Office of the New York State Comptroller

Division of Local Government
& School Accountability

Cayuga County Community College

Information Technology

Report of Examination

Period Covered:

September 1, 2011 — August 27, 2013

2013M-291

Thomas P. DiNapoli

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State of New York
Office of the State Comptroller

Division of Local Government
and School Accountability

March 2014

Dear Community College Officials:

A top priority of the Office of the State Comptroller is to help community college officials manage their colleges efficiently and effectively and, by so doing, provide accountability for tax dollars spent to support college operations. The Comptroller oversees the fiscal affairs of community colleges statewide, as well as compliance with relevant statutes and observance of good business practices. This fiscal oversight is accomplished, in part, through our audits, which identify opportunities for improving operations and Board of Trustees governance. Audits also can identify strategies to reduce costs and to strengthen controls intended to safeguard community college assets.

Following is a report of our audit of the Cayuga County Community College, entitled Information Technology. This audit was conducted pursuant to Article V, Section 1 of the State Constitution and the State Comptroller's authority as set forth in Article 3 of the General Municipal Law.

This audit's results and recommendations are resources for community college officials to use in effectively managing operations and in meeting the expectations of their constituents. If you have questions about this report, please feel free to contact the local regional office for your county, as listed at the end of this report.

Respectfully submitted,

Office of the State Comptroller
Division of Local Government
and School Accountability

Introduction

Background

The Cayuga County Community College (College) is sponsored by Cayuga County. The College operates two campuses: the Auburn campus and a campus in Fulton which serves residents of Oswego County and surrounding areas. The College is a part of the State University of New York system, and is governed by a 10-member Board of Trustees (Board) which is composed of nine appointed members and a student trustee. The Board is responsible for the general management and control of the College's financial and educational affairs. The President of the College is the College's chief executive officer and the Vice President for Administrative Services/Treasurer is the College's chief fiscal officer. Under the direction of the Board, these individuals are responsible, along with other administrative staff, for the day-to-day management of the College.

The College has an information technology (IT) department, which is headed by the Dean of IT (Dean). The Dean is responsible for overseeing the College's daily IT operations and functions, including supervising IT department staff. To assist the Dean with his responsibilities, the College also employs a Director of IT and a Manager of Network Operations/System Administrator. Between both campuses, the College has approximately 1,200 computers. IT budgeted appropriations for the 2013-14 fiscal year are approximately $1.2 million.

Objective

The objective of our audit was to assess the College's internal controls over IT. Our audit addressed the following related question:

- Have College officials properly safeguarded IT assets?

Scope and Methodology

We examined the College's IT operations for the period September 1, 2011 through August 27, 2013. Because of the sensitivity of some of this information, certain vulnerabilities are not discussed in this report but have been communicated confidentially to College officials so they could take corrective action.

We conducted our audit in accordance with generally accepted government auditing standards (GAGAS). More information on such standards and the methodology used in performing this audit is included in Appendix B of this report.

Comments of College Officials and Corrective Action

The results of our audit and recommendations have been discussed with College officials and their comments, which appear in Appendix A, have been considered in preparing this report.

College officials generally agreed with our recommendations and indicated that they plan to initiate corrective action.

The Board has the responsibility to initiate corrective action. A written corrective action plan (CAP) that addresses the findings and recommendations in this report should be prepared and forwarded to our office within 90 days, pursuant to Section 35 of the General Municipal Law. For more information on preparing and filing your CAP, please refer to our brochure, *Responding to an OSC Audit Report,* which you received with the draft audit report. We encourage the Board to make this plan available for public review in the Secretary to the Board's office.

Information Technology

Proper internal controls over IT include ensuring that IT assets, hardware and software are safeguarded. Software assets have become increasingly important to organizations. Not only are they a vital element of IT services that enable business-critical processes, but they also represent a large portion of IT costs. Therefore, organizations need to have an understanding of the software they own, how it is used and how best to track user rights to ensure licensing compliance.

We found weaknesses in the College's internal controls over IT assets. College officials do not maintain a complete and comprehensive software inventory list that contains all software that the College currently owns and has installed on its computers.[1] In addition, the College does not regularly monitor or review its computers to ensure that all software installed is approved and legally obtained. Further, the College could not provide supporting documentation for five software programs installed on College computers. We found that one of 36 computers reviewed contained gaming and instant messaging software. The installation of inappropriate or unlicensed software may also be exposing College computers to unnecessary risk, such as hacking or other malicious events.

Software Inventory

The purpose of a software license is to grant an end user permission to use one or more copies of software in ways where such a use would otherwise potentially constitute copyright infringement of the software owner's exclusive rights under copyright law. When a software package is sold, it is generally accompanied by a license from the manufacturer that authorizes the purchaser to use a certain number of copies of the software. Organizations must obtain licenses commensurate with the number of copies in use. The implementation of a complete and comprehensive software inventory list is crucial to safeguard IT assets from potential unlicensed software being installed on computers. As a best practice, the list should include all College-owned software installed on computers and the number of copies currently in use. Furthermore, the list should be used in regularly reviewing all computers owned by the College to ensure that all software installed is properly approved and licensed.

[1] The term computer includes desktops and laptops, running on both Windows and Macintosh platforms.

We found that the College does not have a complete, centralized and up-to-date inventory record of software that the College currently owns. However, upon specific requests, the College was able to provide records and information for most of the software that would have been included on such an inventory list.[2]

In addition, we found no evidence that the College effectively performed regular audits of software installed on machines. The College uses inventory management software to maintain a log of the software installed on each machine and has developed an in-house automated tool to aid in monitoring licenses. Although the inventory software can generate a report based on a specific computer or application to determine what an individual computer has installed on it, or which computers an individual application is installed on, the College does not use these available reports. Additionally, there is no formalized plan to review machines for installed software. IT personnel do not regularly review software installed on machines and instead rely heavily on individual department management to monitor employees' computer use and periodically review installed programs on computers in their respective departments. The reliance on this practice, in conjunction with an incomplete inventory list, does not provide the IT department with assurance that all software is authorized and properly licensed.

Because the College does not maintain a complete, comprehensive and centralized list of software installed on machines and perform regular, formal reviews of College computers, there is an increased risk of unauthorized software being installed and not detected.

Software Management

The College developed an acceptable use policy to provide employees with guidelines for IT asset use and security. Specifically, employees are allowed limited incidental[3] personal use not otherwise prohibited by this policy. Such personal use must be appropriate, and it must not violate the law, interfere with the employee's work responsibilities or conflict with the College's mission. Furthermore, the College prohibits the installation of software on computers without the consent of the IT department, including engaging in copyright infringement or other unauthorized downloading, copying and/or distribution of copyrighted material.

To determine if installed software was authorized, had valid licenses when required, was for a legitimate business purpose and

[2] See "Software Management" section for more information.
[3] Typically during authorized break periods

was in compliance with the College's acceptable use policy, we selected 36 computers for review. Of the 36 computers[4] reviewed, we identified approximately 1,200 software installations,[5] of which 141 installations required licensing. We requested purchase orders[6] and license agrements to verify that the College had proper licensing to cover all copies of software installed on the computers reviewed. The College could not provide purchase orders or other supporting documentation for five installed software programs that required licensing.[7] We found these programs to serve a legitimate business purpose; however, without proper documentation, the College cannot ensure that the software programs were authorized by IT management and licenses were obtained legally as required by the College's acceptable use policy. In addition, on one computer used by a staff member, we found seven gaming programs and one instant messaging program that are not reasonable for academic or business purposes. Based on the nature of these programs, they do not serve a legitimate work-related purpose and are in violation of the College's policy. Furthermore, non-College related programs may interfere with employees' work responsibilities.

By not performing regular reviews of College computers, the installation of software that is not appropriate for a business or academic purpose was not identified and a violation of the College's acceptable use policy went undetected. In addition, potentially unauthorized software and/or software that serves uses not proper in relation to College business purposes may increase the risk that unauthorized access or modification to the computer system environment may occur and go undetected, and the individual computer or network may be exposed to harmful events.

Recommendations

1. The College should maintain a complete, comprehensive software inventory list of all software that the College owns.

2. The College should formalize a policy to perform reviews of College computers and compare results to the College's software inventory list.

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[4] See Appendix B for more information.

[5] A portion of these installations include upgrades and components of larger software programs.

[6] An effective and efficient method for purchasing and accounting for software licenses is through a purchase order system. A purchase order serves as the source document for vendor payment claims for various licenses obtained by the College, and provides a record of licenses on hand to avoid duplicate purchases.

[7] According to IT management, the College no longer retained the purchase orders for these programs because the software was old.

3. All software licenses should be accounted for by purchase orders, license agreements or other supporting documentation which shows the number of licenses for each software item or package purchased.

4. The College should monitor users to ensure compliance with the acceptable use policy.

APPENDIX A

RESPONSE FROM COLLEGE OFFICIALS

The College officials' response to this audit can be found on the following page.

Edward V. Grant, Jr.
Chief Examiner
Division of Local Government and School Accountability
State of New York
Office of the State Comptroller

Dear Mr. Grant,

This is to inform you that we have completed our review of the preliminary draft findings (2014M-291) referenced in your memo from February 4, 2014, and Dean John Taylor confirms that we agree with the findings and feel that the recommendations made are appropriate. We are also in receipt of the IT letter and agree with the findings therein as well.

We very much appreciate the opportunity this audit has given us to help improve our Information Security and Information Technology operations. Dean Taylor was very pleased with your team's thoroughness and professionalism throughout the audit process, and we look forward to receiving your final report.

Sincerely,

Dr. Gregory T. DeCinque
Interim President
Cayuga Community College

cc: John Taylor, Dean of Information Technology, Cayuga Community College
Diane Hutchinson, Vice President of Administration and Treasurer, Cayuga Community College
Jeffrey Edwards, Chair of the Board of Trustees, Cayuga Community College

APPENDIX B

AUDIT METHODOLOGY AND STANDARDS

The objective of our audit was to determine if College officials provided adequate oversight of the College's IT operations in order to ensure IT assets were properly safeguarded. To accomplish our objective, we reviewed IT controls and processes for the period September 1, 2011 through August 27, 2013. To achieve the objective of this audit and obtain valid audit evidence, we performed the following audit procedures:

- We interviewed College officials and staff and reviewed IT policies and procedures to determine the internal controls in place.

- We obtained a computer inventory list for each campus from IT staff sorted by end user (i.e., students, faculty/staff). From the inventory lists, we randomly selected 36 College-owned computers for review: 25 faculty/staff and three student computers were selected at the Auburn campus, and five faculty/staff and three student computers were selected at the Fulton campus. We used specialized audit software to obtain a list of all software installed on each machine. We reviewed the installations for licensing requirements and determined if they served a legitimate business purpose.

- We reviewed the provided software inventory list, license agreements and purchase orders to determine if the College has authorized all software and whether they maintain proper licensing for the software installed on each of the machines reviewed.

We conducted this performance audit in accordance with GAGAS. 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 objective. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective.

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