MIS 5121: Business Process, ERP Systems & Controls
Week 8: Authorizations -1, Financial Accounting and Controlling 2

Edward Beaver
Edward.Beaver@temple.edu
Control Failure: Blake Koen’s Presentation

• **Background:**
  ◆
  ◆

• **Control Failures:** 2006 – 2009
  ◆
  ◆

• **Results:**
  ◆
  ◆

• **Reference:**
  ◆
Control Failure: Shuya Yang’s Presentation

• **Background:**
  ❖
  ❖

• **Control Failures: 2006 – 2009**
  ❖
  ❖

• **Results:**
  ❖
  ❖

• **Reference:**
  ❖
Control Failure: Celine Qu Presentation

• **Background:**
  ✷
  ✷

• **Control Failures: 2006 – 2009**
  ✷
  ✷

• **Results:**
  ✷
  ✷

• **Reference:**
  ✷
ISC framework in the ERP environment

- Entity level controls
- Automated application controls
- Manual and semi-automated business process controls
  - Authorizations and access protection (confidentiality, integrity)
- IT General controls (change management, operation, security)
- Automated testing and monitoring of business processes, KPIs, etc.

**Assertions**
- Completeness
- Existence, rights
- Accuracy
- Valuation
- Presentation

**Contain**
- Product quality
- Delivery (OTD)
- Unused capacity
- Excess Costs
- Lower Sales

**Minimized by**
- Procurement
- Production
- Order to $$
- Finance
- IT
- Quality
- Logistics
- HR
- ...
Security: SAP Authorization Concept
Key Information Technology Risks

• System Security
• **Information Security Administration**
• Background Processing (Batch vs. foreground: real-time)
• Powerful User ID’s and Profiles
• Instance Profile Security
• Change Management (including Logs and Traces)
• Table Security
• Data Dictionary, Program and Development Security
• Transport Security
• Change Control
• Data Migration
• Data Interface
• Firefighter access
SAP Environment Security Components

- Network Security
- Operating System Security
- SAP Application Security
- Workstation Security
- Database Security
SAP Security Terminology

• **Transaction (T-code)**: used to access SAP Functions or run programs. Each function & program in SAP has a t-code assigned to it (e.g. VA01, ME23N, S_ALR_87012291)

• T-code Insights
  - All transactions and names stored in table TSTC
  - Some common structures: M E 2 3 N
  - S_ALR... : System Report
  - Z...; Y.... : Custom transaction (non-SAP development) Typically company has naming convention
SAP Security: Lock Concept

Transactions & Programs

Lock: Authorization Object

Core: Authorization Checks

Tumblers: Authorization Fields

SAP Terminology
SAP Security Terminology

- **Authorization Object**: Logical template (‘lock’)
  - Implements access restrictions in SAP
  - Contains 1+ fields
  - Referenced by authority-check statements coded in programs
  - Often many objects referenced by same program
  - Objects are **ANDed** together
  - More than 900 SAP Supplied authorization objects
  - Examples:
    - V_VBAK_AAT: Sales Document: Auth for Sales Document Types
    - V_VBAK_VKO: Sales Document: Auth for Sales Area
    - F_BKPF_BES: Account Authorization for G/L Accounts
SAP Security: Lock Concept

Transactions & Programs

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SAP Terminology
SAP Security Terminology

• **Authority Check**: (the lock ‘core’)
  – Program statement(s)
  – Checks the user’s authorizations buffer for fields and values (based on the referenced authorization object)

• **Authorization Field**: (the lock ‘tumblers’)
  – 1-10 fields used in each object / check.
  – Examples:
    • Activity: function to be performed (create, change, display, etc.)
    • Document type (e.g. sales, purchasing, production, …)
    • Enterprise Hierarchy node (e.g. company, sales org / area, plant, etc.)
    • Account type (e.g. customer, vendor)
SAP Example

Transaction: **SUIM**
Select Role: ‘**Z_BPI**’
  – **Authorizations** tab
SAP Example

Transaction: SUIM - Select Role: ‘Z_BPI’ – Authorizations tab
SAP Security: Key Concept

Lock: Authorization Object

Key Slot

Core: Authorization Checks

Authorization Values

SAP Terminology

Transactions & Programs
SAP Security Terminology

- **Authorization Values:**
  - Collection of fields & values (‘keys’) referencing authorization objects
  - Contained in user’s assigned authorization roles / profiles
  - May or may not match values checked by an authorization check statement
SAP Security Terminology

• **Role:** grouping of privileges
  – Assigned to SAP users, user groups or other roles
  – In general: roles contain logic used to generate profiles
  – Logic in roles includes transactions and user assignments making it the starting point for setting up and maintaining authorizations
  – Can resemble a job description i.e. sales representative, accountant, treasurer

• **Profile:** used to access SAP Functions or running programs.
  – Assigned to users in the user master record
  – Could represent a simple job position
  – Contain authorization and authorization objects

• The basic difference is that the roles contain the "profile" and "user master data"
SAP User IDs

Transaction: SU01 / SU01D
Select Role: ‘user ID’
SAP User Roles / Profiles

Transaction: SU01 / SU01D - ‘Roles’ and ‘Profiles’ tabs
Application Security: Example

User

Business Job / Role (e.g. Buyer)

SAP Enterprise Central Component (ECC)
- Role: Maintain Purchase Requisitions
  - T-code: ME51 Create Purchase Req
  - T-code: ME52 Change Purchase Req
- Role: Display Purchase Requisitions
  - T-code: ME5K Reqs by account Assign

SAP Business Intelligence System (BI)
- Role: Procurement Reports
  - T-code: ME51 Create Purchase Req
  - T-code: ME51 Create Purchase Req
SAP Security: Business vs. Technical View

**Business View**
- Employee
- Job
- Task
- Privileges
  - Activities
  - Business Structure

**SAP Technical View**
- User Master Record
- Roles / Profiles
- Transaction Code in roles / profiles
- Authorizations
  - Object
    - Fields
      - Values
SAP Security: Logic to Access

Check Transaction Code
  - PASS
  - FAIL

Check Object
  - PASS

Within Program
  - PASS

Transaction Code Executed

“No Authorization for
  • Transaction Code ____

“No Authorization for
  • Transaction Code ____
  • Activity ...
  • System Element ...

“No Authorization for
  • Activity ....
  • System Element ...
SAP Security: Diagnosis

- **SU53**: Display authorization data for failed checks
  - Identifies transaction checked (note sometimes SAP transitions to other transactions e.g. during drill downs)
  - Authorization objects and fields checked and values used / available
  - Helps identify ‘missing’ authorizations

**Authorization check failed**

- Date 03/05/2015 Time 09:47:20 Transaction SMEN
  - Authorization Field ACTVT Activity
  - Authorization Field PROFILE Auth. profile in user master maintenance
SAP Authorization Concept Overview

• SAP Authorizations allow you to protect transactions and programs from unauthorized use
  – ‘New’ custom transactions must include authorization objects to be controlled (if missing – open to every user)

• Access must be explicitly granted through use of authorizations

• Authorizations are assigned to roles (profiles) which in turn are assigned to User Master Records (User IDs)

• Only users with active user master records can log onto system. User IDs needed for:
  – Dialog: people via screens
  – System: batch processes
  – Communication / interfaces
Reading Assignment Questions:

- What is a critical authorization?

- Why the time limit for roles of authorization objects doesn't have a specific end date (valid to 31.12.9999)? Isn't that a control weakness?

- *I want to hear experiences in real accounting departments. Do they experience the same levels of controls described in the book, is there authorizations and user types as well?*

- Can SAP do automated analysis and flag any suspicious transactions?

- Has the implementation of SAP really reduced the chance or number of frauds? Did many of the large companies that experienced huge frauds use SAP?  [Link1]
Question:
Is ‘Ignorance’ a valid Security Technique?

Answer: In Two (2) Weeks
Financial Accounting and SAP System Controls
Finance: Fixed Assets

• Basics
  – Asset creation
    • Build (Project Systems)
    • Purchase
    • Manufacture
  – Records:
    • Asset details (creation date, descriptions, location, company, ...)
    • Asset class
    • Initial Valuation
    • Depreciation Keys and Methods (chart of depreciation – varies by country)
    • Account determination
    • Asset History Sheet

• Activities
  • Post asset values
  • Post / recalculate depreciation
  • Closing
Finance: Fixed Assets

• Low Value Assets
  – Are not capitalized -> operating expense in year acquired
  – Need ‘rules’ / boundaries
    • Taxes and Statute rules
    • Nature of business (one companies fixed assets are another’s current assets)

• Risks
  –
  –
  –

• Controls:
  –
  –
  –
Finance: Fixed Assets

• Risks
  – Does asset exist?
  – Is it valued correctly? Capital vs. expense
  – Incorrect valuation
  – To I Own it?
  – Timing (esp. for long build projects)

• Controls:
  – Strong policies documents, trained, followed
  – Detailed audit of high value, special case assets
  – Search for Strange / different patterns of assets depreciation expense
Finance: Month-end Close

• Closing transactions (SAP Standard and Custom)
  – Reports of changes
  – Reconciliation reports
  – Error Reports (gaps / duplicates in document number assignments)
  – Account balance reclassification
  – Analysis of reconciliation accounts (e.g. GR / IR)
  – Update monthly data (e.g. currencies)
  – Revaluations (standard cost updates and related postings)
  – Depreciation, variances, etc. calculations
  – Post adjustment entries
  – Create Financial reports

• Month-end close easier with vision to be ready to close each day (handle all loose ends right away)

• Period (e.g. Quarter) and year-end similar
Finance: Financial Statements

• **SAP Standard Reports**
  – Structure is configurable (Tables T011/ T011T)
  – Summarizes postings by G/L account via groups (Tables SKA1, SKB1)
  – Assignment of G/L account is key control check

• **Custom Reports**
  – Clones of SAP reports with custom requirements
  – New reports developed

• **Controls:**
  – Test & check; test & check ...
  – Review with reconciliation to other standard reports
Finance: Overview

- **Risks / Controls in Finance**
  - Document Parking
  - Manual Transactions
  - Fixed Assets
  - 1-time Business Partners

- **Key configuration: Company codes**
  - Definition
    - Active vs. not (control tool)

- **Financial Master Data**
  - Chart of Accounts
  - Tolerances

- **Real-time vs. Manual Postings**
  - When each is used
  - How each is controlled

- **Reconciliation: Control tool**
Break Time
Remaining Exercises

• Exercise 3: Journal Entries  
  Due: March 17

• Exercise 4: Segregation of Duties  
  Due: March 31

• Final Case: Risk / Control Matrix  
  Due: April 28

• Work for these will be completed by 2 person Teams
  – Tried to pair those with some accounting background with someone who does not
  – One (1) submission by each team
  – Share the grade

(2016)
Journal Entries Exercise

• Primary learning objectives are:
  – Experience concepts of beginning financial accounting
  – Review the accounting cycle
  – Work with a manual accounting information system
  – Experience how an ERP system handles the steps of the accounting cycle
Exercise 3: Journal Entries

• **Agenda** (2016)
  – This Class (*March 7*): Steps 1 – 3 (Manual steps)
  – Next Class (*March 14*): Step 4 (SAP steps)
  – *Due March 17 11:59 PM*: Assignment Submission
Exercise 3: Journal Entries

• **Step 1:** Record the daily transactions
  
  – Record if appropriate, (some events may not involve journal entries)
  
  – Record into Excel
  
  – Review the post these journal entries into t-accounts (Excel automation) and the calculated account balances using cell formulas in Excel.
  
  – Review t-account balance flow into your Excel worksheet as a trial balance. Assure validity of links within spreadsheet that expedites the process and minimize risk of an error in data entry
Exercise 3: Journal Entries

• **Step 2:** Record the adjusting entry transactions
  
  – Record if appropriate, (some events may not involve journal entries) into Excel
  
  – Review the post these journal entries into t-accounts (Excel automation) and the calculated account balances using cell formulas in Excel.

  – Review t-account balance flow into your Excel worksheet as a trial balance. Assure validity of links within spreadsheet that expedites the process and minimize risk of an error in data entry
Exercise 3: Journal Entries

• **Step 3:** Review closing entries
  – Review closing entries in your trial balance as if this were a year-end close. (Do not enter the closing entries in your t-accounts.)
Extra Slides
Exercise 3: Journal Entries

Step 4: Use SAP ERP system to make all above entries using the general ledger system in SAP.

(Instructions for using the SAP ERP system start on page 13 of this document)

a) Accounting ➔ Financial Accounting ➔ General Ledger ➔ Information System ➔ General Ledger reports ➔ Master Data ➔ Chart of Accounts ➔ Chart of Accounts
(S_ALR_87012326) Examine the GLXX chart of accounts (XX is your assigned SAP student login ID#.

b) Accounting ➔ Financial Accounting ➔ General Ledger ➔ Posting ➔ Enter G/L Account Document (FB50) Record beginning account balances in the SAP general ledger. Enter as one composite journal entry (first journal entry). Use journal entry date of January 1. Be sure to compare to Excel spreadsheet to make sure the entries are correct.
Exercise 3: Journal Entries

Step 4: Using SAP general ledger system

c) Accounting ➔ Financial Accounting ➔ General Ledger ➔ Posting ➔ Enter G/L Account Document (FB50) Record the daily transactions for January in the SAP general ledger

- Do each journal entry as a separate entry, not as one giant composite entry,
- Use appropriate dates – this allows for a good audit trail.
Exercise 3: Journal Entries

**Step 4:** Using SAP general ledger system

d) Display the trial balance. Compare this to your manual entries. If the trial balance does not match your manual entries, research the errors and make necessary corrections.

Options for viewing the journal entries:

- **Document Journal:**

- **Source Document Drill Down:**
  - Accounting ➔ Financial Accounting ➔ General Ledger ➔ Account ➔ Display/Change Line Items (FBL3N)

- **Line Item Journal:**
Exercise 3: Journal Entries

**Step 4:** Using SAP general ledger system

e) **Accounting ➔ Financial Accounting ➔ General Ledger ➔**
   *Posting ➔ Enter G/L Account Document* *(FB50)*  Record the adjusting entries.

f) **Accounting ➔ Financial Accounting ➔ General Ledger ➔**
   *Periodic Processing ➔ Closing ➔ Carry Forward ➔*
   *Balance Carryforward (New) (FAGLGVTR)*  Simulate closing the books as of January 31 using the SAP utility.

- **Do not** enter closing entries into the general ledger. These entries would be done automatically through the SAP month-end closing function.
Finance: 1-time Business Partners

- Customers or vendors
  - Used for rarely used, single use business partners
  - Generic 1-time master data records created (created once)
  - Unique address, etc. for each of several real 1-time partner are maintained in transaction documents

- Risks
  - Bypasses Segregation of duties between master and transaction data processing (master data not needed)
  - No credit limit – fraudulent actions possible
  - Cash outflow to alternate payees / addresses

- Controls:
  - Don’t Use
  - Analyze transaction use with 1-time partners
  - Compensating controls (e.g. authorization)