Office of Internal Audit

Performance Audit 17-08: Software Licenses

November 2017

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OFFICE OF INTERNAL AUDIT
Stan Sewell, City Auditor

November 8, 2017

To: Mayor Andy Berke
        City Council Members

Subject: Software Licenses Audit (Report #17-08)

Dear Mayor Berke and City Council Members:

The attached report contains the results of our audit of software licenses. Our audit found that the City's software license management program needs improvement. In order to address the noted areas for improvement, we recommended actions to organize and expand policies and procedures, create and maintain an inventory of software and licenses, and to periodically audit compliance with software licenses.

We thank the management and staff of the Department of Information Technology for their cooperation and assistance during this audit.

Sincerely,

Stan Sewell, CPA, CGFM, CFE
City Auditor

Attachment

cc: Audit Committee Members
        Jim Arnette, Tennessee Local Government Audit
        Stacy Richardson, Chief of Staff
        Maura Sullivan, Chief Operating Officer
        Brent Messer, Chief Information Officer
        Daisy Madison, Chief Financial Officer

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AUDIT PURPOSE

This audit was conducted in accordance with the Office of Internal Audit's 2017 Audit Agenda. The objective of this audit was to determine if the City of Chattanooga has an adequate process to track and monitor software, licenses, compliance and usage.

BACKGROUND

Software is a general term for the programs used to operate an organization's computers and is critical for business efficiency. It is a comprehensive term that is used in contrast to hardware (the tangible parts of the computer).

Organizations can develop software internally or buy software solutions for their operations. As a general rule, when you purchase software, you are obtaining a license to use it. You do not own the software.

A software license is an agreement setting forth how software can be used or redistributed by the licensee, typically the end-user. Software is copyright protected and you are purchasing the rights to use the software. The license simply covers what you can and can't do with the software. For example, the license, among other things, will include how many copies are allowed, where the software can be installed, who can use it and for what purpose.

Due to the risk of non-compliance with software licenses, damaging software installations, and potential underutilization of applications, software management is a critical issue for any organization. The City's Department of Information Technology (DIT) has primary responsibility for overseeing the City's technology program, including software management. Among other duties, DIT is responsible for software purchase approval and maintaining a central technology inventory system.[1]

Software non-compliance can result in serious and expensive consequences for organizations. For example, in March 2017 the City of Denver settled for around $3 million to correct their software

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[1] City of Chattanooga Technology Use Policy, Effective April 6, 2015, Revised June 30, 2017.

license count with Oracle.[2] Currently, Louisville Metro Government is in a dispute with Microsoft whether some employees were illegally using their software.[3]

Statistical Information

The City of Chattanooga currently has around 1,900 computers connected to the network. In addition, there are approximately 2,300 email addresses assigned to city personnel.

The number of software programs on each computer varies, but usually include an operating system, web browser, antivirus, adobe pdf and an office program including a word processor, spreadsheet, etc. Computers also typically have software applications that perform specific tasks related to their department's responsibilities such as financial management, property taxes, fleet and property management.

FINDINGS AND RECOMMENDATIONS

Improve Software License Management

Software license management is an important issue for organizations because of copyright laws, monitoring by software vendors, government regulations and alliances, such as the Software Alliance (BSA), a nonprofit trade association that acts as the industry watchdog. There is a risk for not being compliant with software licenses agreements, as well as purchasing unnecessary software and the underutilization of software. Additionally, there is a risk of unauthorized software being used.

We found the City's oversight, performance and control of the software licenses was informal and based primarily on institutional knowledge of the technology staff. In order to improve the management of the City's software usage and to mitigate risk, we identified solutions to track and monitor software, licenses, compliance and usage. The solutions include:

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[2] Maas, Brian, March 22, 2017 (Denver CBS4), http://denver.cbslocal.com/2017/03/22/denver-admits-software-licensing-violations-taxpayers-will-pay-millions/.

[3] Bailey, Phillip M., September 25, 2017 (USA Today), https://www.usatoday.com/story/news/politics/metro-government/2017/09/25/louisville-software-piracy-dispute-microsoft/686152001/.

Organize and Expand Policies and Procedures

We found the existing policies and procedures related to the City's software license management were fragmented and not comprehensive. For example, users are not restricted from downloading or installing software.

The City's policies and procedures related to purchasing, installing, managing and disposing of software are piecemeal and disconnected. They are located in different city policies covering procurement, technology use and property disposition policies. Disjointed policies make it difficult for employees to have a complete and clear understanding of software policies and procedures. Establishing complete and cohesive policies and procedures is a vital part of the software management process. The Software Alliance (BSA) has an excellent sample policy on its website which covers general responsibilities, the software management process, procurement and installation procedures, as well as how the policy will be communicated.

The Software Alliance's (BSA) *Software Asset Management Guide* and *Government Guide of Software Asset Management* provide guidance for managing the lifecycle of software assets within an organization. Both guides emphasize developing and communicating a clear statement of software policy.

Recommendation 1:

We recommend the Department of Information Technology (DIT) organize and expand written policies and procedures for the management of software and licenses. After issuance of the policies and procedures, DIT should provide suitable training to City Employees.

Auditee Response: *We concur with the audit finding and recommendation.*

Inventory of Software and Licenses

We determined the City does not have an inventory of installed software and related licenses. The Software Alliance stresses the importance of taking an inventory of all software assets. Before you can adequately manage your software licenses, you need to know what you have.

Recommendation 2:

We recommend the Department of Information Technology create and maintain a citywide inventory of installed software and licenses.

Auditee Response: *We concur with the audit finding and recommendation.*

Software Licensing Audit

We determined the Department of Information Technology does not audit compliance with software licenses through examination of the City's computers. The Software Alliance indicates an Effective Software Asset Management Program includes matching installed software to licensing documentation.[4] The results of the audit will determine if you are compliant and if you are under-licensed or over-licensed.

Recommendation 3:

We recommend the Department of Information Technology periodically audit compliance with software licenses through examination of the City's computers. This may be accomplished with an automated software package, internally developed code, or periodic sample testing by designated DIT personnel.

Auditee Response: *We concur with the audit finding and recommendation.*

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[4] Business Software Alliance, *Business Advisor Series – Software Asset Management*, http://www.bsa.org/country/~/media/Files/Tools_And_Resources/Guides/SoftwareManagementGuide/2009/SAM_en.ashx.

APPENDIX A: SCOPE, METHODOLOGY AND STANDARDS

Based on the work performed during the preliminary survey and the assessment of risk, the audit covers software licenses from October 1, 2016 to September 30, 2017. When appropriate, the scope was expanded to meet the audit objectives. Source documentation was obtained from the Department of Information Technology. Original records as well as copies were used as evidence and verified through physical examination.

To evaluate the software license process, we conducted interviews and communicated with department personnel and reviewed available documentation. We also reviewed applicable guidelines, and existing policies and procedures related to software licenses.

To develop our recommendations, we reviewed industry best practice documents and discussed ideas with Department of Information Technology employees.

We conducted this performance audit from September 2017 to October 13, 2017 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.

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