

City of Atlanta



Continuous Audit

A Case Study

Wednesday, August 24th 2011

9:00 am – 10:50 pm

Damien Berahzer, CISA



.



ERNST & YOUNG

CISA

CERTIFIED INFORMATION SYSTEMS AUDITOR



**NCCU
EAGLES**

NORTH CAROLINA CENTRAL UNIVERSITY



Member



Before we begin

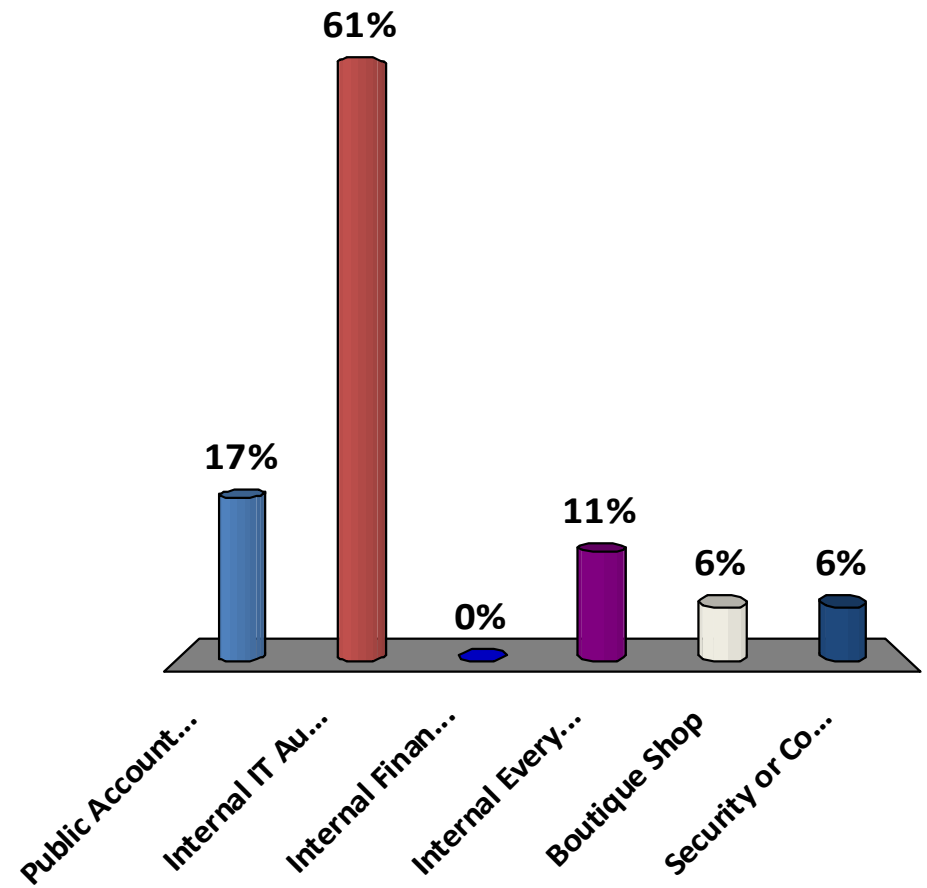
- Questions
- Time Checkers
- Response Cards





Who are you?

1. Public Accounting Firm
2. Internal IT Auditor
3. Internal Financial Auditor
4. Internal Everything Auditor
5. Boutique Shop
6. Security or Compliance





Session Objectives

- Continuous Auditing concepts/discussion
- Tools used to develop an in-house solution for testing SOD
- Examine CA examples
- Automation criteria, challenges, benefits, sacrifices and skills sets needed
- What's Next



CA, the beginning

File View Control Help

UNIX Testing Automation Damien Berahzer

Enter the Location of the etc/passwd file on your machine. The full or relative path with file extension must be entered (for example C:/temp/UNIX/etcpasswd.txt)

Location of etc/passwd file

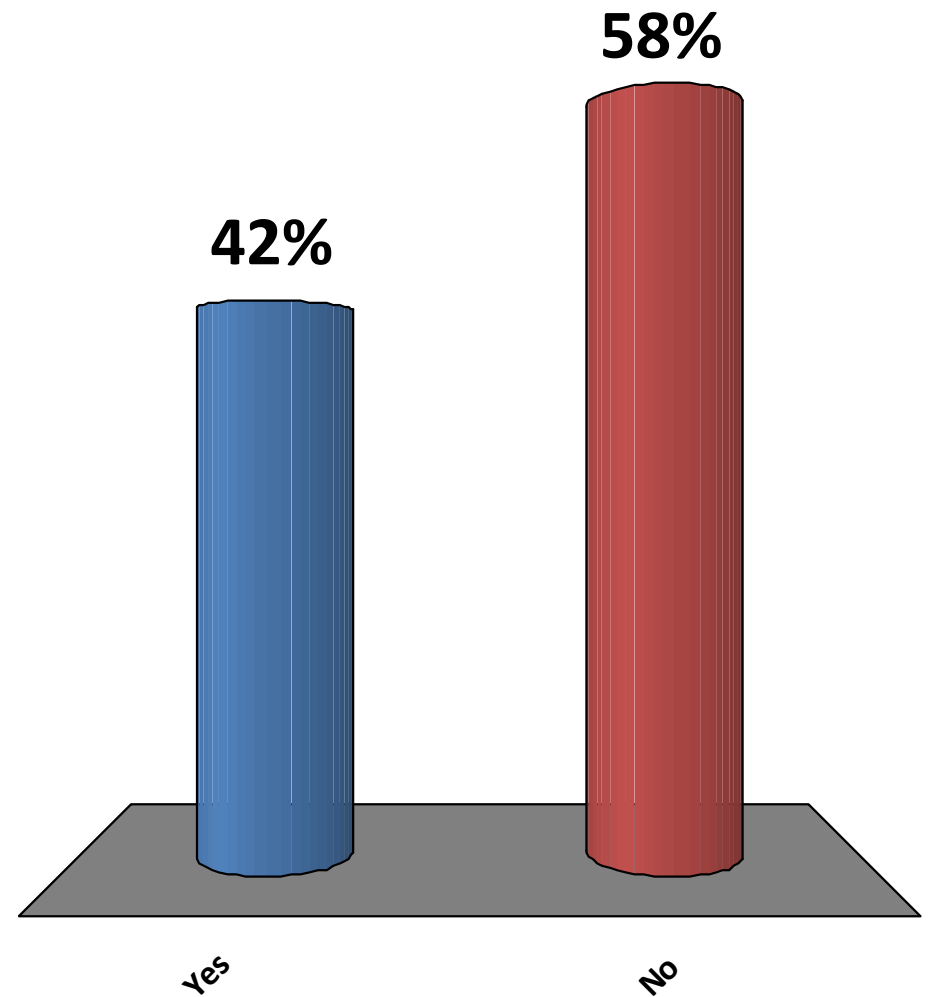
RESULTS

The following User has UID = 0 :- root	This UID repeats 0
The following User has UID = 0 :- scott	This UID repeats 213
The following accounts have UID < 100 root, daemon, bin, sys, adm, uucp, lpd, lp, invscout, nuucp, scott, lawson	This UID repeats 317

We are performing CA

1. Yes

2. No





Dollar, Dollar Bills Ya'll

\$18,000,000.00



NEC Corp



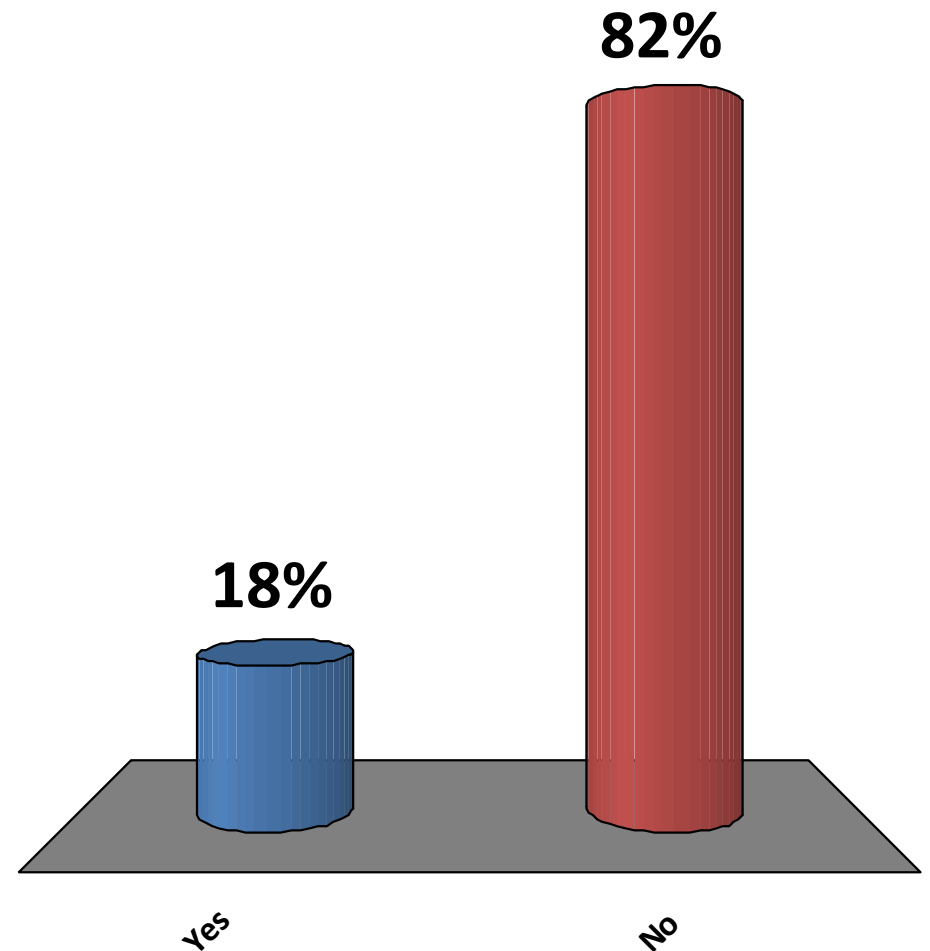
Continuous Auditing

- The IIA's *Global Technology Audit Guide* (GTAG) on continuous auditing defines it as “any method used by auditors to perform audit-related activities on a more continuous or continual basis.”
- ISACA defines CA as an approach that allows IS auditors to monitor system reliability on a continuous basis and to gather selective audit evidence through the computer.

Is hiring 25 new employees to perform
monthly reconciliations CA?

1. Yes

2. No



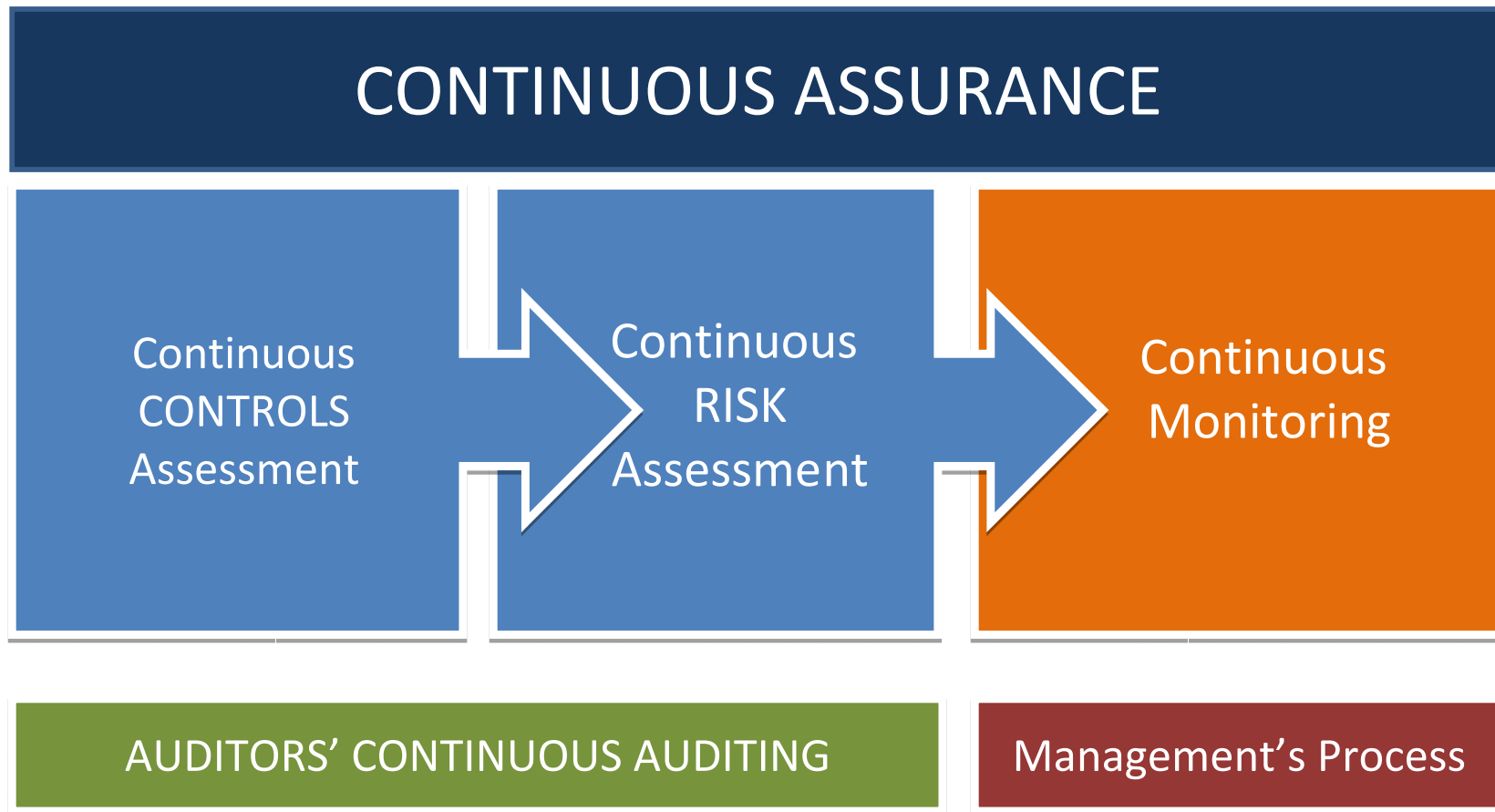


Continuous Auditing

- Model, framework, method
- Increased frequency
- Technology driven / automation
- Overall audit integration
- Allows for less time *



Continuous Auditing continued

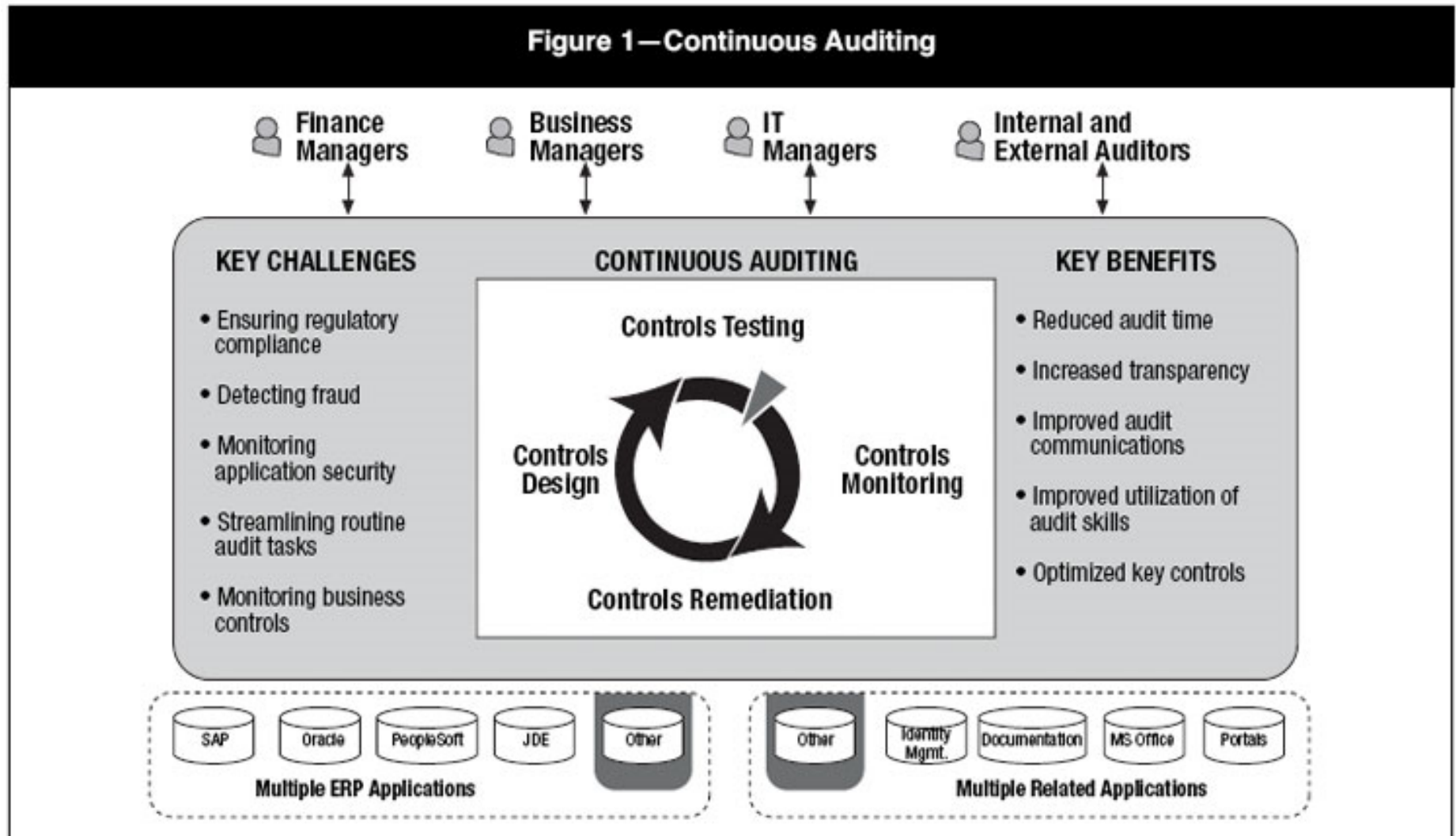


Adapted from the Global Technology Audit Guide



Continuous Auditing continued

Continuous Auditing Comes of Age, Gerard Brennan, 2008

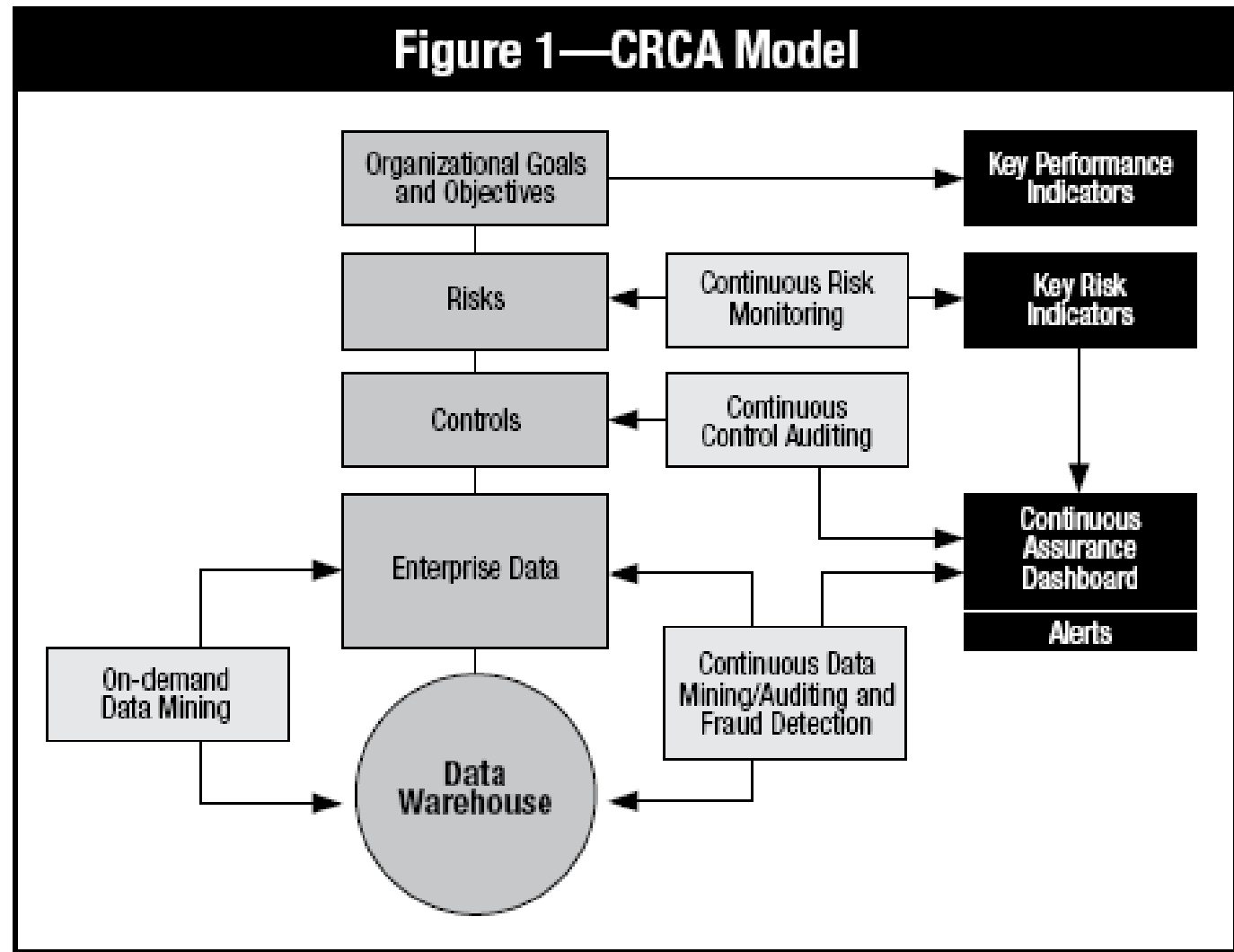




Continuous Auditing continued

Continuous Auditing Reexamined, Norman Marks, 2010

Continuous risk and control assurance (CRCA) is far more than an application of continuous auditing or monitoring; it is a top-down model that starts with enterprise goals and objectives, moves on to risks to the objectives and the controls required to manage the risks, and includes the mining of data that can provide indicators of risk and control health



Damien's borrowed CA Framework



Finance Managers Business Managers IT Managers Internal and External Auditors

CONTINUOUS ASSURANCE

Continuous Control Auditing

Continuous Data Mining/Auditing and Fraud Detection



AUDITORS' CONTINUOUS AUDITING

Management's Process



Team

- Key Stakeholders
 - Audit Committee
 - City Council Finance Exec.
 - Procurement
- IT Staff
 - Facilitate data access
 - Provide expertise that can be leveraged
 - Audit Instance
- Audit Staff
 - Develop CA Test
 - Motivated, Understands Querying, Knowledge of Programming
- Finance Staff (**listed as main advocate first year**)
 - Disappointing Participation

Never: It Can't be done

Yes: What will it take to get it done



Tools (selected)

- SQL Developer (**Develop, leverage**)
 - PL/SQL
 - Data extraction via queries
 - Data manipulation via programming language
 - Free
- My Oracle Support (**research**)
- Oracle (**develop, leverage**)
- Discoverer Plus (**leverage**)



SQL Developer

Oracle Database Account: Read Access to all schemas, Grant Session Access, Create Access in own schema

TNS Name

The screenshot shows the 'New / Select Database Connection' dialog box. The 'Connection Name' field is set to 'Continuous_Audit_Test_Envi'. The 'Username' field is 'your_user_name' and the 'Password' field is masked with '*****'. The 'Oracle Access' section is selected, with 'Connection Type' set to 'Basic' and 'Role' set to 'default'. The 'Hostname' field is 'system_host_name', 'Port' is '1522', 'SID' is 'xe', and 'Service name' is 'service_name'. The 'OS Authentication', 'Kerberos Authentication', and 'Proxy Connection' checkboxes are unchecked. The 'Status' is 'Success'. The 'Test' button is highlighted.



SQL Developer

COA Test Instance for all Oracle Tables

Tables (Filtered)

Views

Indexes

Packages

Procedures

Functions

Queues

Queues Tables

Triggers

Types

Sequences

Materialized Views

Materialized Views Logs

Synonyms

Public Synonyms

Database Links

Public Database Links

Directories

Java

XML Schemas

XML DB Repository

Recycle Bin

DBMS Jobs

Scheduler

Other Users

These tables and views belong to the user logged into the SQL developer Application and have authenticated to the Oracle instance.

Tables and Views needed for CA exist under the APPS, APPLSYS and any other schema defined by your organization and are found under the Other Users Folder



SQL Developer

The screenshot displays the SQL Developer interface. On the left, the 'Connections' pane shows a tree view of database objects, with 'FND_USER' selected. The main window shows the 'Columns' tab for the 'FND_USER' table. The table structure is as follows:

COLUMN_NAME	DATA_TYPE	NULLABLE	DATA_DEFAULT	COLUMN_ID	COMMENTS
USER_ID	NUMBER(15,0)	No	(null)	1	(null)
USER_NAME	VARCHAR2(100 BYTE)	No	(null)	2	(null)
LAST_UPDATE_DATE	DATE	No	(null)	3	(null)
LAST_UPDATED_BY	NUMBER(15,0)	No	(null)	4	(null)
CREATION_DATE	DATE	No	(null)	5	(null)
CREATED_BY	NUMBER(15,0)	No	(null)	6	(null)
LAST_UPDATE_LOGIN	NUMBER(15,0)	Yes	(null)	7	(null)
ENCRYPTED_FOUNDATION_PASSWORD	VARCHAR2(100 BYTE)	No	(null)	8	(null)
ENCRYPTED_USER_PASSWORD	VARCHAR2(100 BYTE)	No	(null)	9	(null)
SESSION_NUMBER	NUMBER	No	(null)	10	(null)
START_DATE	DATE	No	(null)	11	(null)
END_DATE	DATE	Yes	(null)	12	(null)
DESCRIPTION	VARCHAR2(240 BYTE)	Yes	(null)	13	(null)
LAST_LOGON_DATE	DATE	Yes	(null)	14	(null)
PASSWORD_DATE	DATE	Yes	(null)	15	(null)
PASSWORD_ACCESSES_LEFT	NUMBER(15,0)	Yes	(null)	16	(null)
PASSWORD_LIFESPAN_ACCESSES	NUMBER(15,0)	Yes	(null)	17	(null)
PASSWORD_LIFESPAN_DAYS	NUMBER(15,0)	Yes	(null)	18	(null)
EMPLOYEE_ID	NUMBER(15,0)	Yes	(null)	19	(null)
EMAIL_ADDRESS	VARCHAR2(240 BYTE)	Yes	(null)	20	(null)
FAX	VARCHAR2(80 BYTE)	Yes	(null)	21	(null)
CUSTOMER_ID	NUMBER(15,0)	Yes	(null)	22	(null)
SUPPLIER_ID	NUMBER(15,0)	Yes	(null)	23	(null)
WEB_PASSWORD	VARCHAR2(240 BYTE)	Yes	(null)	24	(null)
USER_GUID	RAW	Yes	(null)	25	(null)
GCN_CODE_COMBINATION_ID	NUMBER(15,0)	Yes	(null)	26	(null)
PERSON_PARTY_ID	NUMBER	Yes	(null)	27	(null)



SQL Developer

The screenshot shows the SQL Developer interface with the 'Triggers' tab selected. The table below lists the triggers for the 'APPS' schema.

TRIGGER_NAME	TRIGGER_TYPE	TRIGGER_OWNER	TRIGGERING_EVENT	STATUS
FND_USER_AH	BEFORE STATEMENT	APPS	INSERT	ENABLED
FND_USER_AI	AFTER EACH ROW	APPS	INSERT	ENABLED
FND_USER_AT	BEFORE STATEMENT	APPS	UPDATE	ENABLED
FND_USER_AU	AFTER EACH ROW	APPS	UPDATE	ENABLED
FND_USER_AC	BEFORE STATEMENT	APPS	DELETE	ENABLED
FND_USER_AD	AFTER EACH ROW	APPS	DELETE	ENABLED



SQL Developer

The screenshot shows the SQL Developer application window. The title bar includes 'Start Page', 'Continuous_Audit_Test_Envi', and 'SOD_Coding_Beta.sql'. The main window has tabs for 'SQL Worksheet' and 'History'. Below the tabs is a toolbar with various icons for execution, undo, redo, and formatting. The main area is a 'Worksheet' with a 'Query Builder' tab. The SQL query is displayed in a dark blue background with white text:

```
,SOD_Test_Results SOD_Test
where fu.end_date is null
AND SOD_Test.user_name = fu.user_name
AND comp_menu.function_id = func_list.function_id
AND resp.MENU_ID = comp_menu.MENU_ID
AND resp.responsibility_id = frt.responsibility_id
AND func_tbl.function_id = func_list.function_id
and fu.user_id = fur.user_id
AND func_tbl.Function_Name = SOD_Test.second_function_name
and fur.end_date is null
and fur.responsibility_id = frt.responsibility_id
and fu.employee_id = papf.person_id
AND papf.person_id = naf.person_id
```



My Oracle Support

My Oracle Support—award winning next generation support platform—uses personalized and proactive support capabilities to help accelerate the business value of Oracle solutions, lower the cost of ownership, and enable faster problem resolution.

•Oracle **eTRM** (Oracle eBusiness Suite Electronic Technical Reference Manual – eTRM). According to Oracle:

- *eTRM is a pl/sql utility that reads design information in an Oracle database and displays its output in html format.*



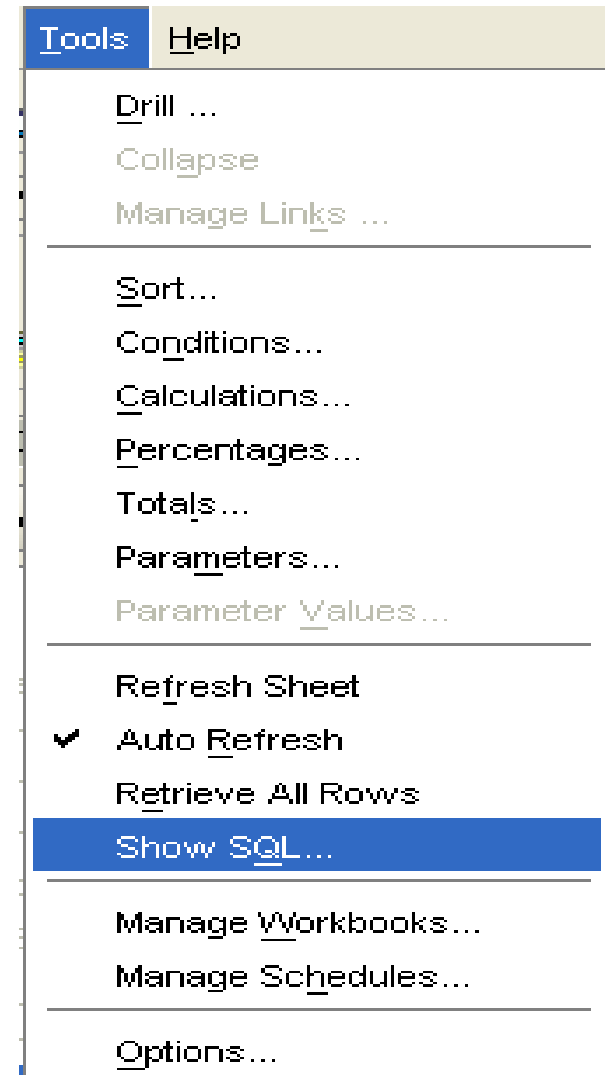
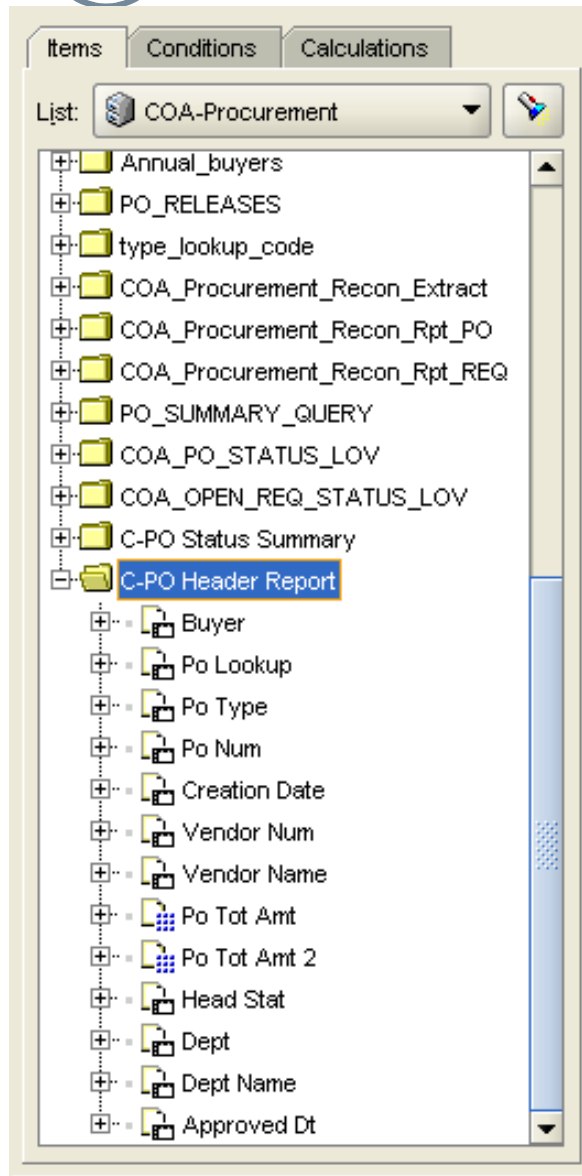
Discoverer Plus

Oracle Discoverer Plus is a data access tool. You use it to view the information in your company's databases. The whole purpose of Discoverer is to help you--the business professional--view the data you want from a database, analyze it to support your business decisions, and create reports to keep track of things.

- Examine SQL statements for the reports created by IT for departments.
- This allowed quick identification of tables and views holding data for types of audit tests.
- Created queries based off of established reports.



Discoverer Plus





What to develop as a CA Test

(65 options to choose from: **ask for it if you like**)

Area	CA Description	Risk	Feasibility	Stakeholder Concerns
Payments	Blank Payee Address	L	H	
Payments	Payee Address Matches Current Employee		L	
Journal Entry	JE per executive			
Journal Entry	Write off JE greater than a pre-defined value			
Journal Entry	Weekend/holiday entries			
Procurement	Transaction splitting to bypass limits	H	M	x
Procurement	Former employee SSN same as vendor Tax ID		M	
Procurement	debit balances	M	M	
Controls	Segregation of duties	H	M	x
Other	Inactive vendors	H	M	x
Payroll	Advance leave balances	M	M	x
Procurement	waivers of procurement rules	H	L	x
Cash	Cashier voids	H	L	



What we selected

- **SOD**
- **Duplicate Payments**
- **Inactive Vendors**
- **Advanced Sick Leave**
- **PO Approval override**
- Weekend Journal Entries (Executives Making Entries)
- ACH Multiple payment analysis (payments going to the same bank account for multiple people)



Segregation of Duties

- 1. Control policy according to which no person should be given responsibility for more than one related function. For example, the person responsible for purchasing should not also be responsible for its payment.
- 2. Methods and procedures established as an internal check on activities through separation of (1) custody of assets from accounting personnel, (2) authorization of transactions from custody of associated assets, and (3) operational responsibilities from record-keeping responsibilities.

SOD Matrix



X



X

X



X





SOD Matrix

ORACLE SEGREGATION OF DUTIES MATRIX prepared by: Damien Berahzer reviewed by: Gerald Schaefer		Enter Journal Entries	Post Journal Entries	Create and Change Vendors	Create Vendor Invoices	Initiate Accrual Write Offs	Create and Change PO	Receive Goods or Services	Enter Inventory Count	Merge Vendors	Receive Goods	Enter Cash Receipts	Maintain Customer Credit Limits	Create Customer Records	Hire Employees	Enter Invoices
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Enter Journal Entries	1	■	x									x				x
Post Journal Entries	2	x	■													x
Create and Change Vendors	3			■												
Create Vendor Invoices	4				■											
Initiate Accrual Write Offs	5					■										
Create and Change PO	6						■	x								x
Receive Goods or Services	7							x	■							
Enter Inventory Count	8									■						
Merge Vendors	9										■					
Receive Goods	10											■				
Enter Cash Receipts	11	x											■			
Maintain Customer Credit Limits	12													■		
Create Customer Records	13														■	
Hire Employees	14															■
Enter Invoices	15	x	x													■



Track the risk associated with the SOD Conflict

- Open and Close Periods versus Import Journals
 - This allows access to open and close journal periods and enter journals via the import journals feature. There is a risk that a previous period could be opened and fraudulent journal entries made. Opening and closing periods should be given to a limited number of users.



SOD Version 2 Streamline

Invest the time and utilize DIT expertise to develop one statement that produces a list of responsibilities with the associated functions. We'll have one query that can be stored in a Graphical application such as those listed above

Obtain and Format Data

Write Query to Extract Responsibilities Table Data

Write Query to Extract Functions TL Table Data

Write Query to Extract Functions Table Data

Import Responsibilities Table Data into MS Access

Import Functions TL Table Data into MS Access

Import Functions Table Data into MS Access

Use query to delete repeating dashes *-----* for Imported Responsibilities Table Data

Use query to delete repeating dashes *-----* for Imported Functions TL Table Data

Use query to delete repeating dashes *-----* for Imported Functions Table Data

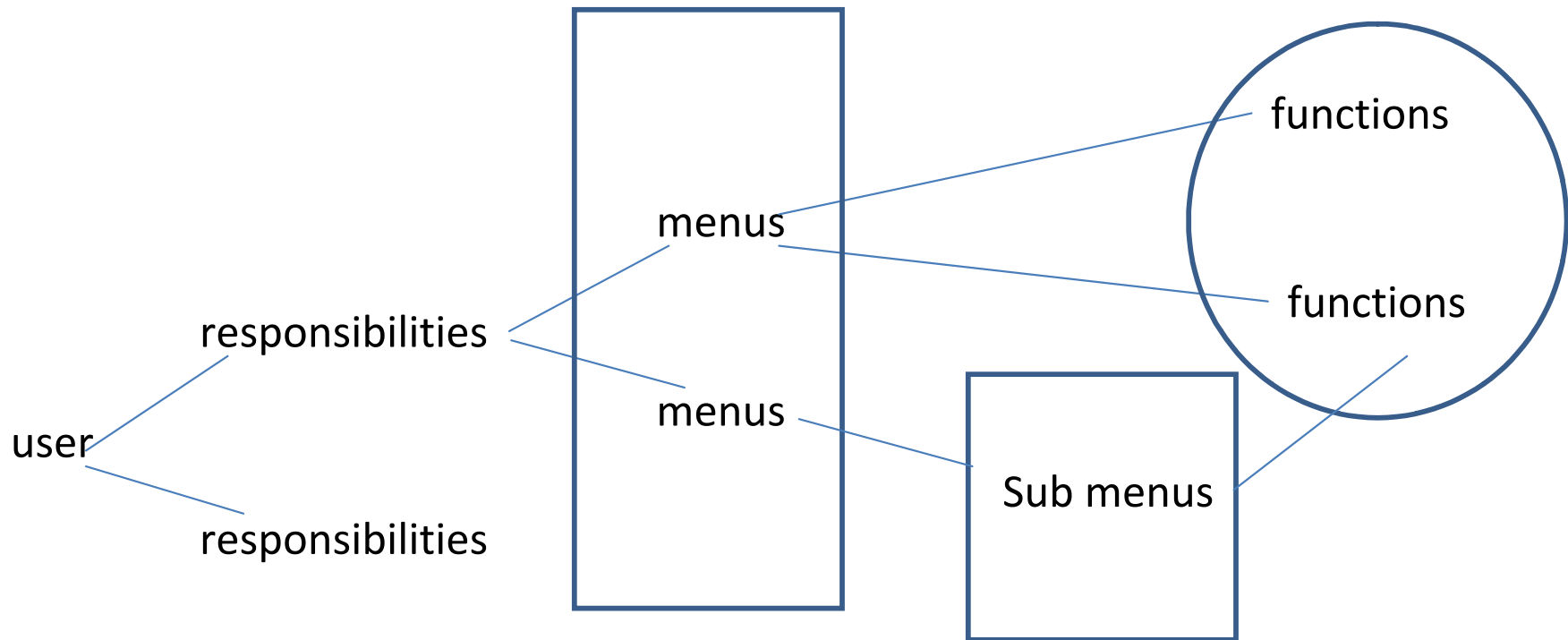
Use Update Query to remove spaces from Application ID in the Responsibilities Table Data

Create intermediate consolidated between Functions and Functions TL table data functions to be tied to responsibilities.

Create intermediate Table needed by Script that has consolidated functions tied to responsibilities.



Oracle Logical Structure





SOD: Key Oracle Tables

APPS.FND_USER_RESP_GROUPS_DIRECT
APPLSYS.FND_COMPILED_MENU_FUNCTIONS
APPLSYS.FND_FORM_FUNCTIONS_TL
APPLSYS.FND_FORM_FUNCTIONS
APPLSYS.FND_USER
APPLSYS.FND_RESPONSIBILITY
APPLSYS.FND_RESPONSIBILITY_TL
APPS.PER_ALL_PEOPLE_F PAPF
APPS.PER_ALL_ASSIGNMENTS_F
APPS.PER_ALL_ASSIGNMENTS_D



SOD: Conflict Arrays

	1 st Function Name	1 st User Function Name	2 nd Function Name	2 nd User Function Name
1	PN_APXVDMVD	Enter Suppliers	AP_APXIIFIX	Open Interface Invoices
2	PN_APXVDMVD	Enter Suppliers	AP_APXTSBNK	Bank Transmission Setup Info
3	PO_POXPCATN	Exceed Price Tolerances	RCV_RCVCERC	Receipts



SOD: Pseudo Code

(271 lines of actual code)

- Create a temporary table to hold data
- Define parallel arrays for conflict pairs
- Loop through each conflict pair (**For Loop**)
 - Select users with access to the first function in pair
 - IN (Select users from list above to second conflict pair)
 - Insert partial record (first function results) into temp table
- Use temp table to obtain final results including the 2nd conflict pair



Duplicate Payments

Pattern 3: Vendor Names are similar.

Pattern 1: Invoice Numbers repeat (they are identical)

Pattern 2: Invoice Amounts repeat (they are identical)

VENDOR NAME	INVOICE ID	INVOICE NUMBER	INVOICE AMOUNT	AMOUNT PAID	INVOICE DATE	PAY STATUS
THIS USA LLC	9124007	I00PP0357256	63	63	01-SEP-10	Y
THIS USA, INC	9129227	I00PP0357256	63	63	01-SEP-10	Y
COURTNEY, COXY	9103604	BD1PP07103	158	158	17-AUG-10	Y
COXY, COURTNEY	9103625	BD1PP07103	158	158	17-AUG-10	Y



Duplicate Payments: Key Oracle Tables

- APPS.AP_INVOICES_ALL
- APPS.HR_OPERATING_UNITS
- APPS.PO_VENDORS
- APPLSYS.FND_USER

○ Duplicate Payments: Pseudo Code

(147 lines of actual code)

- Create a 2 temporary tables to hold data
- First Table
 - Select invoice details
 - IN (Select invoice number)
 - IN (Select records having count invoice number and count invoice amount greater than 1)
- Second Table: Select distinct invoice number from table above and loop
 - Select invoice details where invoice
 - IN (Select invoice number having count amount greater than 1)



Inactive Vendors: Key Oracle Tables

- APPS.PO_HEADERS_ALL
- APPS.PO_VENDORS
- APPS.AP_INVOICES_ALL

○ Inactive Vendors: Pseudo Code

(106 lines of actual code)

- Create a 2 temporary tables to hold data
- First Table hold all invoices paid where the vendor ID
 - NOT IN (Select vendor ID with activity in the last 365 days)
 - Order by Date
- Second Table: For each Distinct Vendor ID Select first row (rownum = 1) and insert into table.



Inactive Vendors: what it revealed

- We identified 2,383 vendors with no invoice activity for the past 365
- vendor type field blank for 63% of the records pulled
- duplicate entries for vendors



Oracle Alerts and Triggers

- Oracle Alerts: Oracle Alerts are used to monitor unusual or critical activity within a designated database. The flexibility of ALERTS allows a database administrator the ability to monitor activities from table space sizing to activities associated with particular applications (i.e. AP, GL, FA). Alerts can be created to monitor a process in the database and to notify a specific individual of the status of the process.
- Oracle Triggers: Oracle lets you define procedures called triggers that run implicitly when an INSERT, UPDATE, or DELETE statement is issued against the associated table or, in some cases, against a view, or when database system actions occur. You can write triggers that fire whenever one of the following operations occurs:
 - DML statements (INSERT, UPDATE, DELETE) on a particular table or view
 - DDL statements (CREATE or ALTER primarily) issued either by a particular schema/user or by any schema/user in the database
 - Database events, such as logon/logoff, errors



Oracle Alert: Auto Approve PO (Periodic Alert)

Document Types (City of Atlanta)

— Document —

Type	Subtype	Name	Quotation Class
Purchase Order	Standard	Standard Purchase Ord	

Attributes

- Owner Can Approve
- Approver Can Modify
- Can Change Forward-To
- Can Change Forward-From
- Can Change Approval Hierarchy
- Disable

Security Level: Public

Access Level: View Only

Forward Method: Hierarchy

Archive on: Approve

Default Hierarchy:

Approval Workflow: CATS PO Approval

Workflow Startup Process: PO Approval Top Proce

Approval Transaction Type:

Autocreate Workflow:

Autocreate Workflow Startup Process:

Document Type Layout: CATS PO Printing

Contract Terms Layout: COA Oracle Contract Te



Oracle Alert: Auto Approve PO

The screenshot displays the Oracle EBS interface for configuring a document type. The main window is titled "Document" and shows a table with columns: Type, Subtype, Name, and Quotation Class. The first row is highlighted with "Purchase Order", "Standard", and "Standard Purchase Ord".

Below the table, the "Attributes" section is visible, containing various checkboxes and dropdown menus for configuration. Key attributes include:

- Owner Can Approve:
- Approver Can Modify:
- Can Change Forward-To:
- Can Change Forward-From:
- Can Change Approval Hierarchy:
- Disable:
- Security Level: **Public**
- Access Level: **View Only**
- Forward Method: **Hierarchy**
- Archive on: **Approve**
- Default Hierarchy: (empty)
- Approval Workflow: **CATS PO Approval**
- Workflow Startup Process: **PO Approval Top Proce**
- Approval Transaction Type: (empty)
- Autocreate Workflow: (empty)
- Autocreate Workflow Startup Process: (empty)
- Document Type Layout: **CATS PO Printing**
- Contract Terms Layout: **COA Oracle Contract Te**

On the right side, a window titled "Examine Field and Variable Values" is open, showing the field "LAST_QUERY" and its corresponding SQL query:

```
FORWARDING_MODE_CODE_DSP,  
ARCHIVE_EXTERNAL_REVISION_DSP,  
SECURITY_LEVEL_CODE_DSP,  
ACCESS_LEVEL_CODE_DSP,  
ATTRIBUTE_CATEGORY,CREATION_DATE,  
CREATED_BY, LAST_UPDATE_DATE,  
LAST_UPDATED_BY, LAST_UPDATE_LOGIN,  
REQUEST_ID, PROGRAM_APPLICATION_ID,  
PROGRAM_ID, PROGRAM_UPDATE_DATE,  
ATTRIBUTE1, ATTRIBUTE2, ATTRIBUTE3,  
ATTRIBUTE4, ATTRIBUTE5, ATTRIBUTE6,  
ATTRIBUTE7, ATTRIBUTE8, ATTRIBUTE9,  
ATTRIBUTE10, ATTRIBUTE11, ATTRIBUTE12,  
ATTRIBUTE13, ATTRIBUTE14, ATTRIBUTE15,  
WF_APPROVAL_ITEMTYPE,  
WF_APPROVAL_PROCESS,  
AME_TRANSACTION_TYPE,  
WF_CREATEDOC_ITEMTYPE,  
WF_CREATEDOC_PROCESS, ORG_ID,  
DOCUMENT_TEMPLATE_CODE,  
CONTRACT_TEMPLATE_CODE FROM  
PO_DOCUMENT_TYPES V WHERE  
(DOCUMENT_TYPE_CODE='PO') and  
(DOCUMENT_SUBTYPE='STANDARD') order by  
upper(document_type_code_dsp),  
upper(document_subtype_dsp)
```



Oracle Alert: Auto Approve PO

The screenshot shows the Oracle Alerts configuration interface. The window title is "Alerts". The "Application" is set to "Application Object Library" and the "Name" is "CATS Audit: PO Auto Approve Flag". The "Description" is "Weekly alert to report if PO autoappro". The "Enabled" checkbox is checked. The "Periodic" tab is selected, and the "Periodic Details" section shows the frequency set to "On Day of the Week" and the day set to "Monday". The "Start Time" is "00:06:00". The "Keep" field is set to "0" days. The "Select Statement" is highlighted in yellow and contains the following SQL query:

```
SELECT
  ,ad.Can_Preparer_Approve_Flag
  Into
  &aud Dt_Tm
  ,&aud_Type
  ,&aud_Id
  ,&aud_Name
  ,&aud_flag
  From Po_Document_Types_All_B_A Ad
  ,ind_user I
  ,Per_All_People_F Papf
```

At the bottom of the window, there are buttons for "Actions", "Action Sets", "Response Sets", and "Alert Details". A green arrow points to the "Periodic" tab, and a red box highlights the "From" clause of the SQL query.



Oracle Alert: Auto Approve PO

Action Details - PO_APP

Action Type: **Message**

List: Reply To:

To: **dberahzer@atlantaga.gov**

Subject: **PO Alert - Autoapprove button updated within the past week**

Cc:

Bcc:

Print For User: Printer:

Response Set: Response Days:

File (G)
 Text (D)

Column Overflow: **Wrap** Max Width: **132**

Impgrr...

```
***= Enter summary template below this line ***=  
** |  
Date/Time: &aud_Dt_Tm  
Type:      &aud_Type  
Oracle ID: &aud_Id  
Name:     &aud_Name
```

Oracle Alert: Advanced Sick Leave

The screenshot shows the Oracle Alerts configuration interface. The window title is 'Alerts'. The main configuration area includes:

- Application:** Human Resources
- Name:** CATS BEN: ADVANCE SICK OWED
- Description:** Event Alert to identify separated emplc
- Enabled:**
- Event Details:**
 - Application:** Human Resources
 - Table:** PER_ALL_ASSIGNMENTS_F
 - After Insert:** (B)
 - After Update:**
- Keep:** 1 Days
- End Date:** (empty field)
- Last Checked:** 01-MAR-2011

The **Select Statement** field contains the following SQL query:

```
SELECT
org.name,
hl.location_code,
employee_number,
assignment_number,
full_name,
hr_person_type_usage_info.
get_user_person_type(Trunc(SYSDATE),paf.person_id),
hr_general.get_user_status (paf.
assignment_status_type_id),
```

At the bottom of the window, there are buttons for **Actions**, **Action Sets**, **Response Sets**, and **Alert Details**. On the right side, there are buttons for **Import...**, **Export...**, **Verify**, and **Run**.



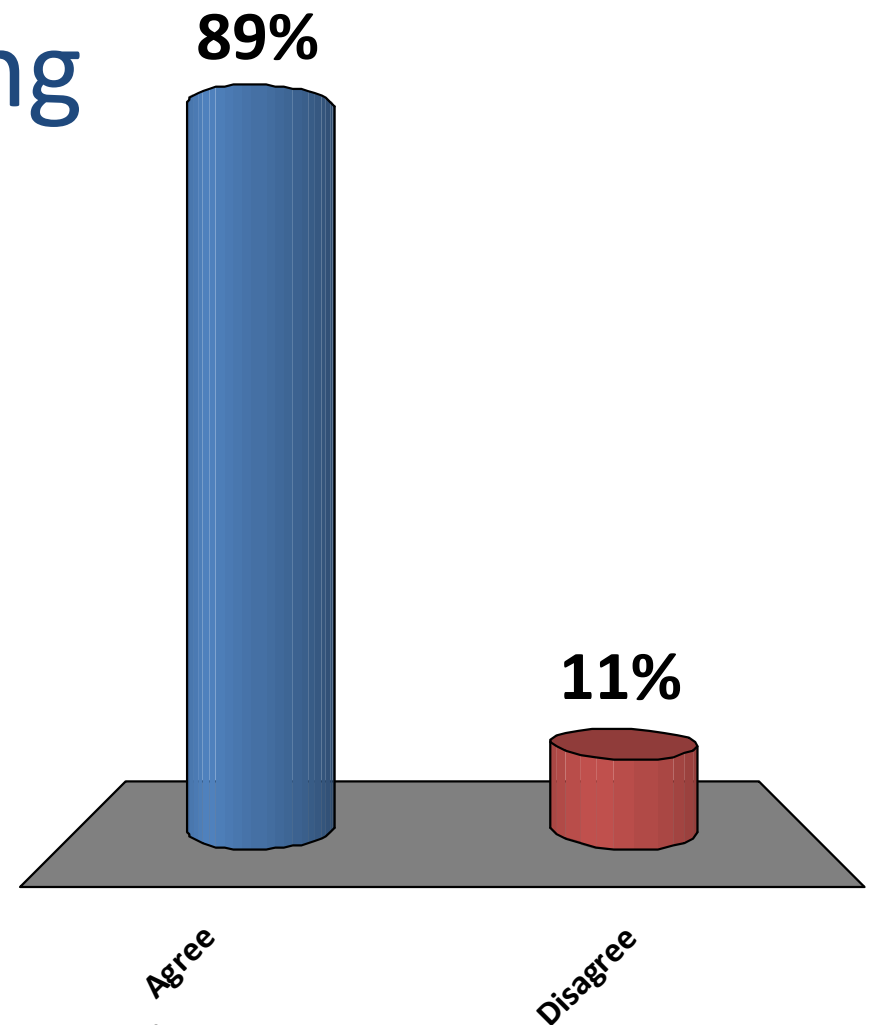
Automation



So easy

I promise, as an intelligent leader in the IT field to rise to the challenge of developing and implementing continuous audit automation.

1. Agree
2. Disagree





Automation Steps

- Identify key team members
 - Finance staff
 - IT staff
 - Audit staff
- Start Small
- Build and Test program
- Look for false positives
- Revise, re-perform, reiterate



What's next

Slide Intentionally left blank