

Internal Audit Report on Oracle E-Business Change Control

County of Henrico



*Proud of our progress;
Excited about our future*

Internal Audit Report #240
August 8, 2013

HENRICO COUNTY INTERNAL AUDIT
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Internal Audit Report on Oracle E-Business _h_n_ Control



Report #240
August 8, 2013



Audit Summary

- Scheduled Audit
- Conclusions on Audit Objectives related to the Oracle E-Business System changes evaluated during this audit:

Objective	Conclusion	
	Update Project	County Cell Phone Deduction Project
A. Environment – Segregation and Access to Development, Test, Production	◆	◆
B. Project Methodology	▲	▲
C. Project Initiation	■	■
D. Project Testing	▲	■
E. Project Turnover to Production	■	■


■ Sufficient ▲ Needs Improvement ● Insufficient-Needs Immediate Attention ◆ Risk previously identified & accepted by management

- Exception Oriented
- 2 Reportable Issues and 2 Other Observations
- Management Action Plans have been developed to address all new 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: Oracle HRMS and Financials

Oracle E-Business Suite provides a complete suite of applications for Financial Management and Human Capital Management that capture, report and perform various finance and human resource transactions.

The County purchased the Oracle Financials and HRMS applications to support Finance, Human Resources, and Schools.

This is a Commercial Off-the-Shelf (COTS) Enterprise Resource Planning (ERP) system purchased from Oracle.

Source: System Assessment Sheet

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Background: Modules

The modules used within the System are:

- General Ledger
- Payables
- Receivables
- Purchasing
- Fixed Assets
- Core Human Resources
- IProcurement
- Public Sector Budget
- Oracle Advanced Benefits
- Oracle Time and Labor
- Transfer (IDT) Application
- Custom MAPS Apex Historical Applications


Source: System Assessment Sheet

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Background: Oracle E-Business Suite Environment

Current Versions



Source: System Assessment Sheet

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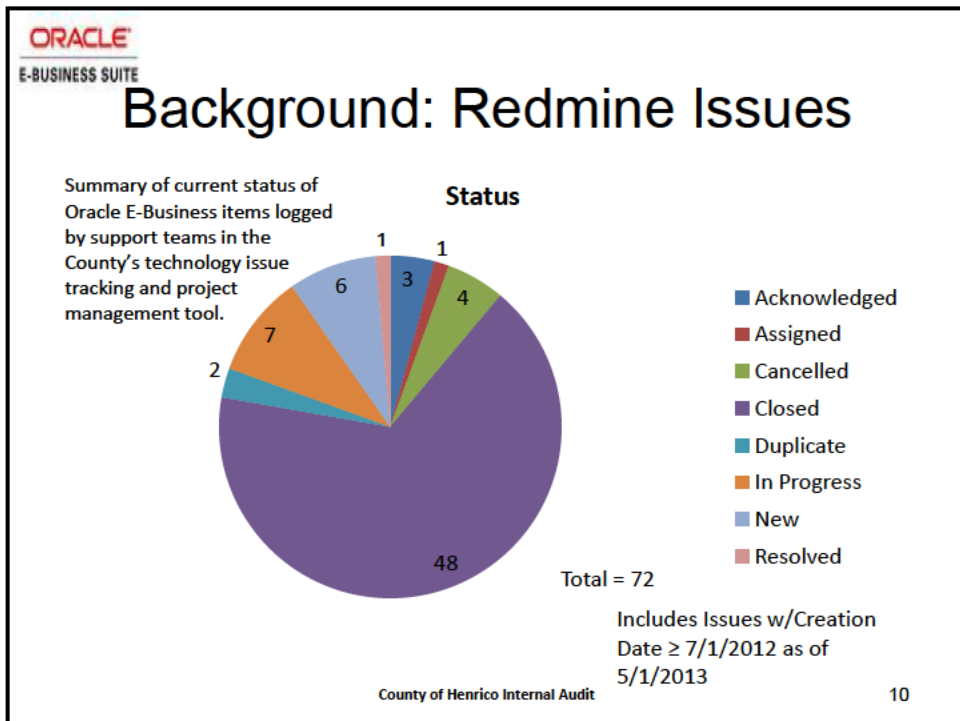
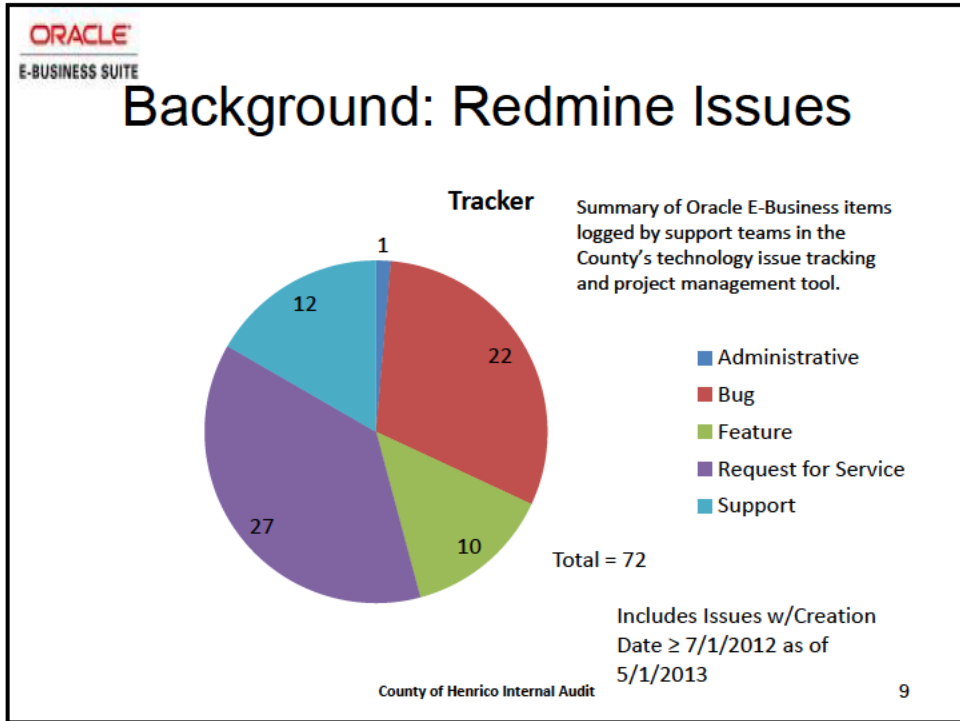
Background: Change Control

Change Control is a process used to ensure changes to systems are implemented in a controlled and coordinated manner. This includes proper initiation, development, testing, and implementations with associated approvals.



This reduces the possibility of unnecessary and/or defective changes being introduced into a system causing problems and/or system failure.

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Background: Oracle Support Group

The Oracle Support Group consists of at least one representative from Finance, Human Resources, Schools, and Information Technology

Department/Agency	Support Group Representative
Finance	Information Technology Project Manager
Human Resources	HRMS Division Manager
Schools	Information Technology Project Leader
Information Technology	Information Technology Project Manager



Source: Oracle System Processes and Procedures

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Background: Oracle Support Group Responsibilities

The group is accountable for:

- Developing and implementing the standards and procedures that will be used in conjunction with the County's Oracle systems and insuring that those standards and procedures are adhered to by all users,
- Administering all upgrades, changes, modifications, or customizations to the County's Oracle system through the use of testing and implementation procedures and standards set by the group,
- Insuring the security and integrity of the data and information maintained in the County's Oracle systems, and
- Maintaining the accuracy of the County's records by insuring that problems and issues with the County 's Oracle systems are addressed in a timely and thorough manner.


Source: Oracle System Processes and Procedures

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Audit Scope

- In-Scope:
 - Oracle E-Business Financials Application Systems and Databases
 - Oracle E-Business HRMS Application System and Databases
 - Finance
 - Human Resources
 - Information Technology
- Out-Scope:
 - All Other Departments
 - All Other Application Systems and databases




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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
- Limitations 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 system processes
4. Evaluated regulations, policies & procedures and sample test for compliance



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Audit Conclusions

Objective	Conclusion	
	Update Project	County Cell Phone Deduction Project
A. Environment - Segregation and Access to Development, Test, Production	♦ **	♦ **
B. Project Methodology	▲ Issue 2 ▲ Issue 3 ▲ Issue 4	▲ Issue 2 ▲ Issue 3 ▲ Issue 4
C. Project Initiation	■	■
D. Project Testing	▲ Issue 1	■
E. Project Turnover to Production	■	■

****** Based on a prior audit (#210-System Development and Program Change Control), management was previously made aware of an existing issue that relates to this objective regarding lack of an automated change control system and ability of a developer to move changes into production. Management documented business justification and mitigating controls on an Internal Audit risk acceptance form (FY11-RA-03) which was reviewed with the Audit Committee in November 2011 and is maintained in Internal Audit's files.


■ Sufficient
 ▲ Needs Improvement
 ◆ Insufficient-Needs Immediate Attention
 ♦ Risk previously identified & accepted by management

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Issues

1. Show Clear Evidence of Developer and User Testing in Redmine
2. Keep the "Oracle System Processes and Procedures" Manual Updated



Other Observations


3. Document "Lessons Learned" during Projects
4. Update System Assessment Sheet

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Issue 1

Show Clear Evidence of Developer and User Testing in Redmine



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Issue 1

Criteria

Testing is a requirement of common Change Control Procedures.

Condition

In a test of 10 issues related to HR and Finance modules sampled from the County's issue tracking and project management system, Redmine, only 4 showed evidence of developer testing and only 5 of 9 completed system changes showed evidence of user testing. 2 of the 10 had neither evidence of developer testing or user testing.

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Issue 1

Cause

Many of the changes are minor. Minimum testing is needed and entering it into Redmine is overlooked.

Effect

There is no evidence of or accountability for testin_ when it is not clearl_ documented in Redmine or elsewhere in hard copy.



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Issue 1

Recommendation

We recommend evidence of developer and user testing be clearly documented in Redmine issues.

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Issue 1

Management Response

Testing for minor issues is usually communicated back and forth through email and at times are not completely documented within Redmine. Many of the issues picked up during the audit were related to a production issue right after [REDACTED] upgrade. IT worked on the resolution quickly and implemented it on prod. There was simply not enough time for these prod critical items to go through our standard change management process documentation. We will ensure this is done in a consistent manner on all redmine tickets going forward.


By Whom: IT – IT Project Manager
Completion Date: December 31, 2013

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Issue 2

Keep the “Oracle System Processes and Procedures” Manual Updated




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Issue 2

Criteria

Common business practices require written policies and procedures be modified as needed.



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Issue 2


Condition

Currently the “Oracle System Processes and Procedures” manual that contains the change control procedures for Oracle E-Business does not have anyone assigned to keep it up-to-date nor a schedule for updates.

This manual is shared between the Oracle Support Group team composed of staff from Information Technology, Finance and Human Resources and is referenced as needed during projects.


There have been some changes in the change control procedures that have not been updated in the manual.

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Issue 2

Cause




The manual was developed during the STEP project to aid in rolling out the HRMS Module. This is a comprehensive manual which defined all the HRMS processes at that time. Only one section pertains to the change control procedures.

Effect

The manual is no longer related to current change control processes and cannot serve as a reliable resource in the event of changes in current personnel.

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Issue 2

Recommendation

1. At a minimum, an annual schedule should be set for updates to the change control procedures in the manual. One individual should be assigned to these updates. The scope of the updates should result from a collaborative discussion in the Oracle Support Group.
2. Consideration should be given to separating the change control procedures into a separate manual for use by the Oracle Support Group.

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Issue 2

Management Response

We will put this item on the OSG projects calendar and will assign resources to take care of updates. There are significant number of changes to the system since we went live with Oracle [REDACTED]. These include both, business process changes and change in the way we handle security. Updating this document is a significant task and needs to be done by the representatives from each of the individual groups. We will discuss this item in the next OSG meeting and see where we can place it on our calendar and at a minimum assign someone from the OSG group responsible for updating the change control procedures.

By Whom: Oracle Support Group
Completion Date: August 31, 2013

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Other Observations

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


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Issue 3

Document “Lessons Learned” during Projects

There was no evidence found of “Lessons Learned” being documented during projects to ensure such learnings were captured for consideration when managing future system changes.



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Issue 3

Recommendation

1. A step for “Lessons Learned” should be added to change control procedures in the “Oracle System Processes and Procedures” manual.
2. “Lessons Learned” should be documented during each large project. This would include processes that could be performed in a better way in the future such as timing, communications, testing and/or other processes during the project.

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Issue 3

Management Response

This will be updated only on large projects. We will discuss this item in the OSG meeting and propose this be documented on all projects which are classified as Large (More than 160 hours). Lessons learned will be discussed in the pre-signoff meeting (which is part of any project classified as large) and if any lessons are learned, we will document them on the redmine ticket going forward.

By Whom: Oracle Support Group
Completion Date: December 31, 2013

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Issue 4

Update System Assessment Sheet

Information Technology's System Assessment Sheet related to Oracle, which is used as a management tool to document the status of the system, has not been updated since the latest upgrade.

Recommendation



Update System Assessment Sheet related to Oracle.

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Issue 4

Management Response

██████████ is currently working on updating the system assessment sheet. we expect to complete this by the end of August 2013. This item has also been prioritized by the director of IT.


By Whom: IT – IT Project Manager
Completion Date: August 31, 2013

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Closing

- Appreciate Agency’s cooperation
- Follow up on open Action Plans will be performed as completion dates are reached



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Audit Committee (Mr. Glover, Mrs. O'Bannon, County Manager)	Board of Supervisors, Non-Committee Members
Deputy County Manager for Administration	Directors of Finance, Human Resources, and Information Technology
Internal Audit Staff	

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