

Joint Legislative Audit and Review Commission



**Supplemental Material  
to Review of  
Information Technology Services  
in Virginia: Final Report**

Commission Briefing

December 14, 2009

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## In This Presentation

- VITA's Internal Service Fund Rates Require Revision
- IT Investment Management Process Needs to Be Completed
- IT Project Oversight Appears Effective But Needs Updating
- IT Security Has Improved But Policy Changes Are Needed

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# Finding

- Widespread problems exist with current rates

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# Creating & Maintaining an Accurate Inventory Are Key to Accuracy of Rates

- Two types of inventory exist
  - “Hard” assets such as computers or printers
  - “Soft” assets such as storage space or computing time
- Agencies no longer have clear ability to verify inventory
  - Hard assets could be regularly counted
  - Soft assets cannot be verified by agencies
- Ensuring accuracy has been a challenge
  - VITA did not have accurate inventory before NG
  - NG has struggled to reconcile & maintain their inventory
- Contract lacks clear penalty if inventory is inaccurate, other than returning the invoice

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## Current Internal Review of VITA's Rates Is Inadequate

- ITIB is responsible for ensuring rates are current & accurate
  - JLARC bases their approval upon ITIB's review
- However, ITIB assigned responsibility for rate review to CIO in 2004
  - ITIB's current review is very limited
  - Review of rates by CIO creates conflict of interest

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## Federal Requirements Affect VITA's Rates

- Federal government approves VITA's rate methodology
  - No formal federal approval exists for current methodology
- Federal government also approves use of funds by State agencies, including payments to VITA
  - State agencies are fiscal agents for federal funds
  - Potential repayment if federal audit finds grant requirements were violated
- Unclear if new NG fees created as part of rebaselining will comply with federal requirements
  - Contract appears to require this (section 20.2)
  - NG says federal requirements do not apply to its fees

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## JLARC Conducts Limited Review of VITA's Rates

- Review ensures rates will generate sufficient revenue
  - Otherwise, general funds could be needed
  - No “benchmarking” of rates to other providers
- JLARC places conditions on use of rates
  - Manner in which rates are applied & use of revenues
- JLARC only reviews rates if VITA makes request
  - Some VITA rates not reviewed in 15 years
- Despite limited review, agencies perceive JLARC is comprehensively assessing reasonableness of rates
  - VITA has actively promoted this viewpoint, stating JLARC conducts benchmarking

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## Present Review Has Found Several Concerns With VITA's Use of Its Rates

- Agencies report rates conflict with approved use
  - Example: rate requires billing for storage based on actual amount used, but VITA reportedly bills for a larger pre-determined amount
- VITA has not used its mainframe rates as intended
  - For many years, VITA has used unpublished “factors” to adjust rates without JLARC review
  - VITA reports not knowing review was required
- 5.52% markup on procurements is out-of-date
  - JLARC first approved rate in 2004 to cover VITA's total overhead
  - Overhead has changed but rate has not
  - VITA cannot report whether the revenues are still for original purpose, limiting ability to ensure 5.52% is still correct percentage

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## Present Review Has Found Several Concerns With VITA's Use of Its Rates (continued)

- Some rates not clearly linked to fees charged by NG
  - Example: personal computer rates pay NG for several services (help desk fees, capital cost) but the actual cost of each service is unknown
  - Will be addressed as part of rebaselining
- Information on other rates provided to customer agencies does not clearly describe the service
  - Example: \$28 monthly network fee is charged per computer but no clear purpose is stated
- VITA's rates for services provided by NG include overhead charge based on 2005 estimates, not current overhead cost
  - Each rate for NG services includes 10% for VITA's overhead, plus 20% for NG's overhead (30% of each rate is for overhead)

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# Finding

- Pending contractual changes to NG's fees, and other concerns, point to need for complete revision of VITA's rate structure

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## NG Contract Has Reduced State's Ability to Adjust Rates Charged to Agencies

- Once rebaselining occurs, majority of VITA's rates will be driven by NG's contractual overhead & fees
  - VITA may have other rates for services provided outside of NG contract
- NG contract reduces VITA's & legislature's role
  - Rebaselining will set NG's fees for several years, which VITA cannot adjust
  - JLARC will have limited discretion to disapprove rates based on contractual fees
- Legislature's ability to control costs also hindered by open-ended "sum sufficient" appropriation

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## VITA Needs to Revise Entire Rate Structure & Process

- New rate structure needs to reflect VITA's current role & associated overhead
  - VITA needs to update its “cost centers” & allocate direct & indirect overhead accordingly
- Rate process also needs to be improved
  - Need for more transparency in how rates are calculated & how revenues are used
  - Need for better tracking of revenues & their uses to ensure they are tied to rationale used to calculate rate
  - Need to request all rate changes prior to start of applicable fiscal year

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## Nature & Extent of JLARC's Rate Review Need To Be Reconsidered

- Appears to be required once NG's fees are set in contract
  - JLARC's future reviews will be effectively limited to evaluation of VITA's overhead charges
  - Past problems suggest need to create sunset policy for all rates
- Process also needed to obtain feedback from customers prior to rate request
- Consideration should also be given to using general funds instead of rates in future years for oversight activities
  - Use of rates limits use of oversight & support by agencies
  - Currently, VITA's cost to assist local governments with IT security are paid by State agencies via VITA overhead

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## Improved Forecasting & Planning of IT Services Are Needed

- Currently, forecasting & trend analysis is limited
- Need exists to examine use of services
  - Comparison of costs to marketplace
  - Relative use of individual services (mainframe vs. server, desktop vs. laptop)
  - Relative use of services by differing agencies
- Prominent example is use of Unisys mainframe
  - 99% of services used by DSS
  - If DSS reduces consumption, will other customers pay full \$16 million annual cost?

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## Improved Forecasting & Planning of IT Services Are Needed (continued)

- Prior consideration is also needed regarding impact of contract termination & rates
  - Many current rates include pre-payment of replacement asset
  - How will termination of contract affect staggered pre-payment schedules?

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## VITA Charged With Improving State IT Management & Planning

- Improve management of State's IT assets
  - Develop standards for IT management
  - Inventory IT assets
  - Manage IT infrastructure & applications
- Improve IT planning
  - Plan for statewide IT needs
- Improve IT investment
  - Review & approve agency IT projects & procurements
  - Prioritize major investments based on benefit to State
  - Direct development of statewide & multi-agency projects

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# Finding

- VITA has not yet fully implemented tools & practices that could improve IT management, planning, & investment

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## Some Progress Made in Implementing New IT Management Standards

- Successful planning & investment needs IT management standards to
  - Determine when to replace equipment or applications
  - Appropriately select new IT investments
  - Manage IT projects
- State had some investment standards since 1991, but they were not enforced
- VITA has developed new standards for monitoring IT assets, but they are not fully implemented
  - Project management standards are more fully implemented

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## Progress Only Recently Made in Development of Asset Inventories

- Inventories are critical to IT management & planning
  - Although many agencies maintain inventories, the costs of individual IT systems are not tracked
- Central IT agencies produced State asset inventories since 1990s, but accuracy was questionable
- NG & VITA only now completing asset inventories
  - VITA completing **application & data** inventory
  - NG completing **infrastructure** inventory

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## VITA Has Not Fully Developed an Enterprise Architecture, Which Hinders IT Planning

- Although development of enterprise architecture began in 1999, it is still incomplete
  - VITA cites resource constraints, including general fund reductions, as reason for delay
- Architecture documents intended to show how IT supports agency operations & identify
  - Opportunities to consolidate processes & IT assets
  - Opportunities for collaborative investments
  - Pressing investment needs, such as aging assets
- Architecture would also assist in review of proposed investments, like new IT projects

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## State Needs Plan That Assesses Current IT Environment & Identifies Future Needs

- No plan exists that assesses **overall** condition of IT or that identifies common needs of agencies
  - Would allow State to better target IT investments
- IT agencies have conducted statewide planning since 1989, but critical needs were still not addressed
- Commonwealth IT Strategic Plan lacks focus on agency needs
  - Focuses on technology goals that align with long term objectives set by Council on Virginia's Future
- VITA's review of agency IT strategic plans does not result in overall assessment of needs

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## Value of RTIP Report Prioritizing Proposed IT Investments Has Been Limited

- Recommended Technology Investment Projects (RTIP) report ranks prioritized IT investments
- Benefit of RTIP has been limited because it does not include
  - Description of how an investment addresses statewide needs
  - Description of point system used to rank investments
  - Actual points awarded to individual investments
- Policymakers cannot fully rely on RTIP to determine what IT investments best benefit the State

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## Recommendation

- VITA should develop an annual IT plan assessing (a) the current condition of IT in the State, (b) factors impacting State IT, (c) the desired condition of State IT based on goals set forth by the Governor, the Council on Virginia Performs, & the Commonwealth Strategic Plan for IT, and (d) changes & investments needed to achieve the desired condition, including identification of the State's most critical IT needs in the near- & long-term. This plan should incorporate information submitted by agencies in each of these categories as part of their annual IT strategic plans & evaluation of the State's enterprise architecture. The plan should be submitted to the Governor and the General Assembly

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# Recommendation

- The Recommended Technology Investment Projects report should be revised to clearly indicate how project prioritizations were determined, including scores for each project & the objective criteria & point system used to arrive at those scores

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# JLARC Found Wasted Spending Resulted From Poor IT Project Management

- 2003 JLARC report found State wasted \$103 M on failed or delayed IT projects (1991 – 2002)
  - Some projects lacked business case, adequate planning, or agency executive support
  - Some projects not properly managed
- Report recommended
  - State IT project management standards, including formal project management process
  - Central review, approval, & monitoring of major IT projects

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## Project Management Oversight Created to Reduce Wasted Spending

- General Assembly established mandatory project management framework in statute
  - Projects meeting certain thresholds subject to requirements based on JLARC recommendations
- Project Management Division (PMD) in VITA created & vested with statutory responsibility for
  - Refining & implementing project management process
  - Reviewing, approving, & monitoring IT projects
  - Developing project manager qualification & certification standards

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# Finding

- Project management oversight appears to have effectively managed risks associated with IT projects

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## VITA Implemented Project Management Process Aimed at Addressing JLARC Concerns

- Projects must be formally reviewed & approved
  - Agency must develop business case & project plans
  - Agency heads & VITA must approve
- VITA monitors & reports on ongoing project status
  - Review monthly project status reports
  - Communicate regularly with agency project managers
- Project managers must meet minimum certification & experience requirements set by VITA

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## Project Management Oversight Appears to Have Been Effective in Preventing Failures

- Project fails when it doesn't meet intended goals, resulting in waste of all or most project funds
- No projects have failed under VITA oversight
  - Industry average is 18% IT project failure rate
- Appears VITA's oversight successful in ensuring projects have
  - Adequate business case
  - Support of agency executives

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## Oversight Appears to Have Reduced Cost Overruns, but This Trend May Not Hold

- JLARC staff reviewed Project Management Division (PMD) data on completed & active major IT projects (2004-Present)
- Found that completed projects were accomplished for **\$10 M less** than originally planned
  - Savings attributable to lower than planned service & training costs, unused contingency funds, & reductions to project scopes
- However, currently active projects have experienced cumulative budget increase of **\$13 M more** than planned
  - PMD data may not account for projects planned to be delivered under budget, which could offset increase

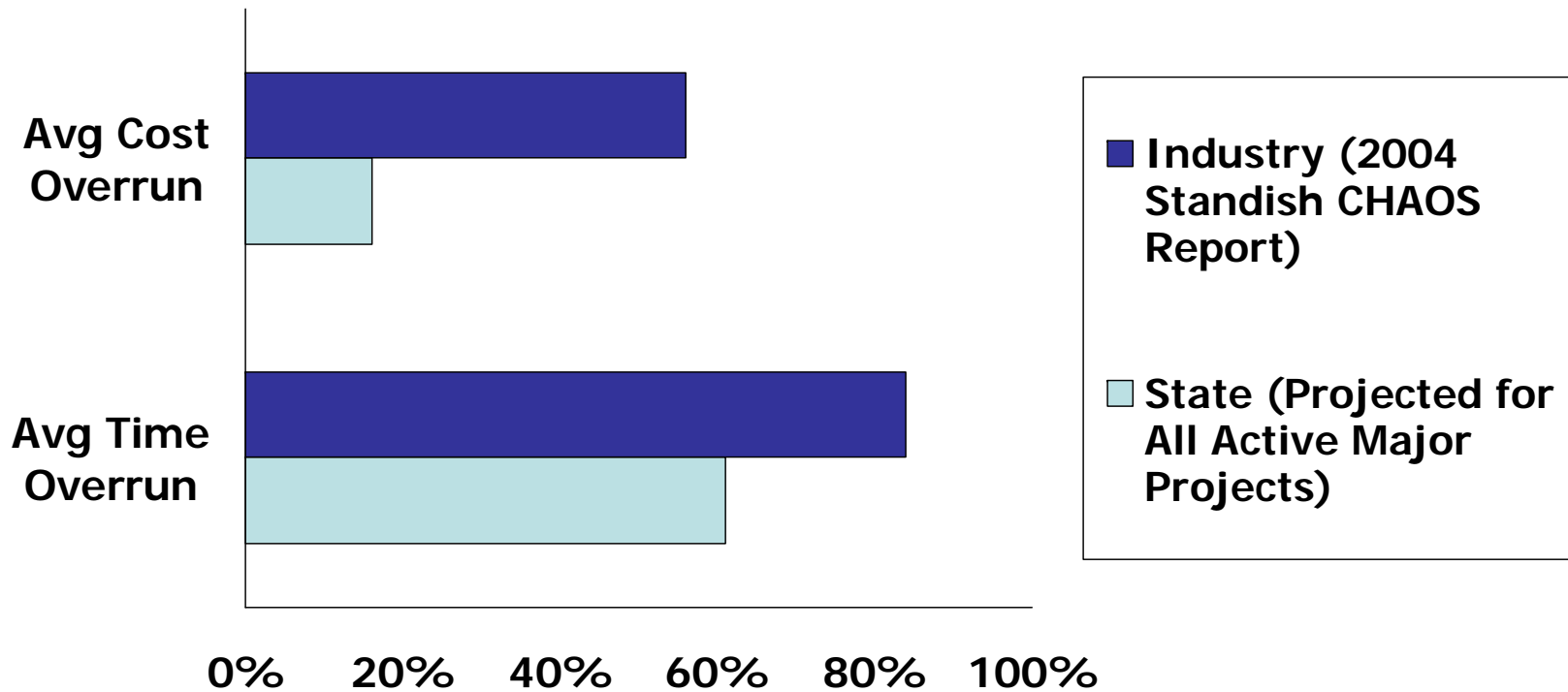
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## Failure To Appreciate Complexity of Agency Operations Is Primary Reason for Overruns

- Many agency functions strictly defined by statute or federal regulations & cannot be modified
  - Agencies fail to communicate restrictions to vendor, thereby underestimating needed customization
  - At times, ITIB & VITA have failed to identify these restrictions during planning reviews
- Other causes include
  - Vendor unable to deliver on promises
  - NG unable to provide infrastructure in timely manner
  - Other unanticipated technical challenges or agency resource limitations

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# While Future Overruns Are Expected, Projected State Averages Lower than Industry Averages



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# Finding

- VITA's management of State's IT investment portfolio needs improvement

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## VITA Needs to Analyze Overall Project Performance Trends

- VITA collects project data in IT investment portfolio
  - Includes planned, active, & completed projects, plus major procurements
  - Provides statewide view of IT investments
- VITA has not analyzed trends in project performance
  - VITA says analysis not requested
  - Appears some portfolio data incomplete or not easily accessible
- VITA needs to perform this analysis in order to
  - Evaluate effectiveness of State's project management planning & oversight
  - Identify drivers of project cost & schedule overruns
  - Verify that portfolio data is complete & accurate

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## Recommendation

- The Project Management Division should design electronic reports in its project portfolio that can be used to analyze project performance, including trends in cost, schedule, & scope change in completed & ongoing projects. Performance trend reports should be used by PMD to manage portfolio & regularly be made available to the Governor, General Assembly, JLARC, and Auditor of Public Accounts

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# Finding

- Statutorily-defined project thresholds lack flexibility, resulting in inefficient allocation of oversight resources

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## Projects Meeting Certain Thresholds Must Pass Through the State's Project Management Process

- General Assembly placed project thresholds recommended by 2003 JLARC report into statute
- "Major" projects must comply with project management process
  - Cost over \$1,000,000
  - Mission-critical, or
  - Has statewide application
- Projects with a total cost over \$100,000 (but not meeting above criteria) must be approved by CIO

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## IT Project Risk Cannot Always be Measured by Cost of Project or Other Factors

- Expensive or mission-critical projects can be low-risk
  - Purchase & installation of IT equipment
  - Upgrade existing applications to newer versions
- Inexpensive projects can be high-risk
  - Small custom-built applications
- Projects involving several parties can have varied risk
  - Creating multi-agency website is low risk
  - Designing application to meet multiple business needs is high risk

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## Statutorily-Defined Project Thresholds Do Not Account for Unique Project Risk

- Currently, all projects that meet thresholds are subject to same process regardless of risk
  - Low & high risk projects given same scrutiny
  - VITA has interpreted “statewide” too broadly (intended to apply only to “enterprise” projects)
- While high risk projects benefit from oversight, low risk projects may not
  - Oversight may delay project & increase costs
  - Highest risk projects may not receive adequate attention

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## VITA Working With Agencies to Develop Process to Align Project Oversight With Risk

- New methodology would
  - Monitor & assess risks throughout project lifecycle
  - Adjust extent of oversight as risk changes
- Goal of improving efficiency of project approval process & targeting oversight resources
  - Changes to statute required

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## Recommendation

- The General Assembly may wish to consider amending the statutory definition of a major IT project, as defined under § 2.2-2006 of the *Code of Virginia*, to conform to VITA's new project oversight assessment methodology

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## Project Management Process Could Be Better Aligned With Industry Best Practices

- VITA & CIO responsible for developing project approval process
  - General responsibility under §§ 2.2-2008 & 2.2-2017
- VITA's process appears to largely reflect industry-leading Project Management Institute (PMI) standards
- However, statute also includes specific project approval process (§§ 2.2-2018 & 2.2-2019)
  - Does not follow standard PMI terminology
- Statutory description of approval process appears unnecessary & may interfere with needed changes

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## Recommendation

- The General Assembly may wish to consider repealing §§ 2.2-2018 - 2.2-2019 of the *Code of Virginia*, which defines a specific project approval process

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- Changes to IT Security Policy & Responsibilities Are Needed

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# Findings

- VITA's oversight has improved IT security, but VITA policies place all responsibility on agencies despite their lack of control over the infrastructure
- Security responsibilities of CIO are not adequately defined

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## VITA's Policies Appear to Have Improved IT Security Across the State

- CIO promulgates IT security policies & standards for all branches of State government
  - No mandatory state-wide security requirements were in place prior to VITA
- VITA's policies require agencies to
  - Meet VITA's minimum standards for IT security
  - Establish security program, including audits
  - Designate a IT security officer
- Agencies report compliance requires significant time & resources, but security has improved

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## VITA Places All Security Responsibility on Agencies But Agencies Don't Control Infrastructure

- Statute assigns **CIO & VITA** responsibility to develop security policy & standards
- VITA's policies have assigned **agencies** all responsibility for ensuring security of applications & infrastructure
  - No direct responsibility for infrastructure security is assigned to CIO or VITA
- Agencies cannot effectively ensure security of infrastructure because they do not control it
  - VITA & NG control infrastructure

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## Contract Places Additional Limits on Ability of Agencies to Ensure Adequate IT Security

- NG's contractual performance measures do not account for security of **individual** agencies
  - Performance measures are at State or “enterprise” level, not agency level
- Agencies unable to get information from VITA needed to assess NG's security in a timely manner
- Federal government could limit access to mission-critical federal data if information not available
  - Federal agencies hold agencies, not VITA or NG, directly accountable for security (IRS, Social Security)
  - DSS waited 1 year for VITA response to federal audit

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# CIO's Role in Ensuring IT Security Needs To Be Clarified

- CIO's statutory responsibilities largely involve policymaking & oversight
- CIO has no clear, direct responsibility for IT security
  - No responsibility to ensure security of infrastructure
- CIO ensures agencies develop security programs, but assessment of quality or effectiveness is limited
  - Role played by agency internal auditor is beneficial but only CIO has authority over infrastructure
- Result is potential IT security gaps
  - CIO provides limited assistance in helping agencies identify application vulnerabilities

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## Recommendation

- The General Assembly may wish to consider amending the *Code of Virginia* to assign the CIO direct responsibility for the security of the State's centralized IT infrastructure, and require the CIO to work in partnership with agencies to ensure overall security of IT systems and data, including both infrastructure and applications

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