

Leveraging Enterprise Architecture for Improved IT Procurement

NASCIO IT Procurement
Modernization Series: Part I

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In partnership with TechAmerica* and with contributions from the National Association of State Procurement Officials (NASPO)**, the NASCIO IT Procurement Modernization Committee continues to focus on state IT procurement reforms and highlighting best practices at the state level. This brief is the first in a series of recommendations set forth by this collaborative.

I. Overview and Historical Background - IT Procurement and Enterprise Architecture (EA)

The escalating demand for information technology (IT) services in the states has brought with it substantial expenditures and allocation of taxpayer dollars. As stewards of tight budgets, it is imperative that state chief information officers (CIOs), state procurement officials, and other state leaders find the best values and are accountable for IT investments. State leaders should consider the benefits of aligning IT procurement and enterprise architecture not only as a way to deliver IT services more effectively, but also as a way to finding savings through streamlined investments.

This brief seeks to present an overview of how the discipline of EA can be used to improve and lower costs of state IT procurement. The degree of EA maturity in states can vary as much as the very rules that govern IT procurement, but a closer look will provide guidance on alignment of these vital functions of government. This may have been said best during testimony before the Little Hoover Commission in California, when Carol Henton of TechAmerica articulated the “need for an enterprise-wide approach to running the ‘business of California’ is more true today than ever.”¹ The same statement could be held true not only in California, but also all the other states seeking to break down existing silos.

Enterprise Architecture - When states begin to plan for business, information, and technological improvements, it is not always viewed as one entity that needs to communicate in a way that advances the state’s ultimate goals. When state governments stray from a holistic view of the state, silos are soon created and gaps in communication and alignment spread across agencies.

NASCIO describes EA as a technique for developing the necessary repository for an enterprise approach to state IT.² EA is critical because it contains the blueprint for integration of information and services at the design-level across agency boundaries. A well designed state EA can be used to easily integrate and transfer information from one agency to another. When exploring information on EA, state leaders should explore a framework such as the [NASCIO Enterprise Architecture Tool-Kit](#)^{***} as a way to design the principles and technical standards necessary to be effective at digital government and creating greater opportunities for information sharing, disciplined infrastructure design, and strategic IT procurement.

IT Procurement - State laws and regulations for procurement vary from state to state, but since the American Bar Association issued the Model Procurement Code (MPC) in 1979, there has been more harmonization. The MPC was created to increase commonality among state procurement laws and build an atmosphere of fair competition, ethical contracting methods, and predictability within each states procurement framework. Over the years, some jurisdictions have adopted unnecessarily prescriptive procurement laws that do not always provide the procedural flexibility that may be needed to effectively acquire information technology. The MPC has played an important role in standardizing the legal requirements for public procurements, though much work remains. Whatever a state's procurement rules, it is imperative that state CIOs, state procurement officials, and vendors communicate early and often to make the procurement process as effective as possible for reaching strategic goals in a cost-conscious manner.

Streamlining IT investments should start with an enterprise approach that aligns with the IT procurement process. By finding synergies that exist, both disciplines and stakeholders will benefit from the higher levels of value, strategic conformity, and more sensible IT investment decisions.

II. How Can Enterprise Architecture Streamline IT Procurement?

With mounting pressures to balance the fiscal realities in the states, both state CIOs and procurement officials are looking to find ways to save taxpayer dollars. While EA is an evolving process for states, it can create quantifiable savings and efficiencies. State CIOs have traditionally had purview of EA discipline, but it is important the benefits are conveyed to a larger audience and include all of whom plan to participate in the state IT procurement process. The numerous advantages have been conveyed in further detail in a 2005 NASCIO brief titled [IT Procurement & EA: Recognizing the Mutual Benefits](#)^{***}.

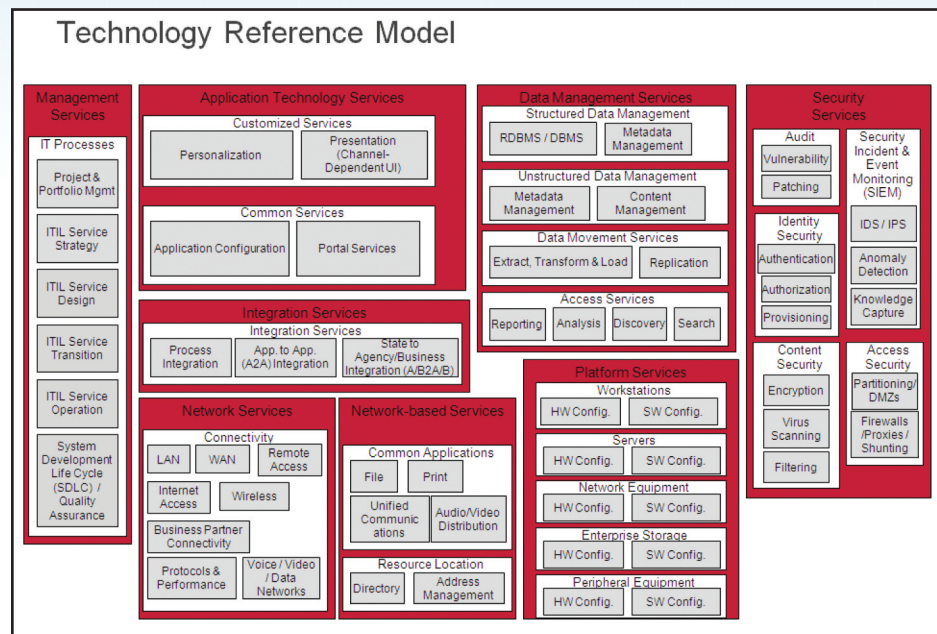
- **A Common Goal--Establishing Standards for IT:** EA provides the framework and governance for establishing standards for IT. Standards are important in providing the rules by which IT solutions and products perform and interact with each other. They are vital in ensuring integration today and migration for the future, which is essential in achieving an enterprise vision. In today's complex government environment, standards provide a basis for addressing business requirements, such as interoperability, information sharing, security, reuse and portability.

State-adopted standards may reference or require compliance with these and other standards set by third parties. EA standards are particularly helpful for addressing critical business issues, such as security, since a broad array of non-integrated, diverse products and services could leave the state vulnerable to a wide range of security and Internet threats. Where standards-setting or-

ganizations have not been active or effective, other entities, such as the federal government, the vendor community or even a consortium of interested organizations, may fill the gaps with their own standards.

Enterprise architecture standardization can provide a roadmap for vendors and begins with the adoption of a technology reference model, as illustrated in Figure 1. The enterprise infrastructure services (represented at the bottom of the pyramid in Figure 2) can be summarized as the “differences which do not make a difference.” Telephone services are the classic example of these commodity services. Dial tone sounds the same to the end user regardless of the provider provisioning the service. From the state CIO viewpoint, the same can be said of internet connectivity, storage space, security monitoring, virus protection, server virtualization, and many other basic IT services.

Figure 1- Example of a Technology Reference Model³



Many of the services IT delivers today are commodity in nature, invisible to the end user and scalable in delivery. The larger the audience which these are delivered, the more affordable the service is on an individual, per-unit basis. This is the primary focus for consolidation and where the largest portion of savings can be realized, both by the agency and to the state overall. The service is either available or it is not, making availability and up-time the key service criteria.

Standards are the most important component of governance at this layer, and an architecture review board should be established to set these standards and develop a technical reference model mapping the legacy, core, and leading technologies a state is adopting to meet the agency needs at the infrastructure layer. This can be illustrated with network devices employed by a state that is working to transition from the “as-is” to a “to-be” framework. As an example, some agencies use the old coaxial cable systems to do networking. These would be considered the legacy or the “as-is” environment. Most agencies use Ethernet systems and wireless connectivity solutions, these

are considered core systems. Gigabit Ethernet paired with wireless connectivity solutions are considered leading technologies and can be viewed as the “to-be” that gives stakeholders direction on future initiatives. This gives vendors insight into the requirements for IT products/services and may even help with product development for state needs. The relationship between the vendor community and the states should be one that is both business-oriented and collegial in nature so that industry and best practices can be shared.

- **Decreasing Costs by Reducing Diversity and Complexity through Standardization:** Promoting IT standardization reduces the number of choices and the diversity of solutions deployed, and lowers the cost of operations and maintenance, while accelerating implementation, increasing shared services across agencies, simplifying user training and consolidating purchasing power. The combined effect is to increase the efficiency of IT while decreasing its cost and complexity.

- **Simplifying IT Investments:** Through greater IT standardization, agencies can more easily purchase needed resources, and the state can be assured that those products fit within its overall vision for IT. Moreover, with better descriptions of business processes coupled with EA standardization, only the vendors who truly have capabilities to meet those standards are likely to submit proposals, which saves state IT, procurement and EA staff time and resources in evaluating the vendor responses.

- **Streamlining Negotiations and Contract Management:** The process of adopting and promoting standards can help states reduce the overall number of contracts as well as the number of contracts it has with each vendor. Fewer contracts results in less time and money expended on contract negotiations and management and their associated business processes.

- **Providing a Blueprint for Vendors:** A comprehensive EA provides a vehicle to communicate, inform and educate the vendor community on the direction of state IT activities. If a state incorporates an EA overview within Requests for Proposals (RFPs) and Requests for Information (RFIs) as well as IT contracts, then the state has provided vendors with a blueprint for the state’s future direction for IT. With vendors ‘on the same page’ as the state, the state is likely to receive greater value for its IT investments.

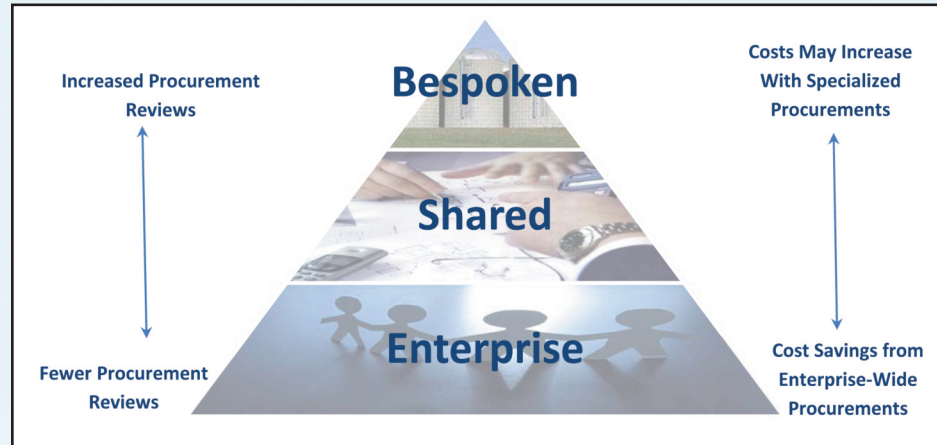
- **Serving the State’s Vision:** With EA’s explicit descriptions of business processes and characteristics, vendors will be able to provide the IT solutions and services that will fulfill the state’s vision for how IT can enable government programs and benefit the state and citizens. This can be helpful for state IT projects that support the state’s agenda and provide insight into the proper support and training that will be needed to support IT solutions.

Figure 2 illustrates the relationship between the complexities of procuring bespoke, shared, and enterprise-wide IT products and services. This figure assumes that procuring more products and services at an enterprise-wide level will save states tax-payer dollars by leveraging scale, reducing the number of procurements processed, and create standardization. Given, there will be instances when states will need to procure bespoke products and services, but this should be atypical and not the norm.

The term “bespoke” comes from England where it originally referred to custom or tailor-made clothing. In recent years, however, the term has been applied to information technology (IT), and refers to custom services or products.

<http://www.techterms.com/definition/bespoke>

Figure 2- *Bespoken, Shared, and Enterprise-Wide Procurement*



III. A Crossroads - Where State IT Procurement and Enterprise Architecture Meet

Finding the synergies for IT procurement and EA are based on a few key factors that contribute to a concerted effort. The following components of EA should be highlighted for seeking “win-win” collaborative efforts:

- **EA Guiding Principles and Value Statement** - In order to provide confidence to the varying users of EA, states should have EA statements that expressly embrace the procurement process. Otherwise, the end-user remains uninformed in regards to how these processes dovetail.
- **EA Governance Process** - The overarching factors that will make the EA governance process successful is a transparent methodology that provides the best value for the state. The drafting, review, and approval of IT standards must be a balanced process that is based on existing national and industry standards. Including IT procurement officials, who should have both an IT and procurement background, in the EA governance process will likely increase the odds of streamlined and more effective proposal evaluation and contract negotiation. Through better communications at the onset of a project, costs of deployment may be reduced through a streamlined set of technologies available to agencies. Consolidated purchasing power can lower costs, but also lead to accelerated implementation time for IT procurements.
- **EA Compliance Process** - The EA compliance process can be considered the checks and balances process for IT procurement. It ensures that agencies are complying with the EA standards that are set forth. As part of the process, some states will have pre-established dollar amounts set as the threshold to trigger a review process by the state CIO. However, some agencies may break IT procurements into smaller projects so that the trigger point for the threshold is not met. Clearly articulated EA standards ensure stakeholders, including the vendor community, will have more concise details on competitive procurements and a better understanding if mandatory standards will need to be enforced.

IV. Suggested Steps for Successful Enterprise IT Procurement

- **Emphasize the guiding principles of EA in IT procurement** - Through a higher level of standardization, states will be able to streamline IT products, services, and, ultimately, state contracts. By breaking down agency silos, consolidation of IT invests can contribute to the conservation of state resources.

- **Leverage the symbiotic relationship between EA and IT Procurement** - Standardization of applicable procurement and EA disciplines, methods, procedures, and rules can provide great value to state agencies and participating vendor community.
- **EA standardization can provide a roadmap for vendors** - This gives vendors insight into the requirements for IT products/services and may even help with product development for state needs. The relationship between the vendor community and the states should be one that is both business-orientated and collegial in nature so that industry best practices can be shared.
- **Create a transparent environment with stakeholders** - IT procurement officials should be thoroughly engaged with the EA governance process at every step of the process. Because the EA standards setting process may exclude certain vendors or products from the acquisition, the EA standards setting process must provide for public notice, a meaningful opportunity for vendor input transparency, integrity, and impartiality to vendors, even though some vendor products may ultimately not meet the standards set forth by the EA governance process. Such early and open participation provides a forum for vendors to communicate with state officials and ensure that RFP proposals on IT contracts foster full and open competition.
- **Regular review of architecture vitality** - By regularly reviewing the business needs and requirements of an organization, refresh cycles and consideration of new technologies, solutions, and designs can be vetted prior to being applied to the enterprise. A regularly defined schedule and process for reviewing legacy systems can help ensure that project innovations are appropriate and suitable for the enterprise architecture context. Vitality is dependent upon an active engagement process that acts as a communication channel for life cycle management and education on emerging strategies.
- **Communicate a vision for success** - Early and consistent communication with IT procurement officials can ensure that agencies and potential vendors have the adequate resources needed. An upfront investment in clearly articulating the standards and business case of IT projects to stakeholders can pay dividends to the success and expediency of future state IT procurements.

¹ TechAmerica Testimony before the Little Hoover Commission, April 2012.
www.techamerica.org/ps-calprocurement.

² Enterprise Architecture Development Tool-Kit Version 3.0, NASCIO, 2004.
<http://www.nascio.org/Publications/PID/485/evl/0/CategoryID/17/CategoryName/Enterprise-Architecture>.

³ Example of a Technology Reference Model, contribution submitted by the Oklahoma Information Services Division (ISD) of the Office of State Finance (OSF).

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**NASPO is a non-profit association dedicated to strengthening the procurement community through education, research, and communication. It is made up of the directors of the central purchasing offices in each of the 50 states, the District of Columbia and the territories of the United States. NASPO is an organization through which the member purchasing officials provide leadership in professional public procurement, improve the quality of procurement, exchange information and cooperate to attain greater efficiency, economy, and customer satisfaction.

***Reference to these documents should not be considered to be an endorsement by TechAmerica and NASPO and are the product of NASCIO and its members.