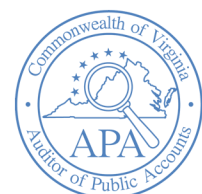




DEPARTMENT OF ALCOHOLIC BEVERAGE CONTROL

REPORT ON AUDIT FOR THE YEAR ENDED JUNE 30, 2016

Auditor of Public Accounts
Martha S. Mavredes, CPA
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AUDIT SUMMARY

Our audit of the Department of Alcoholic Beverage Control (ABC) for the year ended June 30, 2016, found:

- the financial statements are presented fairly, in all material respects;
- internal control findings requiring management's attention; however, we do not consider them to be material weaknesses; and
- instances of noncompliance or other matters required to be reported under Government Auditing Standards.

Many of ABC's sensitive systems rely on technologies that run on software components that have reached their end-of-life. Outdated technologies increase risk to ABC's sensitive systems because they no longer receive patches for known security vulnerabilities and malicious attackers can exploit the vulnerabilities, leading to a data breach.

Over the past 10 years, ABC's information technology related position growth and investment has not kept pace with its revenue and profit growth. This suggests that ABC may have avoided or delayed updating the technologies that support sensitive systems to achieve the profit levels mandated in the Appropriations Act. We recommend ABC develop a sound and practical implementation strategy to modernize its technologies and work with the Governor and General Assembly to secure funding to pay for these efforts.

We have audited the basic financial statements of the Department of Alcoholic Beverage Control as of and for the year ended June 30, 2016, and issued our report thereon, dated October 3, 2016. Our report is included in the ABC's Annual Report that it anticipates releasing in December 2016.

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INTERNAL CONTROL AND COMPLIANCE FINDINGS AND RECOMMENDATIONS

Develop and Adopt a Comprehensive IT Strategic Plan to Modernize Systems

Background and Analysis

ABC has classified many of their systems as sensitive, either due to the nature of the data or because the system supports a significant business process, such as finance and sales, inventory and logistics, and enforcement. A sensitive classification indicates the need for strong security controls and the Commonwealth's Information Security Standard, SEC 501-09, provides the minimum requirements that agencies must meet, including that all system's run on current and supported technologies. Outdated and unsupported technologies, commonly referred to as end-of-life technologies, increase risk to sensitive systems because they no longer receive patches for known security vulnerabilities and a malicious attacker could exploit the vulnerabilities leading to a data breach. Additionally, vendors do not offer operational and technical support for end-of-life technologies, which effects data availability by increasing the difficulty of restoring system functionality if a technical failure occurs.

During the audit we selected ten systems to review and found that all but one system relied on one or more software components that has reached its end-of-life. In addition, there are multiple end-of-life server operating systems that support these applications. The Commonwealth's Information Technology (IT) Infrastructure Partnership with Northrop Grumman (Partnership) provides the maintenance, operation, and support for ABC's server operating systems; however, due to the age of ABC's applications, they will not run on current server operating systems. Therefore, the Partnership cannot upgrade the server operating systems until ABC upgrades their application software components.

Systems can become outdated because the agency does not have sufficient financial or human resources to do the work. We analyzed the relationship between ABC's revenue, profits transferred to the general fund of the Commonwealth, and growth in IT personnel and investment over the past 10 years and found that IT position growth and investment has not kept pace with ABC's revenue and profit growth. This suggests that ABC may have avoided updating its technologies in order to achieve expected profit levels.

To further explore why ABC's sensitive systems have reached end-of-life and to understand what ABC plans for the future, we examined two areas: (1) ABC's progress since forming an Advisory Committee as required by Chapter 665 of the 2015 Acts of Assembly, and (2) its Strategic Plan and IT Strategic Plan submitted to the Department of Planning and Budget (DPB) and the Virginia Information Technologies Agency (VITA), respectively, in support of its 2017-2018 budget request. ABC's Advisory Committee (Committee) is tasked with reviewing its progress in planning, financing, procuring, and implementing information technology systems necessary to sustain the department's business enterprise. The Committee has met three times since September 2015 and received briefings on six projects budgeted at \$24.7 million. The largest project, a new financial accounting system, was estimated to cost \$17 million and was budgeted for development during fiscal year

2016, but this did not occur. After initially choosing PeopleSoft for its system, ABC decided that it would not be a fit for ABC's distribution and retail functions and cancelled its request for proposal (RFP). ABC is working again with Gartner to re-define its requirements and allow bids from hosted systems that were not allowed by VITA until recently. A date for issuing a new RFP has not been communicated to the Committee. Similarly, in May 2016 ABC issued a RFP for a new licensing system with an estimated cost of \$3.2 million and subsequently cancelled it in June 2016. A new RFP was issued later in the Summer of 2016 and it was also expanded to allow bids from vendors offering hosted systems.

Regarding ABC's Strategic Plan and IT Strategic Plan, we found that both plans acknowledge some of the outdated technologies, but neither lays out a clear course of action to rectify the situation, such as describing the order and timeline for upgrading components. The Strategic Plan noted the need to meet Commonwealth security standards, but left the section titled "Estimate of Technology Funding Needs" blank, suggesting that upgrades and replacements can be achieved through ABC's normal operating budget.

In July 2016, we met with the Interim Chief Information Officer (CIO) to discuss the strategic plans, but he was unfamiliar with them since they were prepared before he started working at ABC. The Interim CIO acknowledged the end-of-life components and discussed several changes he has recently implemented to better use the existing IT resources and refocus the agency on implementing solutions. He verbally laid out plans to: minimize the support of and changes to systems that will be replaced in the near future; enforce strong change controls to prevent IT resources from being directed away from work on important tasks; assess ABC's IT resources (including contractor's) to determine what skill sets they have and what skills are needed; and, prioritize what systems to upgrade or replace and ensure the replacement occurs in a deliberate and strategic fashion since many systems interface and are co-dependent.

Finding and Recommendation

As noted in the Background and Analysis section we found that ABC operates many systems that rely on software components that have reached their end-of-life and represent significant risk to ABC's operations. In addition, there are multiple end-of-life server operating systems that support these applications.

Addressing this issue so ABC's sensitive systems remain secure will require:

- 1) Strong IT leadership;
- 2) Knowledge of ABC's distribution and retail operations sufficient to develop a sound and practical implementation strategy;
- 3) A sizable funding commitment to pay for the initial systems replacements; and,
- 4) IT operating budget increases to pay for the on-going maintenance required to keep systems current.

As a significant contributor to the Commonwealth's general fund, the Governor and legislature expects ABC to contribute a certain level of profits annually. If the general fund cannot accept reduced profits to pay for ABC's modernization needs, ABC will need to find other financing alternatives, such as reducing operating costs in other areas to offset the increased investment in technology or software-as-a service. In addition, ABC should improve its use of the leaders and experts who comprise the Advisory Committee for the planning, financing, procuring, and implementing of modern systems. Thus far the Committee has only received status updates, but has not been asked to actively participate in guiding ABC or brainstorming solutions.

Improve Web Application Security

ABC does not secure the agency's website with some of the minimum security controls required by the Commonwealth's Information Security Standard, SEC 501-09 (Security Standard). Their new website allows citizens to purchase alcohol products, apply for an alcohol license, and review store and product information.

We addressed specific control weaknesses to management in a separate document marked Freedom of Information Act Exempt (FOIAE) under Section 2.2-3705.2 of the Code of Virginia due to it containing descriptions of security mechanisms. The Security Standard requires agencies to implement specific controls to reduce unnecessary risk to data confidentiality, integrity, and availability.

ABC should dedicate the necessary resources to implement the additional controls discussed in the communication marked FOIAE in accordance with the Security Standard in a timely manner.

Finalize Security Exception Requests for Unsupported Databases

ABC has sensitive systems running unsupported Oracle database versions and are not keeping these databases current in accordance with the Security Standard. ABC applied for exception requests with the Virginia Information Technologies Agency (VITA) to continue operating the databases; however, VITA did not approve the exception requests and required ABC to implement costly and time consuming mitigating controls.

Rather than spend the resources to implement the costly mitigating controls, ABC has plans to upgrade the unsupported databases by 2017. By operating the databases without an approved exception request from VITA, ABC does not have an independently verified and accepted compensating method to protect data confidentiality, integrity, and availability in the unsupported Oracle databases. Operating an unsupported database increases the risk of a data breach through an attack that exploits known vulnerabilities in an unpatched or outdated system.

ABC also has plans to replace the unsupported systems with a new enterprise resource planning system, but the timeframe to implement a new ERP system will take several years. For this reason, ABC has decided to upgrade the databases to supported versions as a temporary stopgap measure to bring the agency into compliance with the Security Standard.

ABC should prioritize the upgrade efforts to ensure the database versions are running secure technology to ensure the confidentiality, integrity, and availability of sensitive data. ABC should also determine the long term viability of the systems they are upgrading and include replacements or future upgrades in their IT strategic plan.

Improve Wireless Local Area Network Security

ABC does not secure wireless local area networks (WLAN) with some of the minimum security controls required by the Security Standard. ABC received an exemption from VITA to manage and maintain their own wireless network to support key business operations.

We addressed specific control weaknesses to management in a separate document marked Freedom of Information Act Exempt (FOIAE) under Section 2.2-3705.2 of the Code of Virginia due to it containing descriptions of security mechanisms. The Security Standard requires agencies to implement specific controls to reduce unnecessary risk to data confidentiality, integrity, and availability.

ABC should dedicate the necessary resources to implement the additional controls discussed in the communication marked FOIAE in accordance with the Security Standard in a timely manner.



Martha S. Mavredes, CPA
Auditor of Public Accounts

Commonwealth of Virginia

Auditor of Public Accounts

P.O. Box 1295
Richmond, Virginia 23218

October 3, 2016

The Honorable Terence R. McAuliffe
Governor of Virginia

The Honorable Robert D. Orrock, Sr.
Chairman, Joint Legislative Audit
And Review Commission

Alcoholic Beverage Control Board
Department of Alcoholic Beverage Control

INDEPENDENT AUDITOR'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING AND ON COMPLIANCE AND OTHER MATTERS

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in Government Auditing Standards, issued by the Comptroller General of the United States, the financial statements of the **Department of Alcoholic Beverage Control (ABC)** as of and for the year ended June 30, 2016, and the related notes to the financial statements, which collectively comprise ABC's basic financial statements, and have issued our report thereon dated October 3, 2016.

Internal Control Over Financial Reporting

In planning and performing our audit of the financial statements, we considered ABC's internal control over financial reporting to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of ABC's internal control over financial reporting. Accordingly, we do not express an opinion on the effectiveness of ABC's internal control over financial reporting.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct misstatements on a timely basis. A material weakness is a deficiency, or a combination of deficiencies, in internal control such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. A significant deficiency is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control over financial reporting was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control over financial reporting that might be material weaknesses or significant deficiencies and therefore, material weaknesses or significant deficiencies may exist that were not identified. Given these limitations, during our audit we did not identify any deficiencies in internal control over financial reporting that we consider to be material weaknesses. We did identify certain deficiencies in internal control over financial reporting entitled "Develop and Adopt a Comprehensive IT Strategic Plan to Modernize Systems," "Improve Web Application Security," "Finalize Security Exception Requests for Unsupported Databases," and "Improve Wireless Local Area Network Security," which are described in the section titled "Internal Control and Compliance Findings and Recommendations," that we consider to be significant deficiencies.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the ABC's financial statements are free of material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit and, accordingly, we do not express such an opinion. The results of our tests disclosed instances of noncompliance or other matters that are required to be reported under Government Auditing Standards and which are described in the section titled "Internal Control and Compliance Findings and Recommendations" in the findings entitled "Develop and Adopt a Comprehensive IT Strategic Plan to Modernize Systems," "Improve Web Application Security," "Finalize Security Exception Requests for Unsupported Databases," and "Improve Wireless Local Area Network Security."

ABC's Response to Findings

We discussed this report with management at an exit conference held on October 26, 2016. ABC's response to the findings identified in our audit is described in the accompanying section titled "Agency Response." ABC's response was not subjected to the auditing procedures applied in the audit of the financial statements and, accordingly, we express no opinion on it.

Status of Prior Findings

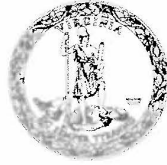
ABC has not taken adequate corrective action with respect to the previously reported findings “Improve Web Application Security” and “Finalize Security Exception Requests for Unsupported Databases.” Accordingly, we included these findings in the section entitled “Internal Control and Compliance Findings and Recommendations.” ABC has taken adequate corrective action with respect to audit findings reported in the prior year that are not repeated in this report.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the entity’s internal control or on compliance. This report is an integral part of an audit performed in accordance with Government Audit Standards in considering the entity’s internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

AUDITOR OF PUBLIC ACCOUNTS

KKH/clj



COMMONWEALTH of VIRGINIA

Department of Alcoholic Beverage Control

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November 9, 2016

Ms. Martha Mavredes, CPA
Auditor of Public Accounts
101 N. 14th Street
Richmond, VA 23219

Dear Ms. Mavredes,

Attached are the Department of Alcoholic Beverage Control's (ABC) responses to the audit for the fiscal year ended June 30, 2016. As always, the Department appreciates your staff and their professionalism and diligence in assisting our Leadership Team in identifying opportunities for improvement in our internal control framework. Our responses to the findings in the Report on Internal Controls follow.

Develop and Adopt a Comprehensive IT Strategic Plan to Modernize Systems

ABC agrees that Information Technology (IT) growth in headcount and compensation has not kept pace with the margin and revenue growth of ABC over the past 9 years. ABC would also point out that the profit presented does not include significant expenses beyond ABC's control such as: ABC's general fund contribution obligations, which increased 208.9 percent in the same period; increased retirement contributions and pay increases; and charges levied by other state agencies for system use or project work. More impactful, as technology becomes more central to how ABC conducts its business, both in e-Government initiatives and transactional efficiency, the IT investment deficit is even more significant.

ABC has already implemented changes to improve governance and transparency, particularly in project execution. Specifically, ABC has instituted:

- Weekly formal project progress monitoring and status communication
- Monthly formal IT SLA reporting
- A Project Steering Committee that meets weekly to:
 1. Gate-keep new projects

2. Approve project baseline changes
3. Prioritize projects

Recognizing that the state of systems and their general age is a major issue for ABC, ABC has set up a Program with VITA to modernize the majority of the IT landscape. The first component of this effort is replacing the core ERP, ABC's Performance financial management system, but it also recognizes that the new web site and licensing systems are also components of the same issue. The APA has correctly identified a major issue for ABC in system age, but the APA scope understates the operational risks to the business given current and imminent system obsolescence.

An ERP strategy has been developed laying out some fundamental building blocks for refreshing the entire portfolio of ABC, including a 5 year timeline. The IT Advisory Committee will play a fundamental role in guiding that program for ABC over the next 5 years.

Improve Web Application Security

ABC will dedicate the necessary resources to implement the additional controls discussed in the communication marked FOIAE in accordance with the Security Standard in a timely manner. To this end, the agency is actively reviewing, refining, and documenting several key processes such as project management, the system development life cycle, and the risk management program to improve the development and implementation of security requirements congruent with proactive risk decisions.

ABC agrees that we need formal processes and documented standards, particularly for the purpose of verifying the efficacy of security controls. IT continues to review and document processes and standards as resource availability permits.

Finalize Security Exception Requests for Unsupported Databases

ABC has two applications currently running on of end of life database servers. Upgrade projects for both of those applications are currently underway and on target to complete in February 2017. The upgraded applications will run on currently supported database versions and the exception will no longer be needed. Therefore, given the short time frame until compliance, ABC will not continue to pursue approval for the security exceptions. ABC has instituted mitigating controls over those systems and databases and has purchased breach insurance.

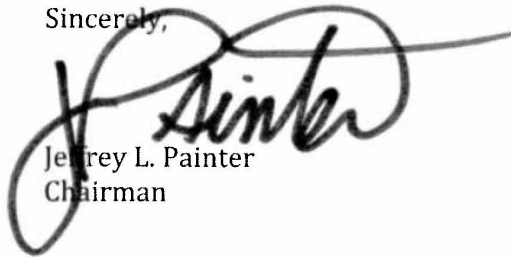
Improve Wireless Local Area Network Security

ABC is in the process of re-writing all Information Security Policies, to include the proper management and use of the wireless local area network. The current published policy does include all relevant controls addressing wireless networks per the current Commonwealth Information Security Standard, SEC501-

09. An effort to document all IT Operational Procedures is also underway and is being addressed as resource availability permits.

The agency is currently remediating the issues identified, assuming no negative operational impact to authorized devices or users. The agency expects to complete this remediation effort by the end of calendar year 2016 without issue. If for any reason the remediation cannot be completed, the agency will submit the necessary security exception to Commonwealth Security Risk Management (CSRM).

Sincerely,

A handwritten signature in black ink, appearing to read "J. Painter", with a large, stylized flourish extending from the end of the signature.

Jeffrey L. Painter
Chairman

DEPARTMENT OF ALCOHOLIC BEVERAGE CONTROL

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