



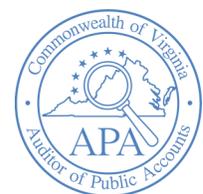
GOVERNANCE OVER ENTERPRISE APPLICATIONS

DECEMBER 2015

Auditor of Public Accounts
Martha S. Mavredes, CPA

www.apa.virginia.gov

(804) 225-3350



Executive Summary

The focus of this performance audit is governance over enterprise applications; those being applications used by multiple state agencies in fulfilling their mission. The Commonwealth could strengthen its governance over enterprise applications by establishing a Deputy Chief of Staff position with responsibility over governance, along with a group of legislative representatives and executive branch data stewards to advise the Deputy in establishing a Commonwealth strategic direction over enterprise applications, setting long-term goals, prioritizing their replacement and upgrade, and providing transparency of their choices via a six-year plan. This governance structure would remove silos and biases that agencies currently managing enterprise applications may have about those systems. The Deputy with the assistance of data stewards would add value in making important strategic decisions to ensure all agencies move in an orchestrated direction with efficiency and effectiveness, improving interoperability and allowing the Commonwealth to make the best decisions about its information technology investment. Governance is important because it aligns information technology activities and resources with the strategic goals of the Commonwealth and its business objectives.

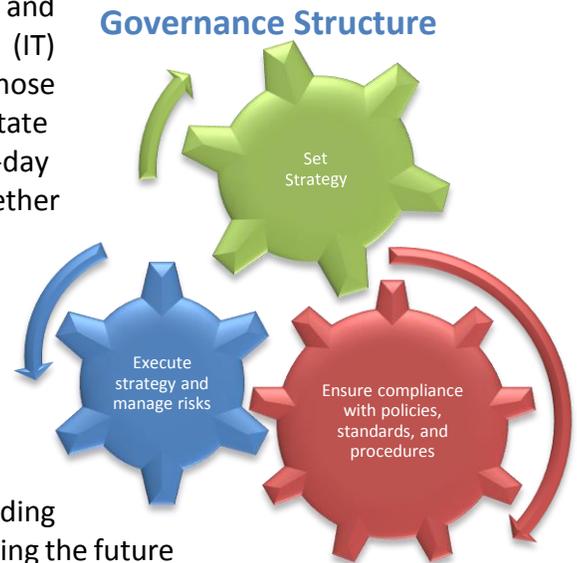
Because a formal governance structure is not in place to manage enterprise applications, the Commonwealth has not adopted a governance framework as recommended by industry standards. A governance framework will lead to better alignment of resources, such as funding and personnel, allowing the Commonwealth to derive maximum value from its systems. Without a governance structure and framework, agencies that manage the current enterprise applications have autonomous control to decide when to modernize their applications, how to modernize, and what software to use.

- TABLE OF CONTENTS -

	<u>Pages</u>
EXECUTIVE SUMMARY	
OBJECTIVES, SCOPE, METHODOLOGY	1-2
REPORT AND RECOMMENDATIONS:	2-18
What is Information Technology Governance?	2-10
Governance Structure over Cardinal Implementation	10-11
ERP – The Cardinal Approach	11-13
Strategic Replacement of Enterprise Applications	14-15
Alternative Solutions to Cardinal ERP	15-16
Governance over Cardinal’s Expanding Footprint	17-18
Future Report	18
TRANSMITTAL LETTER	19
APPENDIX A	20-24
OFFICIAL’S RESPONSE	25-29
RESPONSIBLE OFFICIALS	30

OBJECTIVES, SCOPE, AND METHODOLOGY

The purpose of our review was to understand and evaluate the Commonwealth's information technology (IT) governance structure over enterprise applications; those applications that support business processes at multiple state agencies. Governance occurs outside of the day-to-day operations of enterprise applications and focuses on whether the application meets the Commonwealth's overall strategy and supporting goals. While agency management is responsible for applying knowledge and resources to meet business requirements, those charged with governance ensure the effective and efficient use of the resources to achieve business goals, while also accounting for and managing risk. In order to understand governance, our review includes an understanding of the current enterprise application environment, evaluating the future direction of enterprise applications, as well as other risks identified that are associated with enterprise governance.



Multiple agencies and thousands of end users across the Commonwealth use the current enterprise applications daily to manage the Commonwealth's information, people, and resources. In addition to being the backbone of the Commonwealth, many of these applications are classified as sensitive; therefore, increasing their risk and importance. The Commonwealth purchased fourteen modules of an ERP system, named Cardinal, during 2009. The first implementation currently being offered is a statewide finance module.

In performing this review our objectives were to:

1. Understand and evaluate the Commonwealth's governance structure over enterprise applications;
2. Review how the governance structure affects major enterprise application replacements, using the Cardinal finance implementation as an example; and
3. Inventory existing enterprise applications to understand their age, significance and how the current governance affects their future.

In conducting this review, we examined the historical decisions outlined in the [Code of Virginia](#) and as documented in the former Information Technology Investment Board minutes, researched industry best practices, and interviewed owners of the existing enterprise applications, including leadership and personnel at the Departments of Accounts (including the Cardinal Team), General Services, and Human Resources Management. We also identified risks within the current environment and problems the Commonwealth may encounter when moving forward. In addition, we determined whether each entity's perception of the governance structure was consistent and appropriately aligned.

We will issue a follow up report in the Summer of 2016 to identify independent financial and administrative systems that agencies use and identify the functional needs that justify having these independent systems. That report will examine the pros and cons involved with having similar independent systems in use throughout the Commonwealth, as well as identify the cost of maintaining the individual systems versus replacing them with a single enterprise solution.

What is Information Technology Governance?

IT governance is the process of evaluating stakeholder needs, conditions, and options to determine how to achieve enterprise objectives. Governance occurs outside of the day-to-day operations and focuses on overall strategy and supporting goals. Governance requires organizations to evaluate, select, prioritize, and fund competing IT investments, oversee their implementation, and measure the resulting business benefits. Governance is important because it aligns IT activities and resources with the strategic goals of the enterprise and business objectives. It lowers costs and increases efficiency by preventing resources from being spent on initiatives that do not contribute to the overall vision of the enterprise. IT governance has many components including infrastructure governance, applications governance and security governance. For purposes of this review we limited our focus to IT governance over enterprise applications; those being applications used by multiple state agencies in fulfilling their mission.

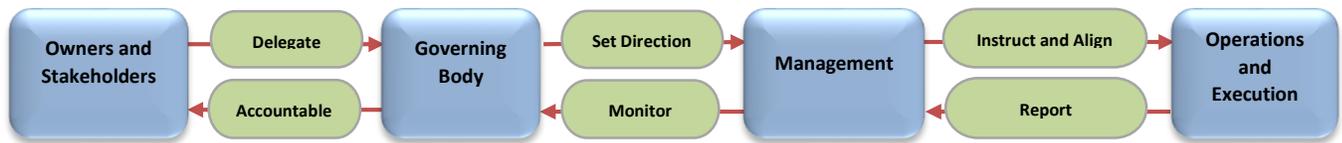
Governance is how enterprise objectives are set and how resources are prioritized in support of those objectives.

Industry best practice recommends that governing bodies adopt an IT governance framework to help ensure an entity stays on track to achieve its strategies and goals, as well as ensuring that all stakeholders' interests are taken into account. By adhering to a documented framework, many entities across various industries have experienced cost savings and improved performance and service delivery. IT governance frameworks provide this improvement because they are designed to allocate and expend resources only on those IT initiatives that contribute to the overall business objectives. A governance framework can be established and applied to a system, a project, or an entire enterprise, but for purposes of our review we applied this framework to IT governance over enterprise applications.

As shown below in Diagram 1, a framework for IT governance over enterprise applications states that the two disciplines of governance and management encompass different types of activities, require different organizational structures, and serve different purposes.

Diagram 1

Example of Governing Model



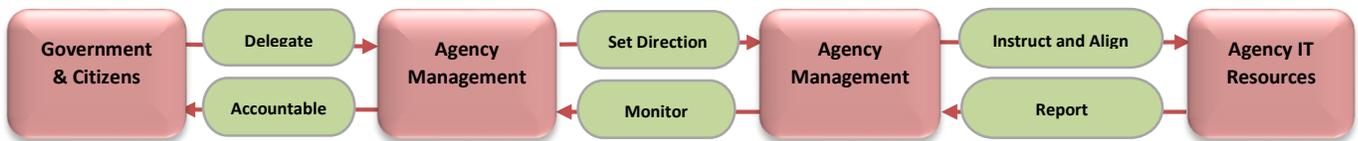
Source: ISACA

As shown in Diagram 1, governance increases effectiveness by ensuring that enterprise goals are being met. The governing body sets the IT strategy and agency management executes that strategy; thereby making the case that governance and management should be separate. While it is reasonable for a steward to manage a system’s performance, it is more appropriate for a governing body to determine whether value is being derived from the system overall.

By comparison, as shown in Diagram 2 below, the Commonwealth’s approach to enterprise applications does not provide for the separation between governance and management. Instead agencies are considered the owner of enterprise applications and its data.

Diagram 2

Current Commonwealth Governing Model



Although agencies must obtain the Commonwealth’s Chief Information Officer and/or Secretary of Technology (SoTech) approval to replace or materially upgrade an enterprise application, generally this process is a matter of completing the proper paperwork, requesting funding in the Appropriation Act, and following project management best practices. These requirements are not particularly strategic but more compliance-oriented and as shown in Diagram 2 above, there is no formal governing body, beyond agency management, to set the enterprise application direction. The SoTech, by virtue of the Code of Virginia, Section 2.2-225.11 can exercise authority over enterprise applications, including establishing oversight committees. However, the SoTech has chosen to allow agencies that have traditionally been considered the enterprise application owner to retain control over its implementation and management, as also provided for in the Code of Virginia, Section 2.2-225.11. That section reads as follows:

“Designate specific projects as enterprise information technology projects, prioritize the implementation of enterprise information technology projects, and establish enterprise oversight committees to provide ongoing oversight for information technology projects. At the discretion of the Governor, the Secretary

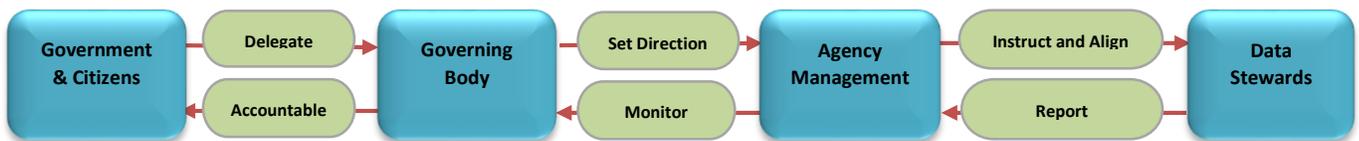
shall designate a state agency or public institution of higher education as the business sponsor responsible for implementing an enterprise information technology project, and shall define the responsibilities of lead agencies that implement enterprise information technology projects. For the purposes of this subdivision, “enterprise” means an organization with common or unifying business interest. An enterprise may be defined at the Commonwealth level or Secretariat level for programs and project integration within the Commonwealth, Secretariats, or multiple agencies.”

As a result, agency management decides when an enterprise application should be replaced, what to replace it with, and how the replacement system should work. When an enterprise application is being replaced, agency management also acts as the primary lead and may choose to involve other user agencies in decision-making.

This model for enterprise application governance was moderately effective when Commonwealth agencies operated separate applications that shared some data elements via an interface. However, Virginia has been seeking increased transparency and recently transitioned to an enterprise resource planning (ERP), starting with its implementation of the Cardinal finance module. We will discuss this in more detail later in this report; however, the movement to an ERP creates opportunities and challenges where decisions and systems crosscut agencies and secretariats and it may no longer be effective to approach IT governance from an individual agency perspective. Best practice would suggest that strong governance is needed above the agency level to evaluate, from a statewide perspective, the value derived from an enterprise application. In doing so, the agency’s role would shift from one of being an owner to that of a data steward. Industry best practice is moving away from ownership of a system and considers the system to be an enterprise asset for which specific agencies are its stewards. Instead of being an owner of the system without accepting any real responsibility, a data steward is one who looks after the data and business processes used by the system in the interests of the whole organization. Diagram 3 below shows an ideal governing model for the Commonwealth that follows best practice.

Diagram 3

Ideal Government Model for the Commonwealth



Good examples of enterprise-wide IT governance frameworks are provided in the Information Systems Audit and Control Association’s, *Control Objectives for Information Technology, Version 5 (COBIT5)*, and, *Value Information Technology (ValIT)*, and represents the resources used for this review. COBIT5 is an example of an industry approved framework that could be applied within the Commonwealth. ValIT focuses on deriving the most value from an IT

system or program and promotes best practices relative to project portfolio and investment management. We compared the Commonwealth's current governance practices over enterprise applications to ValIT to identify areas where deficiencies exist and this detailed analysis can be found within [Appendix A](#) of this report. The analysis identified improvements are needed in:

- Linking enterprise business strategies and enterprise application investments.
- Establishing an oversight board that represents enterprise application stakeholders.
- Coordinating application replacement to exploit synergies and business alignment.
- Establishing total cost of ownership budgets and evaluating non-financial benefits.

COBIT5 addresses the following key principles and provides that adhering to a governance framework ensures all aspects of IT system are managed in a way to achieve each of these items:

- Meeting stakeholder needs
- Covering the enterprise end-to-end
- Applying a single integrated framework
- Enabling a holistic approach
- Separating governance from management

These items all contribute to the success of IT enterprise applications from a statewide perspective and need to be considered at a statewide level.

We also reviewed a 2009 research report from the Center for Technology in Government, a research foundation of the State University of New York, titled *"IT Governance Capability: Laying the foundation for government interoperability."* The report noted that governance across agency boundaries is necessary to ensure government interoperability investments align with priorities and goals defined in strategic plans or by legislative and executive leadership. In essence, as the Commonwealth seeks to replace its legacy enterprise applications with modern applications that provide for interoperability, such as the Cardinal enterprise system, a new governance structure is necessary to prevent a siloed-approach and encourages enterprise application decisions to achieve broader Commonwealth goals. The researchers noted that this process is not easy and has unique challenges in the government sector by virtue of the division of government and the political process. They also recognize, however, that creating an enterprise governance structure can result in the following value propositions, which makes it worth pursuing:

- **Reduce redundancy and establish prioritization mechanisms.** Value is created by complementing and not usurping the missions and goals of individual agencies.
- **Reduce political directions and swings.** Provides a continuity plan for when political leadership changes and serves to support a consistency of vision for IT projects.
- **Establish standards.** Through common technological standards, collaboration and interoperability become achievable goals for many departments and units.

- **Foster sharing of services and information through agency collaboration.** Provides a space for greater coordination and collaboration among agencies.
- **Align IT with business of the state.** Programmatic needs are what drive government organizations and IT governance should strive to provide avenues for the alignment between IT investments and programmatic priorities.

As the researchers explain, a key issue that governments face in improving interoperability is identifying and addressing existing bureaucratic, political, and hierarchical structures and policies that make cross-boundary decisions about priorities, resources, and systems difficult. They suggest that traditional structures (such as having individual agencies

The success of a governance structure relies not only on achieving strong commitment by those who form the governance structure, but also on commitment by those who support the structure.

responsible for managing enterprise applications) remain in place, but that a new governance capability be created to guide a group of individuals from these structures as they learn to make joint decisions, share information, exchange knowledge, integrate process, and use technology to become interoperable. They further suggest that this new governance capability needs formal authority but uses negotiation and collaboration to manage traditional boundaries and constraints rather than replace them. The success of this governance structure relies not only on achieving strong commitment by those who form the governance structure, but also on commitment by those who support the structure, such as executive leadership who need to recognize and accept the governance structure’s advice; data stewards who respect and work cooperatively within the structure; and

legislative bodies, such as money committees, who provide appropriations that support enterprise IT initiatives.

Without an IT governance framework, Commonwealth resources may not be properly aligned with statewide business needs and management of enterprise applications may not be effectively keeping the IT initiatives in line with the business initiatives. Misalignment increases the risk that enterprise application implementation efforts only deliver partial value to the Commonwealth’s citizens. By implementing a modern governance model that provides broader oversight than the Commonwealth’s traditional model, there is opportunity to ensure future enterprise application modernizations provide maximum interoperability which adds value to stakeholders throughout the Commonwealth.

Without an established and implemented industry best practice IT governance framework, resources may not be properly aligned with statewide business needs.

The need for improved IT governance has been a recurring theme of reports provided to the Governor and General Assembly over the years and different structures have been created in response. For example, the Information Technology Investment Board (ITIB) was established in 2003 as it was believed that a board of industry specialists could best establish and enforce

governance over Virginia's IT infrastructure and applications. That group did not achieve the desired result and was abolished in 2010. Likewise, a Chief Applications Officer (CAO) was created in 2006 with responsibilities over enterprise applications and that position was eliminated in 2010 after the ITIB approved pursuit of an ERP system through a joint development effort between the Departments of Accounts and Transportation in lieu of continuing with the CAO's enterprise effort. That same year the Information Technology Advisory Council (ITAC) was created as a technology advisory board to the Secretary of Technology on matters including the prioritization, development and implementation of enterprise-wide technology applications. In 2011 the Secretary of Technology's responsibilities and powers were expanded to include Section 2.2-225 of the Code of Virginia as quoted previously. Throughout all of these changes, some processes have been implemented requiring approvals to implement enterprise applications; but, no changes to governance processes have occurred.

The challenge with enterprise applications governance is that the issue at hand is not a technology problem, but rather a business problem. Responses thus far have dealt with it as a technology problem and; therefore, governance has not significantly improved because the Commonwealth has not addressed the root issue. As noted earlier, agencies have traditionally operated autonomously, receiving guidance and oversight from their related secretary. Although it currently appears in the Code of Virginia that the Secretary of Technology has authority to intervene in the secretary/agency relationship relative to enterprise applications, the Secretary of Technology is a cabinet peer to the other secretaries and exercising the authority is challenging as it may result in discord within the cabinet. At best, the ITAC can advise the Secretary of Technology; however, the Secretary may not believe the Code provides her with the authority to direct another secretariats' actions.

Improving governance over enterprise applications and other technology-related initiatives and policies requires the ability of one individual, such as the Chief of Staff, to direct the secretaries and ensure the best decisions are made for the Commonwealth. It is unrealistic, however, to expect that the Chief of Staff would have the availability and expertise to focus on enterprise technology problems as the Chief is busy dealing with a variety of policy decisions every day. Therefore, we recommend consideration be given to establishing an additional Deputy Chief of Staff position, perhaps given the title of Chief Operating Officer, who could enhance governance by providing the following:

- Reside at an organizational level above the secretaries, giving the Deputy the authority to provide direction.
- Serve multiple administrations since the focus of the job is narrowly defined on operational issues, such as enterprise applications governance, and not on policy issues.
- Listen to all sides regarding governance matters yet be the final tie-breaker to do what the Deputy believes to be in the best interest of the Commonwealth.
- Support the Chief of Staff in providing an expert understanding of government operation issues.

This Deputy would require access to resources, such as staff and/or funding, necessary to execute work desired of this position. These resources could come from the Virginia Information Technologies Agency or perhaps represent permanent resources assigned to report directly for the Deputy.

Recommendation 1

We propose three alternatives to improve Virginia's enterprise applications governance. Alternative 1 is the most desired.

Alternative 1

(This alternative is most advantageous because it creates an individual with authority, expertise, and availability to understand enterprise governance issues. Given this individual's placement in the Chief of Staff's office, he/she would be effective in resolving enterprise application differences that cross cut secretariats and would be effective in advising the Chief of Staff and Governor on how to prioritize and fund enterprise initiatives.)

We recommend the Governor create and the General Assembly fund a Deputy Chief of Staff position. This position would serve at the pleasure of the Chief of Staff and would have authority to direct the actions of cabinet secretaries and their agencies relative to enterprise applications and business operations, such as determining when a technology service should be delivered at the enterprise-level.

Further, we recommend the Governor establish a governance structure to advise the Deputy Chief of Staff on enterprise application decisions, such as recommending when to replace them, how to replace them, and how to fund the replacement. The structure could also ensure enterprise applications promote government interoperability and support the Commonwealth's strategic plan. The governance structure should include the Deputy Chief of Staff; representatives from the House Appropriations and Senate Finance Committees; the Secretaries of Technology, Finance, and Administration who oversee agencies that manage enterprise applications; the State Comptroller; the Commonwealth's Chief Information Officer; and the Directors of the Department of General Services, Human Resources Management, and Planning and Budget who each operate the current enterprise applications and business process.

In addition, the Governor should seek to remove the enterprise applications responsibilities from the ITAC, as their role in this process would no longer be necessary.

This governance structure should create and annually update an enterprise applications strategic plan that defines the long-term goals of enterprise applications to replace the current stove-piped and piecemealed process used by agencies. The governance structure should also submit annually to the Chief of Staff, a rolling and dynamic six-year plan that defines the Commonwealth's enterprise application replacement and upgrade needs and the funding requirements of each, all ranked in priority order. The six-year plan should be consistent with the enterprise applications strategic plan and support funding requests in the Appropriation Act.

Alternative 2

(This alternative is advantageous because it creates provides clear authority to the Secretary of Technology for setting the Commonwealth's direction relative to enterprise applications. This alternative is less desirable than Alternative 1 because it may create tension within the Governor's cabinet, as one secretary would have the ability to control the decisions of other secretaries. In addition, if the Secretary of Technology is unwilling to exert control, agencies will likely continue to drive decisions such as when to replace an enterprise system, what replacement to use, and how the replacement will operate from a business process perspective. Additionally, this alternative is less desirable because the Secretary of Technology may not be as effective in influencing what enterprise application initiatives receive funding as a Chief of Staff position.)

If the Governor does not wish to create a Deputy Chief of Staff position, we recommend the Governor consider modifying existing language under Section 2.2-225 of the Code of Virginia relative to the Secretary of Technology's authority over enterprise applications. As currently written, the language may not provide the Secretary of Technology with clear authority to unilaterally make enterprise application decisions or to intervene to solve problems or differences of opinions between agencies that cross secretariats.

With stronger language that provides the Secretary of Technology with more authority, we recommend the Governor establish a governance structure to advise the Secretary of Technology on enterprise application decisions, such as recommending when to replace them, how to replace them, and how to fund the replacement. The structure could also ensure enterprise applications promote government interoperability and support the Commonwealth's strategic plan. The governance structure should include representatives from the House Appropriations and Senate Finance Committees; the Secretaries of Technology, Finance, and Administration who oversee agencies that manage enterprise applications; the State Comptroller; the Commonwealth's Chief Information Officer; and the Directors of the Department of General Services, Human Resources Management, and Planning and Budget who each operate the current enterprise applications and business process.

In addition, the Governor should seek to remove the enterprise applications responsibilities from the ITAC, as their role in this process would no longer be necessary.

This governance structure should create and annually update an enterprise applications strategic plan that defines the long-term goals of enterprise applications to replace the current piecemeal process used by agencies. The governance structure should also submit annually to the Secretary of Technology, a rolling and dynamic six-year plan that defines the Commonwealth's enterprise application replacement and upgrade needs, the funding requirements of each, all ranked in priority order. The six-year plan should be consistent with the enterprise applications strategic plan and support funding requests in the Appropriation Act.

Alternative 3

(This alternative is also advantageous because it provides for all enterprise business owners (data stewards) to work collaboratively to set the Commonwealth's direction relative to enterprise applications. This alternative is less desirable than Alternatives 1 and 2 because it may not resolve differences of opinions, which arise across secretariats or ensure the Governor's office is sufficiently briefed to support funding of initiatives promoted by this governance structure.)

If the Governor does not wish to create a Deputy Chief of Staff position or modify existing language under Section 2.2-225 of the Code of Virginia relative to the Secretary of Technology's authority over enterprise applications, we still recommend the creation of a governance structure. This governance structure would advise the Secretary of Technology on enterprise application decisions, such as recommending when to replace them, how to replace them, and how to fund the replacement. The structure could also ensure enterprise applications promote government interoperability and support the Commonwealth's strategic plan. The governance structure should include representatives from the House Appropriations and Senate Finance Committees; the Secretaries of Technology, Finance, and Administration who oversee agencies that manage enterprise applications; the State Comptroller; the Commonwealth's Chief Information Officer; and the Directors of the Department of General Services, Human Resources Management, and Planning and Budget who each operate the current enterprise applications and business process.

In addition, the Governor should seek to remove the enterprise applications responsibilities from the ITAC, as their role in this process would no longer be necessary.

This governance structure should create and annually update an enterprise applications strategic plan that defines the long-term goals of enterprise applications to replace the current piecemeal process used by agencies. The governance structure should also submit annually to the Secretary of Technology, a rolling and dynamic six-year plan that defines the Commonwealth's enterprise application replacement and upgrade needs, the funding requirements of each, all ranked in priority order. The six-year plan should be consistent with the enterprise applications strategic plan and support funding requests in the Appropriation Act.

Governance Structure over Cardinal Implementation

The Commonwealth's current Cardinal implementation is an example of an enterprise application replacement that was initiated under a strong IT governance presence, but that governance structure was later abolished and not replaced. In 2008, the Commonwealth's Chief Information Officer (CIO) and Information Technology Investment Board (ITIB) approved Transportation's plan to implement a state-of-the-art, robust ERP system providing they could also deliver the required functionality necessary to replace the aging CARS statewide accounting system. This approval came following the ITIB decision to not invest more funding into the Virginia Enterprise Applications Program's (VEAP) work to procure and

In 2008, the Commonwealth began planning for the new statewide ERP, Cardinal.

implement an enterprise system. Since 2005, the VEAP had been working under a public-private partnership with CGI to define system requirements that would generate a request for proposal to modernize the central system with an integrated application. When the partnership failed to deliver the expected enhanced revenue to pay for the new application, the ITIB voted to drop the initiative and instead leverage Transportation’s knowledge and experience working with such systems. Although in 2010 the General Assembly abolished the ITIB, in 2008 the ITIB had the statutory authority and oversight of system development efforts.

The decision to proceed with Cardinal defined a new direction in Virginia – from one of operating disparate applications to one that would eventually streamline business processes and rules using a robust ERP. The goal of implementing Cardinal was to address the Commonwealth’s most immediate need of a establishing a modern, enterprise financial system. The Commonwealth purchased numerous modules of PeopleSoft software in 2009 and began planning the implementation of Cardinal finance. The name Cardinal, the Virginia State bird, was intentionally selected as to not associate the system with a single business process, such as a financial system, but rather to allow for future expansion with other business modules, if desired.

ERP – The Cardinal Approach

Enterprise resource planning software (ERP) provides a fully integrated suite of business applications (modules) that share a common process and data model that can cover operational end-to-end processes, such as those found in finance, human resources, procurement, personnel, and payroll administration. Integration is the process of bringing functions together and

Integration is the process of bringing together functions and ensuring that the combined functions work seamlessly as one system.

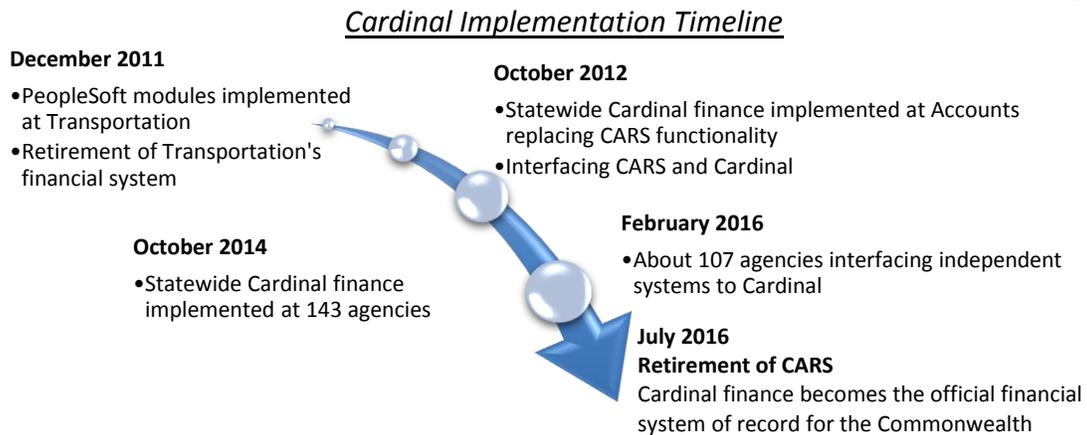
ensuring that the combined functions work seamlessly as one system, sharing a common database. An ERP integrates departments and functions across an enterprise into a single computing system that can serve each department’s particular needs. Features such as automated workflow, security, and reporting, cross all of the functional modules. An ERP ensures that business processes are tightly integrated; therefore, eliminating the need for interfaces between separate, stand-alone systems. This approach ensures that data exists in only one place, reducing duplication and increasing data integrity; therefore, allowing for more



efficient business processes.

In 2014, 143 agencies went live with Cardinal finance. All remaining agencies, most of whom have their own independent financial systems, will interface to Cardinal by February 2016. The old enterprise finance system, CARS, will be decommissioned effective July 1, 2016, at which point Cardinal’s financial modules will become the Commonwealth’s official financial system-of-record. A timeline for Cardinal’s financial modules is shown below in Diagram 4.

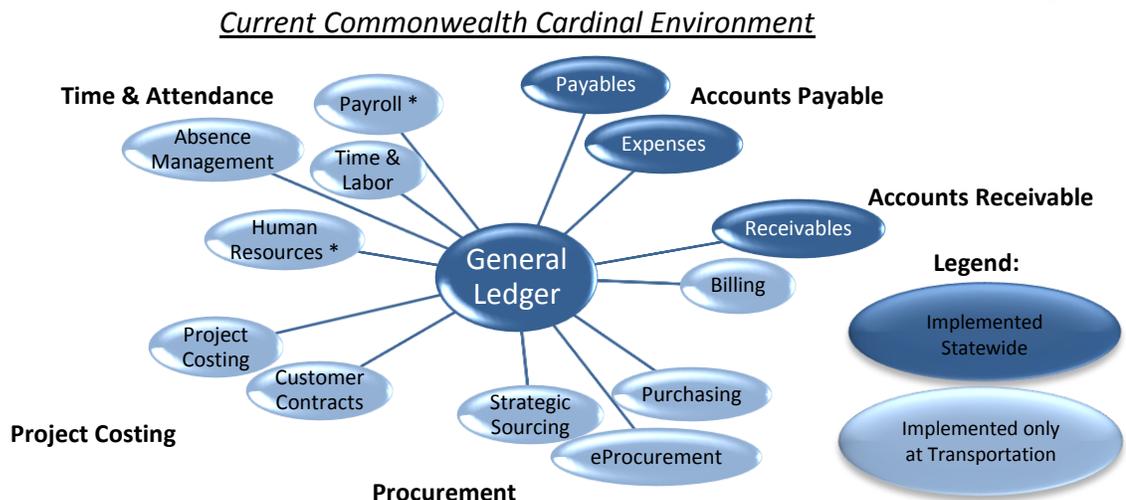
Diagram 4



The Commonwealth invested in a suite of additional PeopleSoft modules with the vision of expanding Cardinal functionality.

With numerous PeopleSoft Modules already owned and implemented in some capacity at Transportation, Cardinal is capable of expanding functionality to include several other administrative functions. In an effort to reduce risk and manage cost during the first transition to an ERP, the Commonwealth intentionally chose to install only PeopleSoft's basic finance functionality by implementing four of its available modules. Using additional modules may help the Commonwealth fully realize a robust statewide ERP while leveraging lessons learned from the initial finance implementation. It will also facilitate a common software architecture, proven project team, standing contracts, and shared partnership between agencies and existing vendors. The Commonwealth has ability to expand Cardinal's footprint to create an environment with a tightly integrated suite of business processes. Currently, Transportation is the only agency who has fully implemented of all 14 modules purchased as shown in Diagram 5 below.

Diagram 5



* These modules were implemented with limited functionality purely to stand up Transportation's time and attendance process.

Cardinal offers both agencies and end users a unified platform capable of addressing the Commonwealth's business and process needs. In fact, consistent with CGI's public-private partnership proposal to pursue enterprise applications and the ITIB's approval to pursue an ERP, the Department of Accounts is expanding Cardinal's footprint by implementing the payroll module to replace the current enterprise payroll application.

For the payroll replacement, the Cardinal team plans to leverage the existing statewide license for the payroll module as well as the comprehensive integration services and support contract with Accenture, which runs through August of 2019. Using the PeopleSoft payroll allows for use of a shared database and effective business processes, as well as real-time integration with Cardinal's chart of accounts and general ledger. Since the PeopleSoft suite also shares a common application security, user access is easier to manage. In addition, the similar look and feel among all of the modules also allows for a seamless user experience. This similar user experience between finance and payroll will allow the Commonwealth to train and leverage more resources who are familiar with the system's operation and should make succession planning easier to manage.

Although there is a steering committee in place to guide the operational day-to-day decisions of the Cardinal team during the finance portion of the Cardinal system implementation, there is no long-term governing body to ensure overall Commonwealth goals relating to Cardinal and all enterprise systems are established and prioritized, and that Commonwealth resources align to meet these goals.

While a collaborative process is often currently in place, the agency acting as the data owner for certain modules, is often inherently driven to make decisions that will benefit that individual agency and not the Commonwealth as a whole. This reinforces the need for the creation of a governance structure that will consider the impact of enterprise applications on all agencies and the Commonwealth as a whole.

If the Commonwealth chooses to expand Cardinal's footprint, it will be required to make difficult decisions that will cut across several secretariats and business owners. As we have noted in previous governance reports, managing projects across secretariats presents challenges that have historically and may continue to result in project failure in Virginia without the proper governance. The implementation of Cardinal payroll and any of the other remaining modules represent ideal candidates for strong IT governance.

A governance structure would hold enterprise application owners accountable to a strategic plan and long-term Commonwealth goals. As governance stands today, agencies currently have the ability to choose the direction of their enterprise applications, which may not be consistent with the ITIB's earlier decision for the Commonwealth to move to an ERP solution unless it is shown that the ERP cannot provide the needed functionality.

Strategic Replacement of Enterprise Applications

Besides Cardinal, the Commonwealth has eight other major enterprise applications that are used by agencies statewide to record or report transactions. These systems are at various stages of their lifecycle and each will eventually require modernization in the future. Table 1 provides information regarding these systems, including the data owner's estimate of their annual maintenance costs. Many of the lower cost systems rely on older technologies and provide only the level of functionality considered state-of-the-art when it was first installed.

Existing Administrative Enterprise Systems

Table 1

System Name	System Owner	Description/Function	Years of Service	Number of System Users	Annual Cost to Maintain
CARS* Commonwealth Accounting and Reporting System	DOA	Statewide mainframe accounting system, providing general ledger, accounts payable and receipting functionality.	30	140+ agencies	\$978,345
CIPPS* Commonwealth Integrated Personnel and Payroll System	DOA	Processes centralized payroll for 120,000 Commonwealth employees.	29	200+ agencies	\$1,919,200
PMIS Personnel Management Information System	DHRM	Automates core administrative functions for executive branch classified and faculty employees.	36	230+ agencies; 300 localities use BES	\$1,377,000
TAL Time Attendance & Leave	DHRM	Electronic means of recording time worked, submitting leave requests, and recording leave.	2	40 agencies	\$607,000
eVA Electronic Procurement	DGS	Web-based electronic procurement system that allows the Commonwealth to conduct purchasing and sourcing activities for goods and services.	14	240+ agencies; 590+ localities; 88,000+ vendors; 8 private colleges	\$15,299,995 paid to vendor supplying the system
FAACS Fixed Asset Accounting and Control System	DOA	Statewide property management system used to record capital asset information for all assets owned or leased that meet capitalizable or controllable requirements.	28	195+ agencies	Approx. \$10,000
LAS Lease Accounting System	DOA	Calculates implicit interest rates and other lease data for economic analysis purposes.	10	130+ agencies	Approx. \$10,000
Performance Budgeting	DPB	Agencies submit budget information to DPB.	5	115+ agencies	\$2,414,000
Cardinal*	DOA	Statewide accounting system, providing general ledger, accounts payable and receipting functionality, replacing CARS effective July 2016.		140+ agencies; 130+ interfacing agencies	Approx. \$21,800,000

*CARS and CIPPS are being replaced with Cardinal modules. CARS will be decommissioned by July of 2016 and Cardinal finance will become the Commonwealth's official accounting system at that time.

As the Commonwealth expands the Cardinal footprint, it is essential the Commonwealth strategically address the future of its current enterprise applications. As discussed earlier, enterprise applications are critical to the daily functions of the Commonwealth so strategically managing and controlling them is necessary in maintaining a strong organization. As seen above in Table 1, several of the Commonwealth’s enterprise applications, including both CARS and CIPPS discussed previously, are over 25 years old, and their outdated technology does not have the ability to provide agencies with the functionality and technological best practices currently needed. In addition, the outdated environments require more administration, as well as create communication limitations because the same data must reside in multiple locations. These factors make these legacy systems increasingly risky.

Replacing enterprise applications often adds complexity, expense, and the need for cooperation across various agencies and secretariats, so gaining the momentum and support for enterprise replacements has historically been challenging. As described earlier, the Code of Virginia Section 2.2-225.11, provides the Secretary of Technology with the authority to designate specific projects as enterprise IT projects, establish enterprise oversight committees, and prioritize the implementation of enterprise-wide IT projects, but she relies on individual agencies to identify new enterprise applications and to decide when to replace existing enterprise applications. We believe Recommendation 1 to create a governance structure over enterprise applications would enhance the enterprise application decision process by shifting it from individual agencies to one that represents the broader interest of the Commonwealth. This would also ensure that system replacements and upgrades are brought forward to the Secretary of Technology for her approval.

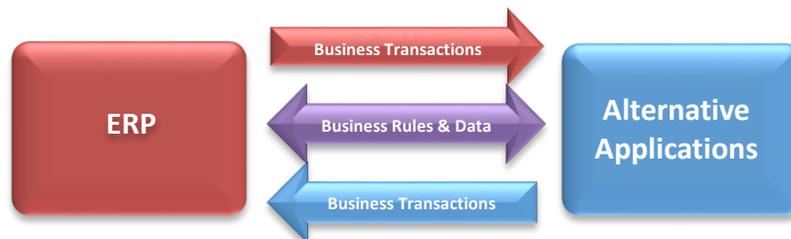
Alternative Solutions to Cardinal ERP

Although the Commonwealth selected PeopleSoft as the Commonwealth’s ERP solution, there may be instances where the Commonwealth finds that a non-PeopleSoft solution better meets the enterprise’s needs and delivers superior results. There are pros and cons to using a non-ERP application. For instance, it would be the buyer’s responsibility to build and maintain the necessary interfaces or integrations so that the application may interact with other applications, such as Cardinal’s finance module. As shown in Diagram 6 below, an interface is a bridge between two or more separate software products that allows them to communicate and would be required if a non-ERP application is chosen. Administrating these interfaces requires effort and costs that should be considered when selecting which alternative to choose. The main function that distinguishes ERP systems from stand-alone solutions is that an ERP is fully integrated, which allows for more efficient processing and eliminates redundant data entry.

*An **Interface** is a bridge between two or more separate software products that allows them to communicate and share data; however, data is maintained in multiple locations and requires more administration.*

Diagram 6

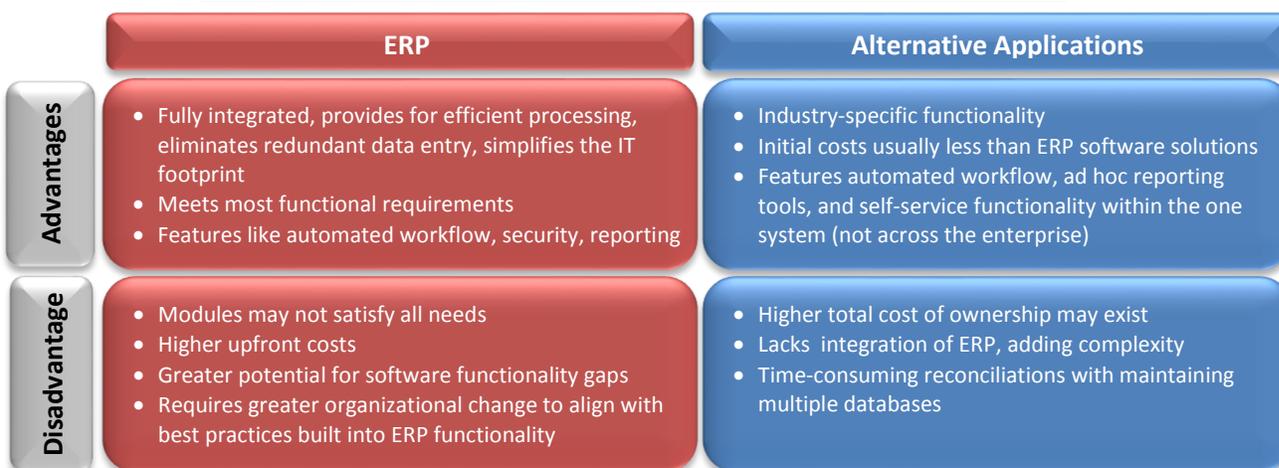
Interface between ERP and Alternative Applications



However, an advantage alternative applications can have over ERP's is that they may provide deeper industry-specific functionality for a particular niche and often can be a better choice for a particular business function. Diagram 7 below identifies the advantages and disadvantages of ERP and alternative software.

Diagram 7

Advantages and Disadvantages of ERP and Alternative Applications



As seen in the diagram above, many factors go into deciding whether to use the functionality built into an ERP versus selecting an alternative application; however, a governance structure should be established to help effectively advise on these decisions.

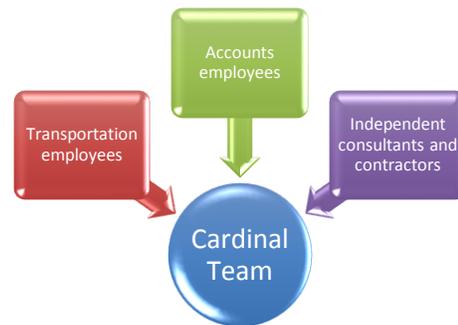
Recommendation 2

The governance structure described in Recommendation 1 should evaluate future enterprise application replacements, and consider whether it is in the Commonwealth's best interest to continue to expand Cardinal's ERP footprint beyond Finance and Payroll, use alternative applications, or consider other technologies such as cloud computing. The evaluation should use a pre-defined governance framework to consider the quantitative attributes of each option, such as cost to implement and ongoing maintenance expenses, as well as qualitative attributes such as ease-of-use, fulfillment of business requirements with minimal customization and work-around, and the user experience. Because Commonwealth leadership changes regularly, an implementation strategy will help establish continuity and ensure the Commonwealth's enterprise vision is retained over the long-term.

Governance over Cardinal's Expanding Footprint

As enterprise applications are replaced and consideration is given to the expansion of Cardinal's footprint, the Commonwealth will require formalized policies and procedures that define how the various data steward agencies will cooperate to manage the Cardinal ERP. These policies and procedures include items such as memorandum's of understanding, a process for upgrading components, defining how costs will be captured and shared, and arbitration procedures to resolve disputes when they arise. Without policies and procedures, the delicate relationships created by multiple data stewards managing one ERP could deteriorate and affect the application's operability. According to COBIT5, "the commitment and buy-in of the relevant stakeholders need to be solicited from the beginning and be clearly expressed in business terms..." COBIT5 goes on to state that as part of this solicitation, roles and responsibilities should be defined and assigned and that commitment from stakeholders should be managed on an ongoing basis.

The Cardinal finance module implementation is an example where the formal agreements between Transportation and Accounts did not exist, yet the outcome was favorable. However, as the number of Cardinal data stewards increase, formal policies and procedures become necessary. During the Cardinal finance module implementation, Transportation and Accounts maintained a flexible working arrangement whereby employees from both agencies, along with contractors and independent consultants hired by



Transportation, formed a collaborative group called, the Cardinal Team. Together, Transportation and Accounts used future state documents created by numerous agency end users during a rigorous multi-year requirements defining process, and developed the scope of work for this project. The Cardinal Team was charged with and focused on the implementation and post-implementation management of the system. All parties understood that individuals on the Cardinal Team would work toward the goal of implementing a state-of-the-art ERP. Team members no longer reported to work at their respective agencies but instead reported to the Cardinal Team, at a different location, and served under the Cardinal Project Manager. Leadership of the project reported to a steering committee consisting of representatives from different areas of the Commonwealth. However, since most of the Cardinal Team consisted of Transportation employees, these employees were naturally inclined to support the interests of their agency and some of these employees continued to report to their Transportation manager during the project.

In addition to sharing staff resources, both Transportation and Accounts shared in the cost of implementing the Cardinal finance module. Transportation contributed over \$52 million and a \$60 million working capital advance, combined with an \$8 million contribution from an available line of credit, totals a \$120 million investment for the implementation of Cardinal's finance module. After this initial outlay, Accounts is appropriated money each year for operating

and maintenance costs of the finance module and in fiscal year 2015, this amount was \$17.1 million. The initial outlay from the working capital advance is to be reimbursed by the agencies via a “per-transaction” fee for Cardinal usage.

In an ERP environment, information security is another aspect that is inherently susceptible to insufficient consideration. Including all relevant stakeholders in the risk management process over Cardinal is essential to obtain all of the perspectives needed for a complete, accurate, and unbiased analysis effort. Without input from all stakeholders and individuals responsible for implementing and monitoring the security posture of the Cardinal system, the Cardinal team may not identify all risks that need to be managed and mitigated. If an incomplete risk analysis is performed, the related exercise may not capture relevant and present risks to the Cardinal system, and may be biased towards the limited agency level viewpoints of the participating parties, rather than having an unbiased statewide risk perspective.

Recommendation 3

We recommend the governance structure from Recommendation 1 develop formal policies and procedures over enterprise applications to include written agreements that define the roles and responsibilities between all entities involved in implementing future Cardinal modules. In developing these policies and procedures, the governance structure should proactively seek stakeholder involvement and agreement to fund the implementation of any additional Cardinal modules before work begins. The policies should specifically address the Cardinal funding model and clarify the funding structure and what constitutes proper supporting documentation as this will be especially crucial as funds are sought for reimbursement from the federal government. In addition, risk analysis and IT security risk mitigation should include information from all stakeholders. Decisions of where mitigation efforts are placed, should be a collaborative effort between the stakeholders and the governance structure.

Future Report

Because the Commonwealth’s current enterprise environment is outdated and lacks modern functionality, for many years agencies have been implementing their own independent administrative and financial systems. These efforts have resulted in decentralization and diversity through the Commonwealth, but Cardinal provides a platform upon which more centralized functionality may be offered, allowing agencies to retire their independent systems.

We plan to issue a report during the Summer of 2016 to identify many of the independent financial and administrative systems currently in use. We will focus on why agencies need these systems and describe the complexities these systems create, such as functionality limitations, data redundancy, lack of standardization, and maintenance costs. In addition, the report will discuss the costs of maintaining and interfacing these systems and what areas of Cardinal functionality could be expanded to allow agencies to retire the independent system and use Cardinal.



Martha S. Mavredes, CPA
Auditor of Public Accounts

Commonwealth of Virginia

Auditor of Public Accounts

P.O. Box 1295
Richmond, Virginia 23218

December 3, 2015

The Honorable Terence R. McAuliffe
Governor of Virginia

The Honorable John C. Watkins
Chairman, Joint Legislative Audit
and Review Commission

We have audited the Commonwealth's governance structure over enterprise applications such as Cardinal and are pleased to submit our report entitled **Governance over Enterprise Applications**. We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Exit Conference and Report Distribution

We discussed this report with the Secretaries of Technology and Administration, Chief Information Officer, State Controller, and leadership at the Departments of General Services and Human Resources Management on various dates throughout October and November of 2015. Additionally, we shared this report with the Secretary of Finance and the Department of Planning and Budget. Each responsible official was invited to respond to this report and if one was provided, it is included in the section titled "Agency Response." We did not audit their responses and, accordingly, we express no opinion on them.

This report is intended for the information and use of the Governor and General Assembly, management, and the citizens of the Commonwealth of Virginia and is a public record.

AUDITOR OF PUBLIC ACCOUNTS

KKH/clj

In December 2007 the APA issued a report titled, *Information Technology Governance* (<http://www.apa.virginia.gov/reports/itgov07.pdf>) which compared Virginia’s IT governance structure to industry best practices as outlined in *VallIT*, issued by the Information Systems Audit and Control Association. When the 2007 governance structure was evaluated, the newly established Information Technology Investment Board (ITIB) had authority and responsibility to govern application development projects and was actively establishing processes and policies to improve how projects were prioritized, funded, and granted approval to move forward. The current Cardinal finance implementation and choice to move forward with an ERP solution for the Commonwealth is an example of one major decision made by the ITIB.

The ITIB was abolished in 2010 and some of their governance responsibilities were moved to the Commonwealth’s Chief Information Officer (CIO) and the Secretary of Technology (SoTech). However, priorities such as administering the Commonwealth’s outsourced infrastructure, has affected the CIO and SoTech’s ability to dedicate resources to improving governance. Additionally, the Code of Virginia language authorizing them to oversee enterprise applications is open to interpretation and the CIO and SoTech may believe they do not have authority to direct enterprise systems but instead defer much of the authority to the agencies.

For this review we again compared the Commonwealth’s IT governance structure to the VallIT best practices and the chart below shows our original 2007 assessment compared to the most recent assessment. The elimination of the ITIB, which existed as the Commonwealth’s enterprise governing body, is the most prominent reason why some best practice areas previously rated as adequate (✓) are now rated as inadequate (✗):

Governance over Enterprise Application Projects		
	2007 Assessment	2015 Assessment
Value Governance		
The reporting line of the CIO should be commensurate with the importance of IT within the enterprise.	✓	✓
The business and IT strategy should be integrated, clearly linking the enterprise goals and IT goals and should be broadly communicated.	✓	✓
Define, implement and consistently follow processes that provide for clear and active linkage among the enterprise business strategy, the portfolio of IT investment programs, and the projects that make up those programs.	✓	✓*
Establish an appropriate control framework that is consistent with an overall enterprise control framework and provide for unambiguous accountabilities and practices to avoid a breakdown in internal control and oversight.	✓	✓

Define a balanced set of performance objectives, measures, targets, and benchmarks and have them approved by the business and other relevant stakeholders.	✓	✗
Report relevant portfolio, program, and IT performance to the board and executive management in a timely and accurate manner.	✓	✗*
Establish appropriate boards, committees, and support structures including, but not limited to, an IT strategy committee, and IT planning or steering committee, and an IT architecture board.	✓	✗*
Make sure the business direction to which expenditures on IT-enabled business investments should be aligned is understood, including the business vision, business principles, strategic goals and objectives, and priorities.	✓	✓*
The governance process must recognize that there are a variety of investment types that differ in complexity and the degree of freedom in allocating funds. Categorize these different investment types. Categories could include mandatory, sustaining, and discretionary.	✓	✓
Align the portfolio mix with the strategic direction of the enterprise. The mix must achieve the right balance of investments on a number of dimensions. These dimensions could include, but are not limited to, an appropriate balance of categories, short- and long-term returns, financial and non-financial benefits, and high risk versus low risk investments.	✗	✗
For each category of investment have evaluation criteria to support fair, transparent, repeatable, and comparable evaluation.	✗	✓

Portfolio Management		
Create and maintain an inventory of current IT human resources, their competencies, and their current and committed utilization.	x	x
Understand the current and future demand for IT resources based on the current portfolio and a forward view of the portfolio.	x	✓
Identify shortfalls between current and future IT and business resource demand, and current and planned IT and business resource supply.	x	x
Create and maintain tactical IT plans for resources that are required to support the portfolio of IT-enabled investment programs and the IT strategic plan.	x	x
Periodically review the IT function and business organizational structure to adjust staffing requirements and sourcing strategies to meet expected business objectives and respond to changing circumstances.	x	x
Determine the overall budget available for the portfolio, the current commitment of that budget, the current approved spending and the actual spending to date.	x	✓
Perform an initial, high-level assessment of the program concept business case looking at strategic alignment, benefits, overall financial worth and risk, and fit with the overall portfolio.	✓	✓*
Perform a detailed assessment of the program business case and assign a relative score to the program based on the evaluation.	✓	✓*
Assess the impact on the overall portfolio of adding a candidate program. Determine the impact on the portfolio mix.	✓	x
Determine whether the candidate program should be selected and moved to the active portfolio.	✓	x
Review the portfolio on a regular basis to identify and exploit opportunities for synergies and to identify, mitigate, and minimize risks.	✓	x
When changes occur to the internal or external business environment, re-evaluate, and reprioritize the portfolio.	✓	x
Provide a succinct, all-round view of the performance of the portfolio to the board and executive management in a timely and accurate fashion.	✓	x
Recognize opportunities for investment programs to create value in support of business strategy or to address operational or compliance issues.	✓	x

Investment Management		
The business case should describe the business outcome to which the potential program will contribute, the nature of the programs contribution, and how that contribution will be measured.	✓	✓
Utilize appropriate methods and techniques, involving all key stakeholders, to develop and document a complete and shared understanding of the expected business outcomes of candidate programs.	✓	✗
Identify alternative courses of action to achieve the desired business outcomes.	✗	✗
Define and document all projects, including business, business process, people, technology and organization projects, required to achieve the programs expected business outcomes.	✓	✓*
For each key outcome achievement, identify and document baseline and target measurements and the method for measuring each key outcome.	✓	✓*
Prepare a program budget that reflects the full economic life cycle costs and financial and non-financial benefits, and submit for review, refinement, and approval by the business sponsor.	✓	✓*
Develop a complete and comprehensive business case of the program consistent with the enterprise's standard business case requirements.	✓	✓*
Clearly and unambiguously assign and monitor accountability for achieving the benefits, controlling the costs, and managing the risks, and coordinating the activities and interdependencies of multiple projects.	✓	✓
Plan, resource, and commission the necessary projects required to achieve the program results.	✓	✗
Manage program performance against key criteria such as scope, schedule, quality, costs, and risks.	✓	✓*
Implement a benefit monitoring process to ensure that planned benefits are achieved, sustained, and optimized.	✗	✗
Update the business case to reflect the current status of the program.	✓	✗
Define and implement enterprise practices to ensure that program performance and IT's contribution to that performance are reported to the board and executive management in a timely and accurate fashion.	✓	✗
Close projects in an orderly manner where there is agreement of the realization of the desired business value.	✓	✓*

* Although agencies are required to report much of the project documentation outlined above to the Project Management Division of VITA, the Commonwealth does not have a governing body or board to ensure that the planned projects align with the strategic direction of the Commonwealth, as opposed to aligning with just the strategic direction of the specific agency. The design of the current oversight structure assesses IT projects individually; however, the ValIT framework emphasizes project planning and decisions to derive the most value from the IT architecture.



COMMONWEALTH of VIRGINIA

Office of the Governor

December 1, 2015

Nancy Rodrigues
Secretary of Administration

Ms. Martha S. Mavredes, CPA
Auditor of Public Accounts
Post Office Box 1295
Richmond, Virginia 23218

Dear Ms. Mavredes:

Thank you for the opportunity to comment on the *IT Governance Report*, that we received on November 24, 2015. The audit report presents findings and recommendations from the Auditor of Public Accounts (APA) staff assigned to complete the audit.

My comments address the overall report only; the Department of General Services will separately address the report details. The report indicates in the Governance Structure Over Cardinal Implementation section that *“The name Cardinal, the Virginia State bird, was intentionally selected as to not associate the system with a single business process, such as a financial system, but rather to allow for future expansion with other business modules, if desired.”* I am unaware of any determination that Cardinal would become the state’s enterprise system of record and that it would expand Enterprise Resource Planning System (ERP) modules to replace other enterprise systems currently in place. It is critical that Virginia evaluate all options identified in recommendation 2 for future enterprise application replacements, and consider whether it is in the Commonwealth’s best interest to continue to expand the Cardinal ERP footprint, implement alternative applications, or consider other technologies such as cloud computing (SaaS).

I believe it is important that APA work with VITA and the current business owners of enterprise systems to establish a consensus definition and application of terms integration and interface, in order to best meet the needs of the Commonwealth. Per recommendation 2, if it is determined that Cardinal PeopleSoft ERP functionality should not be expanded then it is critical that the components of that enterprise solution integrate where appropriate with the Cardinal PeopleSoft modules or other applicable enterprise systems.

Based on the comments and corrections set forth herein, I respectfully request that this letter be appended to the aforementioned APA report and distributed to all parties to whom the APA report will be distributed.

Sincerely,



Nancy Rodrigues
Secretary of Administration

- c: Christopher Beschler, Director, Department of General Services
- Richard (Ric) Brown, Secretary of Finance
- David Von Moll, Comptroller
- Randy McCabe, Assistant Comptroller
- Joe Damico, Deputy Director, Department of General Services



COMMONWEALTH of VIRGINIA

Department of General Services

Christopher L. Beschler
Director

Joseph F. Damico
Deputy Director

December 1, 2015

1100 Bank Street
Suite 420
Richmond, Virginia 23219
Voice (804) 786-3311
FAX (804) 371-8305

Ms. Martha S. Mavredes, CPA
Auditor of Public Accounts
Post Office Box 1295
Richmond, Virginia 23218

Dear Ms. Mavredes:

Thank you for the opportunity to comment on the *IT Governance Report*, that we received on November 24, 2015. The audit report presents findings and recommendations from the Auditor of Public Accounts (APA) staff assigned to complete the audit.

Comments:

Governance Structure Over Cardinal Implementation

The last paragraph states: "*The name Cardinal, the Virginia State bird, was intentionally selected as to not associate the system with a single business process, such as a financial system, but rather to allow for future expansion with other business modules, if desired.*" DGS is not aware of any determination that Cardinal would become the state's enterprise system of record and that it would expand Enterprise Resource Planning System (ERP) modules to replace other enterprise systems currently in place.

ERP – the Cardinal Approach

In this section APA defines and refers to Integration and Interface multiple times. DGS does not concur with APA's definitions of Integration and Interface. APA has defined integration as "*the process of bringing together functions and ensuring that the combined functions work seamlessly as one system.*" DGS uses the industry definition: *Integration is the technology used to electronically send a transaction from one system to another in real-time.* APA has defined interface as "*... a bridge between two or more separate software products that allows them to communicate and share data, however data is maintained in multiple locations and requires more administration.*" DGS uses the industry definition: *Interface is the technology used to send a file of transactions from one system to another on a periodic basis.*

In the first paragraph, APA states *“An ERP ensures that business processes are tightly integrated, therefore eliminating the need for interfaces between separate, stand-alone systems. This approach ensures that data exists in only one place, reducing duplication and increasing data integrity, therefore allowing for more efficient business processes.”* DGS does not agree with this statement. For the Commonwealth not to consider the benefits of Software as a Service (SaaS) over an ERP solution for enterprise applications, it will likely result in the same situation that the Commonwealth experienced with the aging CARS statewide accounting system. SaaS offers best-of-breed software and the flexibility to swap components when better functionality is available, and would allow the Commonwealth to extend the life of its statewide systems without being tied to a single vendor solution.

In the third paragraph, APA states *“The Commonwealth has ability to expand Cardinal’s footprint to create an environment with a tightly integrated suite of business processes. Currently, Transportation is the only agency who has fully implemented of all 14 modules purchased as shown in Diagram 5 below.”* Transportation has implemented and developed interfaces to Cardinal using the PeopleSoft procurement module. Transportation’s use of the PeopleSoft procurement module at the point of requisition is in violation of successive Administration directives on the use of eVA at the point of requisition. Point of requisition directives started in 2001 and continued through 2008 when the then-current Administration further directed that all agencies that were currently interfacing to eVA were to submit a transition plan to use eVA at the point of requisitioning. In 2011, the requirement to use eVA at the point of requisition was codified by the General Assembly in § 2.2-1110, solidifying in the Code what had administratively been required since 2001.

APA draws the conclusion in the fourth paragraph that *“Cardinal offers both agencies and end users a unified platform capable of addressing the Commonwealth’s business and process needs.”* DGS does not agree with this statement pertaining to the Commonwealth’s procurement processing needs. eVA is a complete eProcurement system that offers a wide-ranging and robust suite of tools that are continually updated with features and functionality that are not available in Cardinal PeopleSoft. eVA currently includes: Requisitioning; eCatalogs; Approvals; Orders; Electronic Order Delivery; eSourcing & Reverse Auctions; Public Posting & Electronic Vendor Notifications; Vendor Self-Service Registration; Contract Management; Reporting; Spend Analytics & Spend Management; Integration or Interface currently with over 40 different ERPs; Smartphone Mobile Applications; Procurement Vendor Data Standard Master Data Distribution; Transparency Reporting of all purchase, Supplier, and Sourcing data across all business units; and Data and File Retention. DGS believes eVA meets the procurement business and process needs of the Commonwealth.

Governance over Cardinal’s Expanding Footprint

The first paragraph states, *“As enterprise applications are replaced and consideration is given to the expansion of Cardinal’s footprint...”*: DGS is not aware of any determination that Cardinal would become the state’s enterprise system of record and that it would expand its footprint to replace other enterprise systems currently in place. If this is the intent of the Commonwealth then it is critical that recommendation 2 be adopted which requires evaluation of future enterprise application replacements, and consider whether it is in the Commonwealth’s best interest to continue to expand Cardinal’s ERP footprint, use alternative applications, or consider other technologies such as cloud computing (SaaS).

Based on the comments and corrections set forth herein, I respectfully request that this letter be appended to the aforementioned APA report and distributed to all parties to whom the APA report will be distributed.

Sincerely;

A handwritten signature in black ink, appearing to read 'Christopher Beschler', with a long horizontal line extending to the right.

Christopher Beschler

- C: Nancy Rodrigues, Secretary of Administration
- Richard (Ric) Brown, Secretary of Finance
- David Von Moll, Comptroller
- Randy McCabe, Assistant Comptroller
- Joe Damico, Deputy Director, Department of General Services

RESPONSIBLE OFFICIALS

Ric Brown
Secretary of Finance

Karen R. Jackson
Secretary of Technology

Nancy Rodrigues
Secretary of Administration

Christopher L. Beschler
Director, Department of General Services

Nelson Moe
Chief Information Officer

Daniel Timberlake
Director, Department of Planning and Budget

David A. Von Moll
State Comptroller

Sara Redding Wilson
Director, Department of Human Resources Management