, division, department, and/or user level
    - Real-time updates (accounting, vendor status, address/user data)
    - Federated Identity Management/Single Sign-On
    - Catalog Filtering
    - Ad-hoc Reporting
    - Modules assigned at user level
    - Data-driven Notices
    - Data Sharing – optional integration & interface depending on need

Being able to meet the strategic supply needs of all Virginia government agencies as well as provide greater public transparency, responsiveness to Freedom of Information (FOIA) requests, and legislative, local government, higher education requests has been a tremendous achievement for Virginia.

Obstacles to implementation and lessons learned

Executive leadership understanding, resolve, sponsorship, and constancy of purpose must be achieved, at the highest level, and as early as possible, and Virginia accomplished this. Noted below are some lessons learned from the challenges confronted during the system implementation.

- **Leadership** Support from the state's highest leadership level was obtained in 2000 and from across the state – higher education, local government representation, the IT establishment, etc. This is essential and the business case, value proposition, and mission orders were simple, clear, and unambiguous. The need for leadership understanding, buy-in, support, and advocacy on behalf of a strategic enterprise eProcurement solution is a constant requirement and the best and most reliable assurance of obtaining success.

- **Change** Legislative changes, executive leadership initiatives, organizational requirements due to technology changes, as well as unique tactical and operational business priorities are a given. Leadership support is a critical success factor in any long-term enterprise process.

- **Resistance** Parochial interests always exist and they are vested within the narrowed siloes of individual areas of responsibility. Together with shortsighted planning, these obstacles must always be continually addressed and overcome, in favor of a strategic enterprise approach that can harness the purchasing power of all public bodies within the scope of responsibility established within the respective public body, but at the highest and broadest possible level.

- **ERPs** There is a constant market and organizational struggle with business units seeking to use an internal and optional purchasing module, residing within an ERP system. Our extensive experience has indicated that these ERP purchasing modules are tailored to the accounting system of a particular ERP and hostage to the global release schedules of a distant "provider of everything," rather than an evolutionary strategic sourcing and contracting tool, tailored to the needs of strategic, enterprise-wide procurement. Supporting and running a multi-sided platform (vendors and buyers) and growing and maturing both sides of that equation, while meeting basic needs and striving to stay on the 'leading edge' of technology. Since the beginning, Virginia has envisaged an innovative solution that meets a true "enterprise-wide" need – state, local, and higher

education, together with a service provider that is capable of integrating all of the very best component tools that the market can offer with an enterprise-wide eProcurement solution, with all ERPs available.

Return on Investment: What is the Value of an eProcurement System?

Organizations that deploy eProcurement systems can see benefits in many ways, including the reduction of costs for purchased goods, eliminating unnecessary purchases, enhancing supplier participation and performance, streamlining processes, reducing cycle times, increasing staff efficiency, reducing re-work, enhancing accuracy and availability of reporting, increasing public transparency, and reducing environmental impacts. Realization of these benefits depends as much on the processes the organization follows as on the system itself.

Some process steps to follow in order to maximize the value of eProcurement systems include:

- **Spend management:** Drive high levels of adoption through policy, training, and outreach. Visibility into the organization spend enables it to consolidate purchases, eliminate unnecessary spending, and work with suppliers to innovate. Focus on leveraging the metrics readily available in these systems to monitor compliance, monitor usage/participation, evaluate success of procurement practices, assess supplier participation including disadvantaged supplier analysis, and category spend analysis.
- **Enhancing supplier participation and performance:** Drive to increase supplier participation through policy, training and outreach. A growing supplier base translates into increased competition, may lower prices and ultimately contributes to economic development initiatives. Regularly review supplier performance information to glean opportunities to improve compliance, validate pricing, and improve the ordering and invoicing processes.
- **Streamlining processes:** Take care not to overuse workflow or business rules, potentially making the electronic process cumbersome and slow. When configured in moderation, customers can gain efficiencies through use of workflow, online bidding and evaluation, and built-in audit and policy compliance features.
- **Reduced process costs and impact to the environment:** Adopt policies and procedures encouraging use of electronic bidding, evaluation, award, and reporting. An eProcurement system can reduce the use of paper and fossil fuels required to move paper bids between bidders and buyers, therefore

having the potential to reduce costs. This can also be a great aid to public procurement officials in promoting transparency and reducing costs when responding to requests for public information.

A final source of benefit to be considered is the retirement of existing or legacy systems that the eProcurement system intends to replace. While every situation is different, the licensing model common for most eProcurement systems today is under a software-as-a-service model which can, one-time only, make funds available as buyers switch from a model with a single, large payout, in favor of a smaller monthly rental or service fee. Additionally, personnel dedicated to supporting existing systems may be able to be repurposed to mission critical projects as the ongoing support burden for software-as-a-service is typically borne by supplier personnel.

...the success of one implementation over another will depend on whether the solution chosen is the best match for the needs of the organization.

Conclusion

More and more states conduct their formal procurement process through electronic means. A number of states are now considering (or will soon be faced with) a decision of whether to transform their procurement systems, retire their legacy systems, integrate eProcurement functionalities into their state's ERP systems, or deploy a separate eProcurement system.

Every state's situation is different and there are benefits and limits to functionality for each solution; however, the success of one implementation over another will depend on whether the solution chosen is the best match for the needs of the organization.

As highlighted in some of the case studies showcased in this paper, implementation can have some classic change management challenges. There must be top-down and bottom-up support for the project. A successful implementation of an eProcurement system depends largely on the project executive leadership. As noted in NASPO's Practical Guide[8], the team must be led by procurement and technology working together as co-project leaders. It must include representatives from procurement, finance, and technology and work closely with the contract partner to ensure participation from all stakeholders and a quick decision-making process.

NASPO hopes this paper may assist procurement officials in their efforts to choose the best solution that effectively addresses their jurisdiction's needs. The paper has examined the different roles of ERP and eProcurement systems, how they support common principles of public procurement, pros and cons of each alternative, and benefits and examples of implementations from a handful of states that were able to contribute to this paper. We highlighted lessons

[8] NASPO State and Local Government Procurement: A Practical Guide. (2015). Lexington, KY

learned, practices regarding ERP integration, and functionalities of existing eProcurement systems among the states, in order to guide this decision-making process.

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