

**REDACTED PURSUANT TO CODE OF VIRGINIA
SECTION 2.2-3705.2(2)&(14) (IT SYSTEMS SECURITY)**

Internal Audit Report on Telecommunications and Inter-Departmental Billings

County of Henrico



*Proud of our progress;
Excited about our future*

**Internal Audit Report #269
March 15, 2019**

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Internal Audit Report on Telecommunications and Inter-Departmental Billings



Report #269
March 15, 2019

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Audit Summary

- Scheduled Audit
- Conclusions on Audit Objectives – See slide 15
- Exception Oriented
- 3 reportable Issues and 5 Other Observations
- Management Action Plans have been developed to address all risks identified.


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Contents

- Introduction and Background
- Scope, Internal Controls, and Methodology
- Conclusions on Audit Objectives
- Issues and Management Action Plans
- Closing and Report Distribution




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Introduction

- IT Auditor III, Sharon Thornton, performed audit work
- Used professional auditing standards
- Examined controls & tested for selective compliance
- All exceptions given to Agency
- Reported control design issues & significant test exceptions
- Work for same Government we audit



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Background

Information Technology is responsible for managing most aspects of telecommunications:

- wireless phone purchases
- landline installations
- wireless, landline, and pager inventories
- paying most of the associated bills
- distributing the agencies' portions of the costs to their accounts

There are some Agencies that manage their own Telecomm.

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Background - Systems

- manage wireless and pager inventories
- import bills
- maintain G/L cost centers associated with each line
- produce journal entries to be posted by Accounting

Scheduled to be replaced in Spring 2019.

Phone System Appliance used to:

- manage VOIP landlines and voicemail-only numbers
- assign/track the numbers of all landline phones by associated departments and assigned staff


The landline inventory has been pulled from it through SQL Scripts.

is being developed with a completion date expected in Spring 2019. This system will take some of the load off of especially related to the inventory reporting.

Landline bills are accessible through the Verizon website.

– a tool used for call detail records retention and for automated distribution of monthly call reports to agencies.

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Background - Landline

Below is an excerpt of the largest device counts of landline/lines of service:

Total landline/lines of service	4899
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Source: IT – FY19 [REDACTED] Inventory

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Background – Wireless and Pagers

Wireless Type	Count
Temporary Loaner Phones <small>(Rec and Parks summer program, Registrar election phones)</small>	177
Basic Cell Phones	172
Smart Phones	851
EVDO <small>(modems)</small>	638
Total wireless devices/lines of service	1873
Pagers	76

Source: FY19 Wireless Inventory

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Background – Inventories and Moneygrab

Inventories for wireless, pagers, and landlines are sent to departments in June to update and return.

The final inventories are used as the basis for the “Moneygrab” in July where IT collects an estimated annual charge from the agencies to off-set the cost of the bills that IT will pay throughout that fiscal year.

In the final inventories for 2017-2018, the projected yearly telecommunication costs were:

Wireless \$794,494
Landline \$669,516

Each month, the departments receive notifications for wireless of differences between the estimated monthly allocation of the “Moneygrab” and actual costs as well as changes and refunds.

A Finance credit card is used to auto-pay the monthly landline bills to ensure timely payment. Information Technology assumes the landline cost for agencies at the Western Government Center but distributes costs to “off-campus” departments.

Pagers are paid at the time of the “Moneygrab” and only changes or refunds would occur in the following months.

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Background – Equipment

Work Orders or KACE tickets are used for equipment requests. Equipment may include modems, lost pagers, accessories, data drops and data jacks, etc. The requesting departments are billed for actual costs.

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Audit Scope

In Scope:

- Information Technology (Telecommunications)
- Police (Telecommunications)
- Oracle "Moneygrab" and Billing Adjustments
 - Landlines
 - Wireless
 - Pagers
 - Work Orders & KACE
- Telecommunication Inventories
 - Landline
 - Wireless
 - Pagers
- Agency Billing Notifications
- [REDACTED]
- [REDACTED]




Out of Scope:

- All other agencies, divisions, departments
- All other processes and systems

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Internal Controls

Objectives

- Reliability and integrity of information
- Compliance with policies, procedures, laws and regulations
- Safeguarding of assets
- Effectiveness and efficiency of operations



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Internal Controls Cont'd

General Limitations of any Controls

- Errors and irregularities may go undetected
- Inherent limitations in any control structure which include resource constraints, legislative restrictions, etc.
- Projection to future subject to risk of change in effectiveness
- Compliance may deteriorate



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Audit Methodology






1. Evaluated internal control systems through completion of questionnaires
2. Validated answers to questionnaires by sample testing and securing evidence
3. Performed walkthroughs to obtain an understanding of the processes
4. Evaluated applicable regulations, policies & procedures and sample tested for compliance



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Conclusions on Audit Objectives

Objective	Conclusion
A. Assess the Telecommunications Inter-Departmental Billing procedures for VOIP, Mobile Devices, and EVDO (modems) and any other landlines and verify they are followed and functioning properly	 Issues 1, 2 002, 003, 004
B. Evaluate the process for disputed charges and proper settlement	
C. Assess that monthly adjustments are properly made	
D. Evaluate data integrity controls related to imports of Telecomm company data into in-house developed systems used to capture/allocate expenses to general ledger (GL) codes are functioning properly	 Issue 1
E. Determine that System and application-related controls are sufficient for the applications used in the process	 Issue 3 001, 005


Sufficient
 Needs Improvement
 Insufficient – Needs Immediate Attention

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Issues

1. Add Independent Review Controls for ADIs and Other Activity/Reconciliations
2. Provide Cross-Training for the Telecommunication Processes
3. Make Changes to ████████ Configuration for Automated Messages




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Other Observations

- OO1. Periodically Review Access to [REDACTED]
- OO2. Create Templates and Expand Procedures for Recurring Processes
- OO3. Standardize Protocols for Transferring Accounts
- OO4. Consider a Study of Landline Rates for Moneygrab
- OO5. Ensure the New VOIP Application is Fully Documented



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Issue 1

Add Independent Review Controls for ADIs and Other Activity/Reconciliations

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Issue 1


Condition

ADIs are spreadsheets containing accounting entries for posting to the General Ledger (GL). Currently, the ADIs prepared for the annual “Moneygrab” are only reviewed by the preparer prior to submission to Accounting for posting to the GL.

There were 10 ADIs for landline corrections, including 22 individual transactions, as a result of findings during the audit.

No errors were found in the wireless and pager ADIs.

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Issue 1

Condition Cont.

We also noted that only one individual has responsibility to:


- set up new accounts in Verizon system
- add the accounts to the Verizon Enterprise System for automatic recurring payments on a County credit card
- make changes to the credit card
- create the monthly ADIs to record the credit card charges on the GL
- create any correcting ADIs

All tasks are performed with lack of adequate oversight or review.

Effect

Errors can go undetected.

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Issue 1


Cause

Segregation of duties and review controls not considered during establishment of processes.

Criteria

Per good practice reference, Green Book Control Activities 10.3, “Segregation of duties – Management should divide or segregate key duties and responsibilities among different people to reduce the risk of error, misuse, or fraud. This includes separating the responsibilities for authorizing transactions, processing and recording them, reviewing the transactions, and handling any related assets so that no one individual controls all key aspects of a transaction or event”.

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Issue 1

Recommendation

1. Add a review step by someone other than the preparer of the ADIs for “MoneyGrabs” and error corrections since these are manual processes that are subject to human error.
2. Segregate duties between establishing of accounts, setting up accounts for automatic payment, and recording/reconciling activity; or, at a minimum, insert additional independent review in these processes.

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Issue 1

Management Action Plan

With a pending retirement, a position is being reclassified to Business Manager. The new Business Manager (recruiting to begin April 2019) will be tasked with more oversight of these sorts of transactions. It will be incumbent on that person to finalize the procedures within the Administrative section of the department, which will include “independent review of ADI’s and reconciliations.”


Furthermore, the department has already taken steps to work on mitigating these issues by securing all administrative procedures from General Services, and we plan to utilize these procedures as the basis by which our new procedures will be developed.

Finalization and implementation of the new procedures will be one of the first major tasks assigned to the new Business Manager.

By Whom: IT Director, Admin Staff, and Business Manager
When: June 28, 2019


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Issue 2

Provide Cross-Training for the Telecommunication Processes



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Issue 2

Condition

One individual performs the majority of the telecommunication billing processes and there has not been any cross-training. Others closest to the billing processes were unfamiliar with all the processes performed.

Therefore, there is no backup who could perform the monthly billing processes if the responsible individual was unexpectedly out for an extended period. In a previous experience, this individual was able to work from home for an extended time; however, this may not always be a viable option.

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Issue 2

Effect

If the current individual was not able to perform assigned duties for any reason, there would be no one to fill in.


Cause

Overlooked.

Criteria

Good business practices suggest employees should be cross-trained on different skill sets in the event that a key employee leaves unexpectedly.

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Issue 2

Recommendation

Implement cross-training on all telecommunication billing processes including the annual department inventory confirmations.

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Issue 2


Management Action Plan

In addition to the implementation of procedures in Issue 1, we plan to ensure that the new Business Manager is trained on Telecomm billing processes, even if the process and methodology change in the near future as a result of a reconfiguration of strategy and process for enterprise system billing to departments. Current backup Admin staff, are not sufficiently trained in all aspects of Oracle FINS to be able to complete the ADI's. Also, the department is already developing a software tool to replace the ██████ system, from which many of the current Telecomm inventories and billing processes originate. The new system will have the ability to run SQL queries against the ██████ ██████, providing real-time inventory data that is based from the actual phone system. There will no longer be any need for manual entries to be added/removed from ██████ system, which also will help mitigate inventory and subsequent billing errors.

By Whom: IT Director, Admin Staff, and Business Manager
When: June 28, 2019


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Issue 3

Make Changes to ██████████ Configuration for Automated Messages



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Issue 3

Condition

██████████ is a tool whose configuration provides for automated messaging of reports related to Voice-Over-IP (VOIP) landline long-distance calls. The configuration contains the departments and email contacts. We surveyed 5 departments and asked how they were using the reports contained in the messages. We found that there are currently some deficiencies in the configuration and the process as follows:

1. There is no tracking of failed emails. Unless a department notifies IT of a change to the recipient of the reports, there is no indication that the email delivery failed. Some departments indicated they have not received the emailed messages for over a year.

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Issue 3

Condition Cont.

2. Blank reports are generated when there are no long-distance calls. Some departments receive numerous emails for their divisions which contain blank PDFs.
3. The message in the generated emails only states, "This is an automated message" and "Do not reply to this email". There are no instructions to the recipients explaining what to do with the reports or what action is needed when the recipient leaves their position.

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Issue 3

Effect

- Some departments have not received these messages and monitoring reports for over a year because the original recipient has left the County.
- Some large departments find the emails to be a nuisance and an inefficient use of time because they are receiving numerous emails each month for multiple divisions which may contain attached PDF's with no contents (i.e., no long-distance calls).
- Some departments indicated they don't really know what to do with the reports.

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Issue 3

Cause

There are known flaws in the configuration for the messages being sent out. However, only limited changes can be made since it is a vendor product. As such, IT is unable to make changes to track failed emails or eliminate the blank reports.

Initially, Directors were notified that the reports should be used to manage phone usage by ensuring that personal long-distance calls do not become excessive, even though there is no cost for long-distance calls with the installation of VOIP. However, some departments have designated staff who receive these reports who may not have been in this position when these instructions were first communicated. Only limited instructions have been provided regarding required steps when intended report recipients change.

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Issue 3

Criteria

The County Manager provided a directive to manage personal long-distance usage.

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Issue 3

Recommendation

1. Address the messaging being sent out to more clearly identify the monitoring intent.
2. Send an email to all Directors reminding them of the intent of the messages and providing a link to phone help resources which should include instructions about informing IT of changes in report recipient email addresses (i.e. when contacts transfer or terminate).
3. Consider periodically confirming the list of recipients with department directors.

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Issue 3


Management Action Plan

We will comply to best of our ability. We would like to make caveat that [REDACTED] is a 3rd party system that is completely managed and run by outside agency. Ability to make changes to system, especially in regard to email notifications, may be limited.

Target date provided to have made contact with [REDACTED] to begin email “subject” suggestions. Also to send reminder email to department heads.

By Whom: IT Director, [REDACTED]
When: May 31, 2019


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Other Observations

The following slides include additional observations noted during our audit which were considered less critical in reaching our conclusions on the audit objectives.

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001

Periodically Review Access to [REDACTED]


There is no process to periodically review access to [REDACTED].

See slide 51 for related control improvement 1 implemented during the audit.

Recommendation

Implement a periodic review of the access to [REDACTED] to ensure only needed access is maintained.

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001

Management Action Plan

We will add requirement to [REDACTED] [REDACTED] [REDACTED] to add annual review of accounts with access to [REDACTED].

By Whom: [REDACTED] – IT Manager II
When: March 5, 2019

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002

Create Templates and Expand Procedures for Recurring Processes

Currently, the responsible individual writes the processes performed for each telecommunications billing cycle in notebooks. Most of these processes are repetitive with each billing cycle.

In addition, there are a few written desk procedures for the billing processes. While these documented steps generally outline what should be done for each billing, they do not fully define how the steps are executed so that they can be easily performed by someone in the event of the responsible individual's absence.

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002

Recommendation


To increase efficiency, create templates for the repeated processes in the billing cycles. These templates (or supplemental desk procedures):

- could have boxes that can be checked off and spaces for data that would need to be captured for each cycle.
- should provide enough instructions for someone filling in for the responsible individual to be able to follow the process.
- should be stored on a shared file where they can be accessed by someone other than the responsible individual when needed.

The completed templates should be saved with the date processed in the file name.

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002


Management Action Plan

See response to Issue #1. This will be incumbent on new Business Manager to help write, implement, and formalize many of the requested processes.

By Whom: IT Director, Admin Staff, Business Manager
When: June 28, 2019

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Standardize Protocols for Transferring Accounts 003


Management of Telecomm accounts is somewhat decentralized and there is no standardized protocol to ensure that all necessary steps are completed timely when establishing or transferring accounts at the County's Telecomm company.

In one instance, the bill related to a series of mobile accounts went 60 days past due when an agency worked with the Telecomm company to transfer accounts they managed to an account managed by IT.

When IT personnel realized they were now responsible for paying the bill, they did so quickly; but, the accurate GL entry to record the charge to the appropriate agency was not done for another two months.


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Recommendation 003

Develop a standard process outlining all necessary steps for transferring accounts. This process should identify the responsibilities of all parties involved.



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Management Action Plan

003

Management of wireless billing accounts is incumbent on the agency to manage. It is correct that account management is decentralized. IT does not have access to all wireless billing accounts. In the case mentioned, IT was unaware that the account was transferred to the IT account, because the originating agency made the switch directly with the provider. This activity is infrequent, and it is not clear if it was the result of miscommunication or oversight and no late payment penalty was applied to the account in question. We will address this situation with the new Business Manager. We do not see this as a high priority remediation; as other issues are of much higher precedence. It is our opinion that better communication between the originating agency and IT would have mitigated this issue before it became an issue. We will work to develop a process outlining steps.

By Whom: IT Director, Admin Staff, Business Manager

When: August 30, 2019

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Consider a Study of Landline Rates for Moneygrab

004

The IT Director mentioned that he has considered performing a study to determine the rates for the landline "Moneygrab" are reasonable. To date, there is no analysis that supports whether or not the current charges that are billed to departments are sufficient.

Recommendation

Internal Audit supports IT in performing a study to analyze the rates for the Landline "Moneygrab" and determine if any rate changes should be made.

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004

Management Action Plan

As noted, the IT Director is already considering a plan to change the rates and manner by which Telecomm charges are billed back to departments. We have begun discussions with Audit, Deputy County Manager – Administration, and OMB. This will be a project that we are *hoping* to have finalized and in place for next FY budget.

By Whom: IT Director
When: January 31, 2020

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005

Ensure the New VOIP Application is Fully Documented

The existing [REDACTED] Application used to execute the monthly billing processes is an old in-house developed system that has no system documentation. The programmer who built the system has since retired. While the remaining IT staff have learned enough about the system to keep it running for the monthly processes, they do not have full knowledge of the application and any system controls.

The project for development of the new VOIP [REDACTED] Application will begin in April 2019.

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005

Recommendation

Ensure complete documentation is part of the project plan for the new VOIP Application. Documentation should include the following:


Application Controls:

- Input
- Processing
- Output

System Controls:

- Security Access
- Backup and Recovery
- Segregation of Duties
- Change Management

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005

Management Action Plan

The new VOIP replacement [REDACTED] application will include all requested documentation.


By Whom: IT Director, [REDACTED]
When: May 31, 2019

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Control Improvements Implemented during the Audit

#	Control Weakness Observed	Control Improvement Implemented
C.1	The IT Director had access to [REDACTED] Super User responsibilities. In his current position, he no longer needs this level of access as he no longer actively supports the phone system.	IT Director's access was removed.




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Closing

- Appreciate Agency's cooperation
- Follow up on open Action Plans will be performed as completion dates are reached or after sufficient time has passed to ensure that actions taken are effective and ongoing.



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Report Distribution

Audit Committee (Mrs. O'Bannon, Mr. Thornton, County Manager)	Board of Supervisors, Non-Committee Members
Deputy County Manager for Administration	Director of Information Technology
Internal Audit Staff	

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