MIS 5121:Enterprise Resource Planning Systems
Week 7: *Authorizations -1, Financial Accounting and Controlling*

FOX|MIS
Management Information Systems

Edward Beaver
Edward.Beaver@temple.edu

ff

Control Failure: Harvey's Presentation

- <u>Background</u>:
  - ❖
  - ❖

- <u>Control Failures</u>: 2006 – 2009
  - ❖
  - ❖

- <u>Results:</u>
  - ❖
  - ❖

- <u>Reference:</u>
  - ❖

Control Failure: Kacper's Presentation

- <u>Background</u>:
  - ❖
  - ❖

- <u>Control Failures</u>: 2006 – 2009
  - ❖
  - ❖

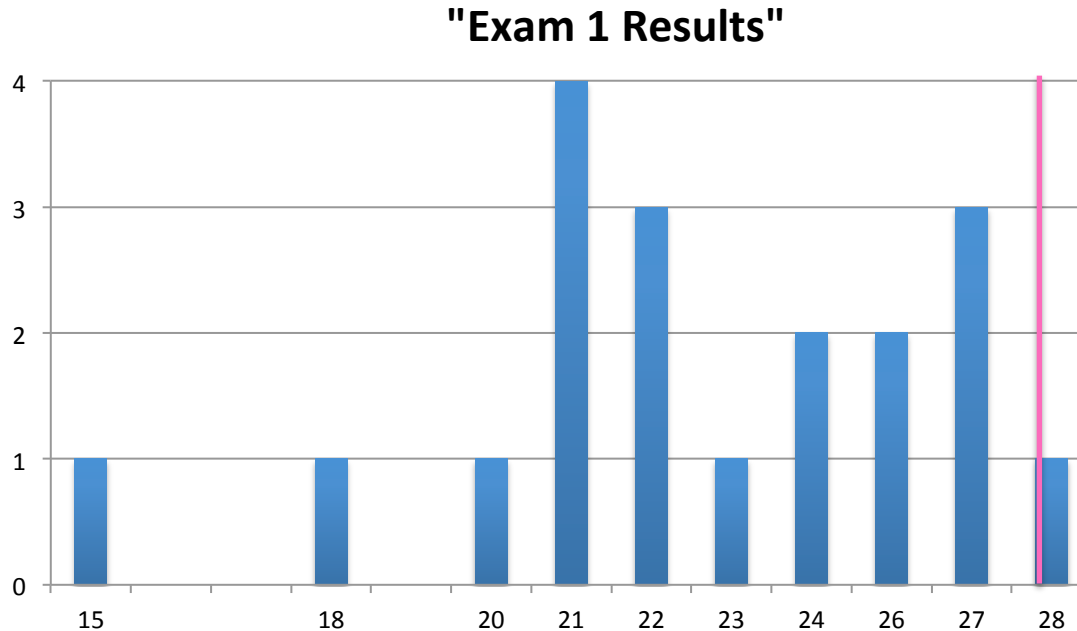- <u>Results:</u>
  - ❖
  - ❖

- <u>Reference:</u>
 - ❖

Exam 1: Results

"Exam 1 Results"

- Some questions really 'bad' (unfair, worded poorly)
- Results will be 'curved' to red high score vs. perfect score of 36
- My Challenge: distill 30+ years experience into curriculum and then how to test understanding

Exam 1: Actions

- Quick Review of 'key' concepts, Lessons (Next week)
  - Not reteach, just review
  - Will be included in Exam 2 and Final
- Formulate exam questions along with curriculum content
  - Will emphasize during class
    - 'This will be on the exam'
    - Review / Key lessons slides after each lecture section

MIS 5121: Upcoming Events
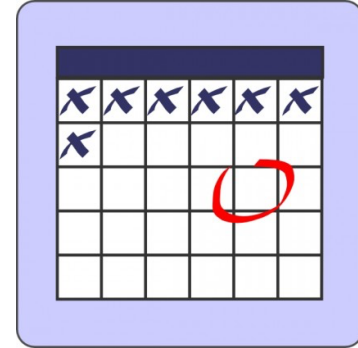
- Reading Assignment 4 - *Due: March 8*
- Reading Assignment 5 - *Due: March 15*
- Exercise 3 (Journal Entries) - *Due: March 19*
- Reading Assignment 6 - *Due: March 29*
- Class Visitors: auditors - *March 30*
  - Ernst & Young – auditing manager and SAP subject matter expert
  - Discussion / Q&A format (~30 minutes)
  - Gather discussion topics and your ?'s next week

External Financial Reporting regulations

Balance Sheet

P & L

Notes

Other Reg's

FDA etc.

Organization's Objectives & Policies

Performance & Policies

Arise through

Must be observed / achieved in

Business Processes

Procurement → Production → Order to $$ → Finance → IT → Quality → Logistics → HR → ...

Contain

Risks

Assertions

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

Errors & Fraud

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

Minimized by

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)
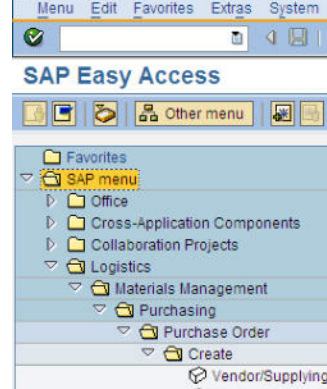- Automated testing and monitoring of business processes, KPIs, etc.

Security: SAP Authorization Concept

SAP Environment Security Components
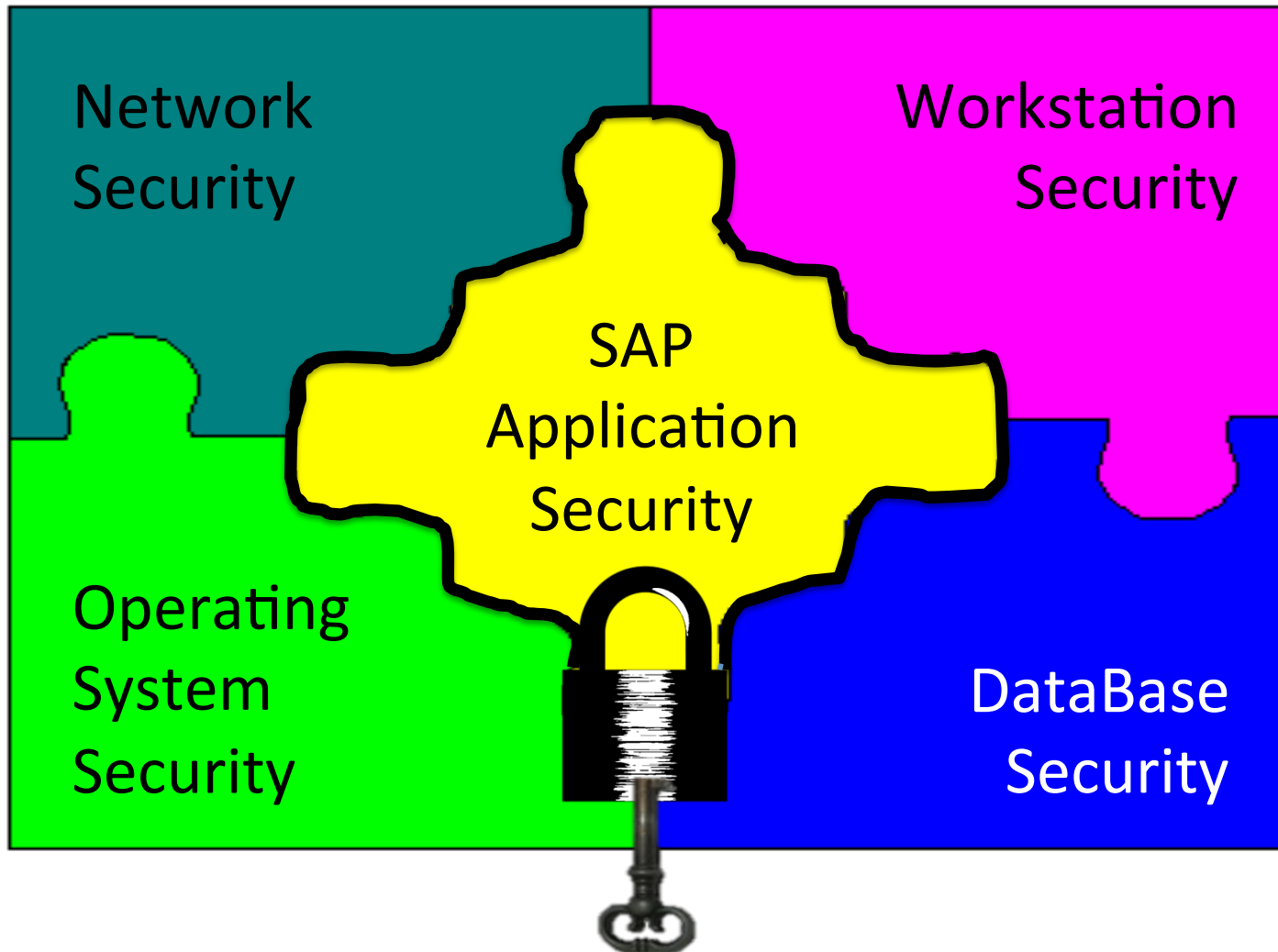
SAP Security Terminology

- **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

    Consult German Dictionary

    1 – Create
    2 – Change
    3 – Display
   4, 5 Group Display

    N – New version
    Of existing transaction

  - S_ALR... : System Report
  - Z...; Y.... : Custom transaction (non-SAP development) Typically company has naming convention

SAP Security Terminology

- **<u>Authorization Object:</u>** 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 **AND**ed 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

Lock: **Authorization Object**

Core: **Authorization Checks**

Tumblers: **Authorization Fields**
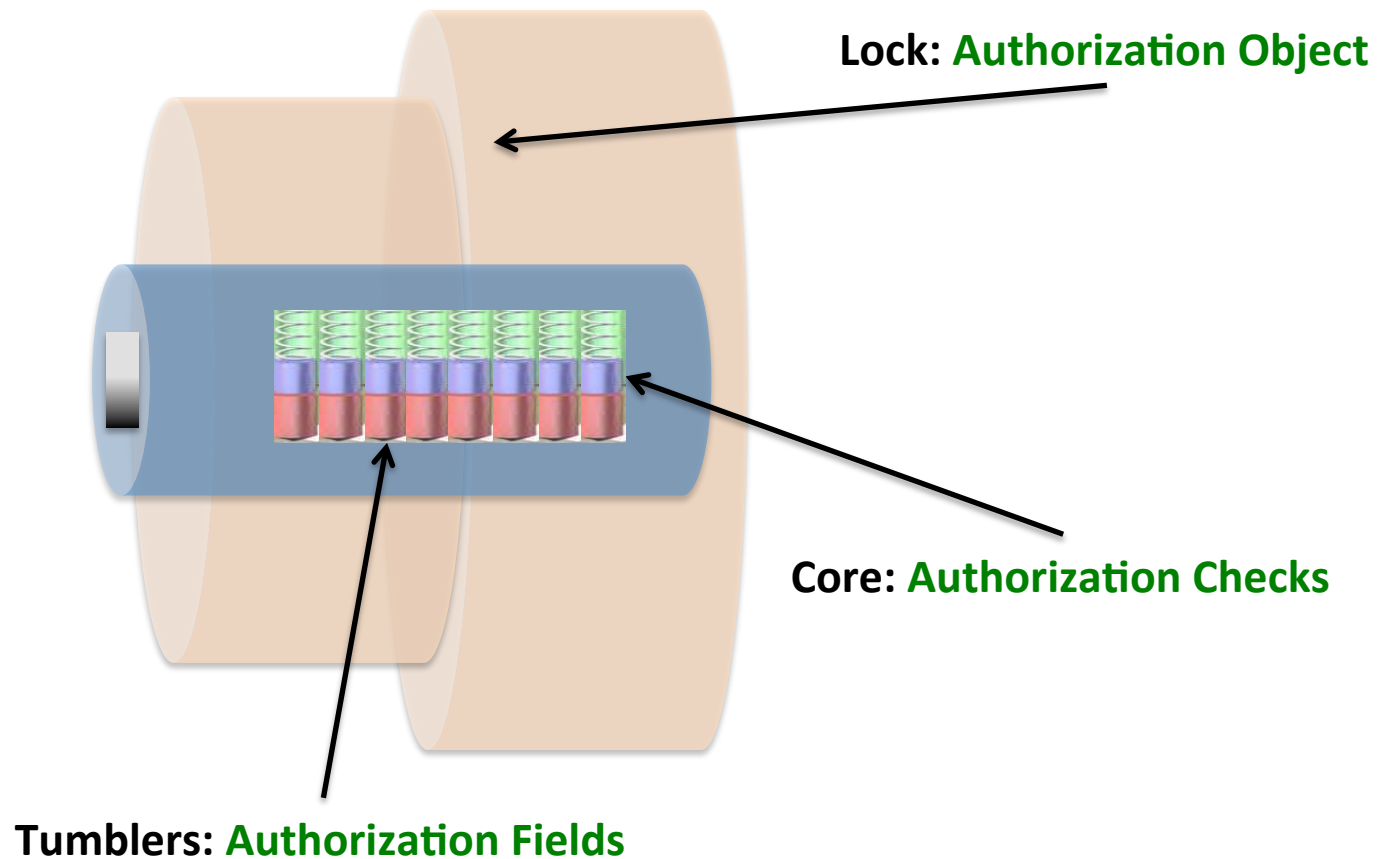
SAP Terminology

SAP Security Terminology

- **<u>Authority Check:</u>** (the lock 'core')
  - Program statement(s)
  - Checks the user's authorizations buffer for fields and values (based on the referenced authorization object)
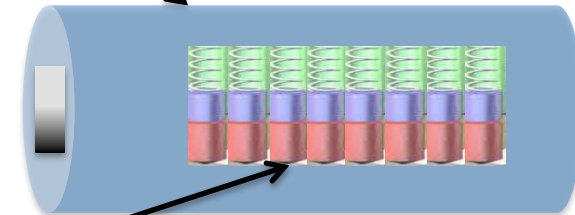
- **<u>Authorization Field</u>:** (the lock 'tumblers')
  - 1-10 fields used in each object / check.
  - Examples:
    - Activity: function to be performed (create, change, display, etc.)
    - Document type (e.g. sales, purchasing, production, …)
    - Enterprise Hierarchy node (e.g. company, sales 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 Terminology

- ## __Authorization:__
    - 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

Lock: Authorization Object

Key Slot

Key

Core: Authorization Checks

Authorization Values
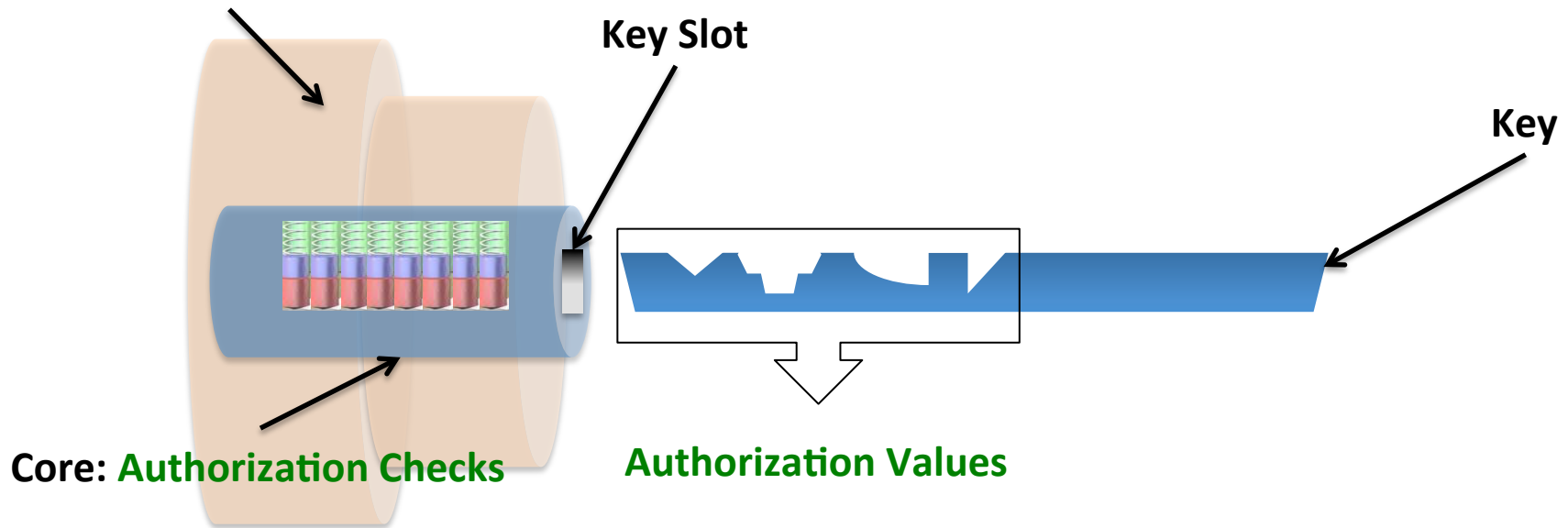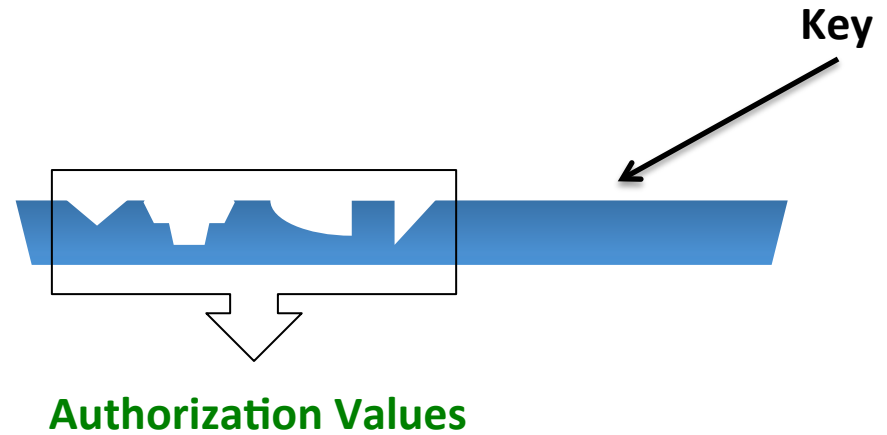
SAP Security Terminology

- **<u>Role:</u>** 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

- **<u>Profile:</u>** 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 Security: Key Concept

Lock: Authorization Object

Key Slot

Key

Core: Authorization Checks
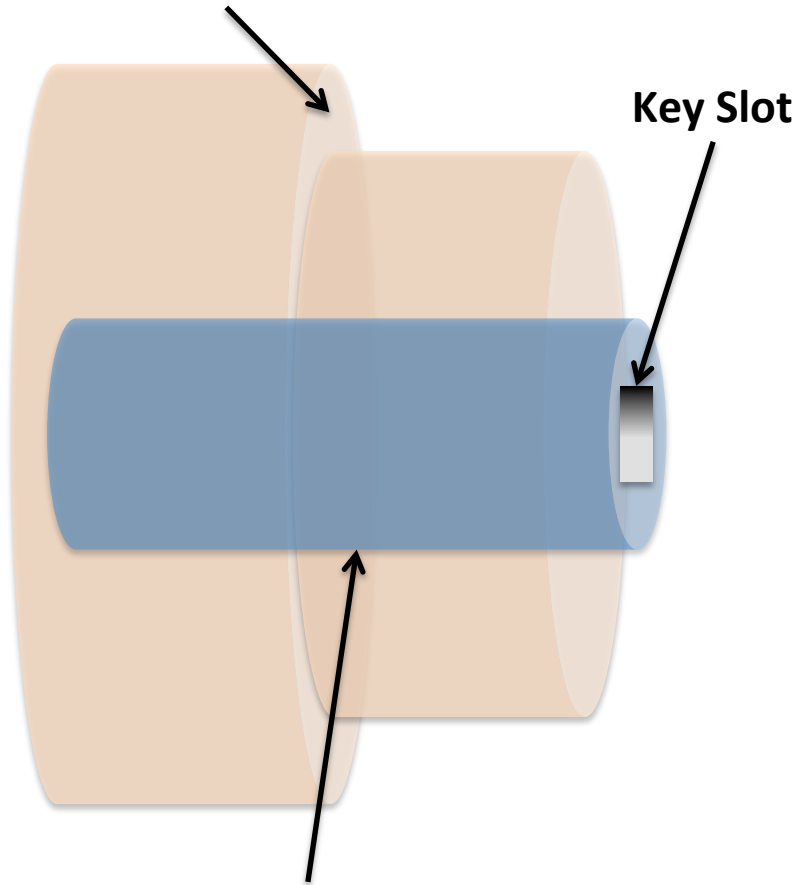
Authorization Values

SAP Terminology

SAP User IDs

Transaction: **SU01 / SU01D**

Select Role: 'user ID'

SAP User Roles / Profiles

Transaction: SU01 / SU01D - 'Roles' and 'Profiles' tabs

Application Security: Example
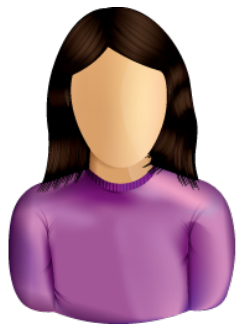
User

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
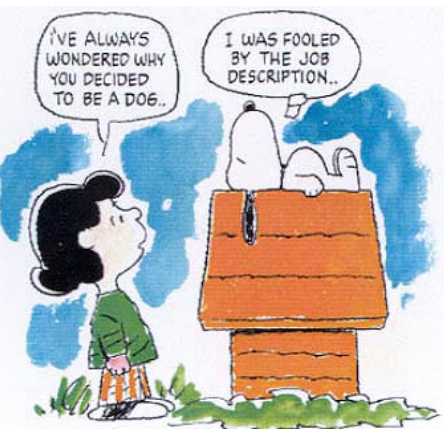
SAP Security: Business vs. Technical View

Business View	SAP Technical View
❑ Employee - - - - - - - - →	❑ User Master Record
❑ Job - - - - - - - - →	❑ Roles / Profiles
❑ Task - - - - - - - - →	❑ Transaction Code in roles / profiles
❑ Privileges - - - - - - - - →	❑ Authorizations
• Activities	• Object
	❑ Fields
• Business Structure	• Values
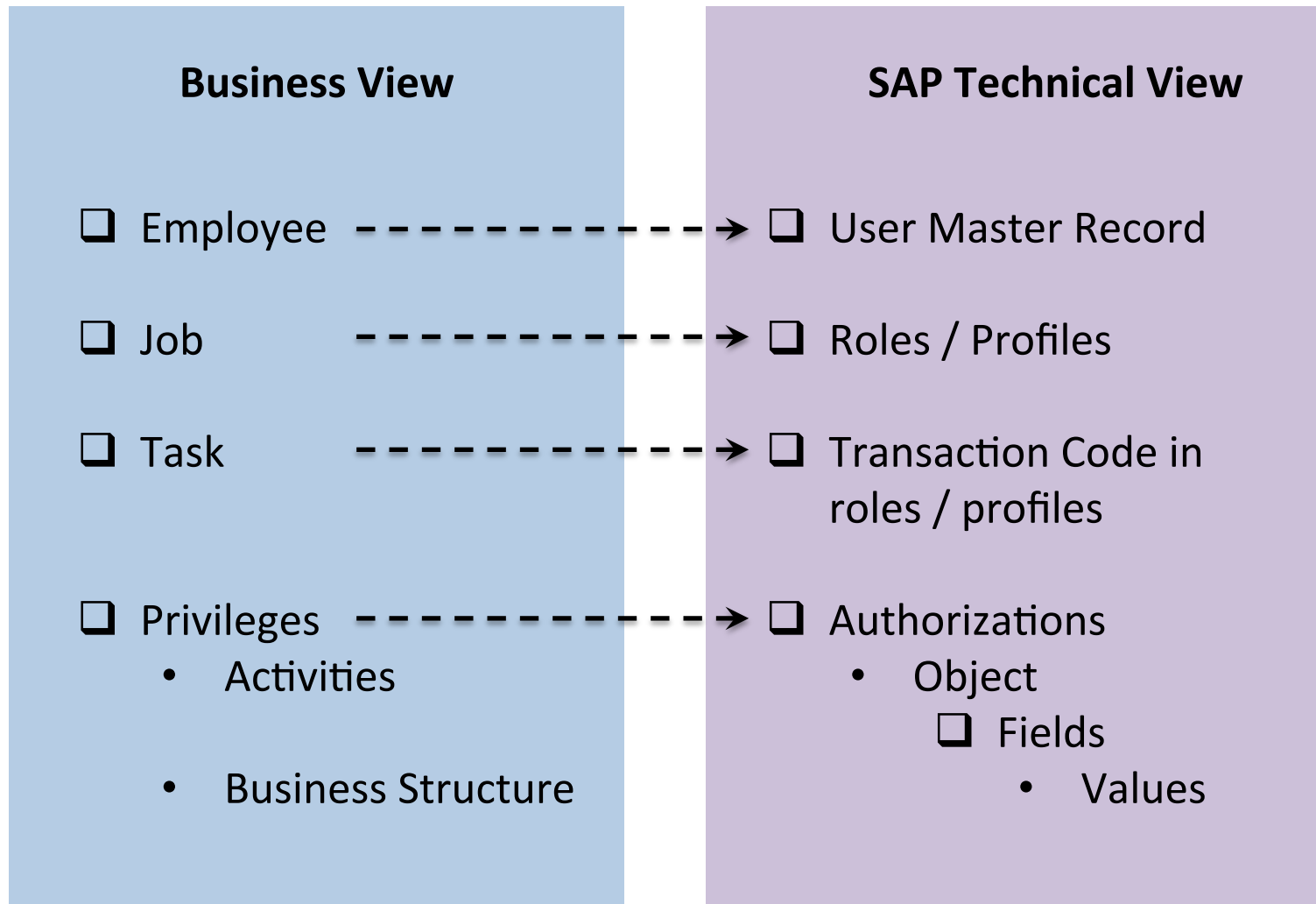
SAP Security: Logic to Access
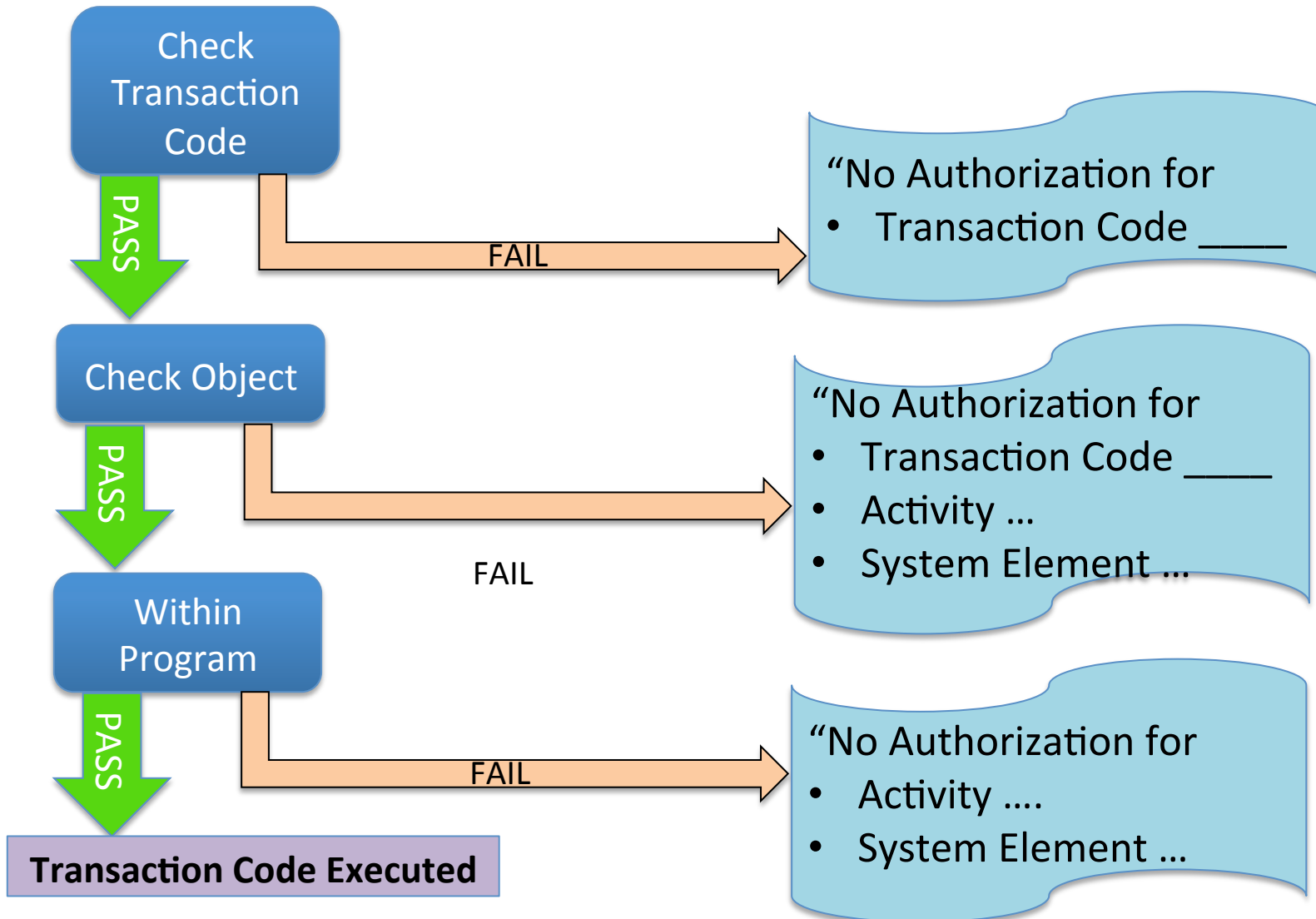
SAP Security: Diagnosis
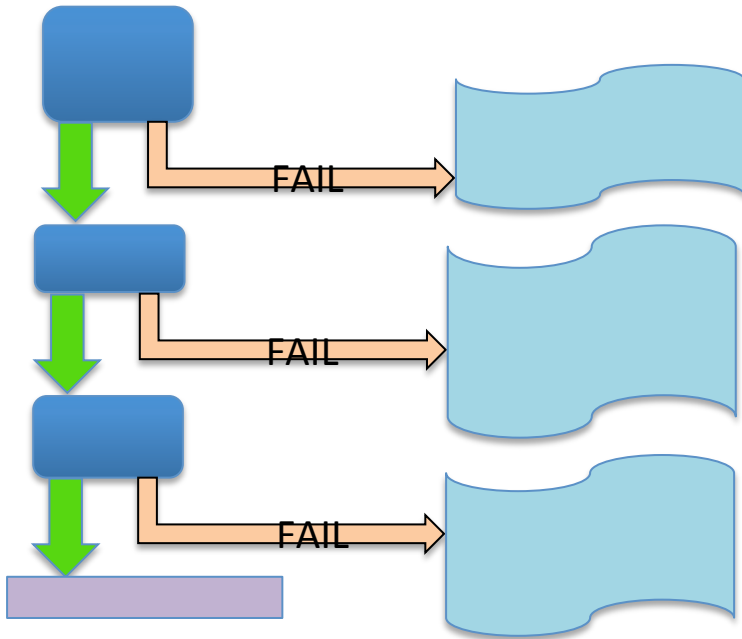
- **<u>SU53</u>:** Display authorization data for failed checks
  - Identifies transaction checked (note sometimes SAP transitions to other transactions e.g. during drill downs)
  - Authorization objects and fields checked and values used / available
  - Helps identify 'missing' authorizations

Authorization check failed
- Date 03/05/2015 Time 09:47:20 Transaction SMEN
  - Authorization Obj. S_USER_PRO User Master Maintenance: Authorization Profile
    - 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

Company Code: Core SAP Definition

- **<u>Company:</u>** central organizational unit of external accounting within SAP
  - Definition:
    - Usually corresponds to a legally independent company
    - Should be depicted from a tax law, commercial or other financial accounting view

  - Configuration:
    - Defined / stored in table T001
    - Each company has exactly one domestic currency
    - Active company or not
    - Do NOT delete company codes

    - BUKRS – technical name

The Company

Finance: Critical Master Data

- **Chart of Accounts**
  - Centrally defined but individual company differences are possible:
    - Nature of the company (e.g. holding company vs. operating company)
    - Country
  - Currency:
    - Business transactions can be entered in foreign currencies based on exchange rates defined
    - Need policies about definitions / maintenance
    - Commonly imported from central banks
    - Monthly exchange rates are common – some countries (e.g. Brazil) require daily rates

  - Finance views of core master data:
    - Materials   (e.g. valuation)
    - Customers   (Pay from information, Credit)
    - Vendors   (Payment information)

Finance: Transaction Data Timing

- Real-Time
  - Routine Transactions (as result of business processes)
    - Posted 'real-time'
    - But What is timing from event occurring vs. when entered in system?
  - Captured in fiscal year posting periods (usually only 1 'open' for real-time events at a time)
  - Important to verify for _____ assertion claim?
  - Control focus: application controls
- Manual postings
  - Non-routine: Accounting / Finance entered based on own judgment / expert opinion
  - SAP has tools for Recurring entries (e.g. monthly rent payments)
  - Closing entries (later)
  - Control focus: Substantive audit (check individual transactions)

Finance: Document Parking

- Used to enter / store (park) incomplete documents in SAP
  - Parked documents are not posted documents
  - Bypass extensive entry checks
  - Complete / check / post at later date
  - Values in parked documents can be used in some reports
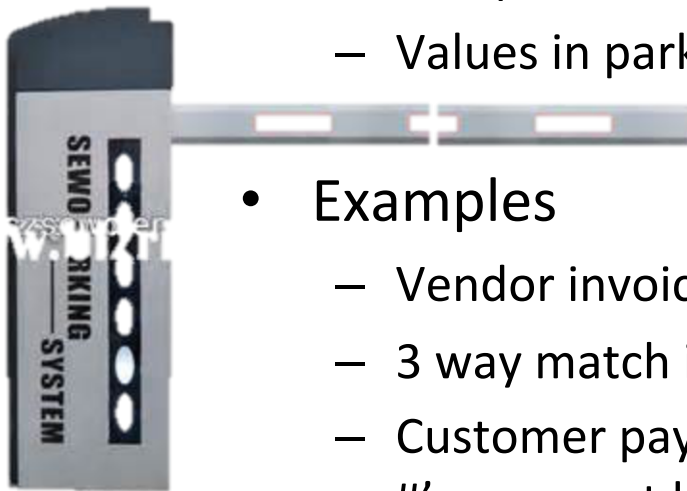
- Examples
  - Vendor invoices missing needed information (e.g. PO #)
  - 3 way match is incomplete
  - Customer payments missing needed information (e.g. invoice #'s payment linked to) or incorrect taxes
  - Customer payments pending payment discount approval
  - …

Finance: Document Parking
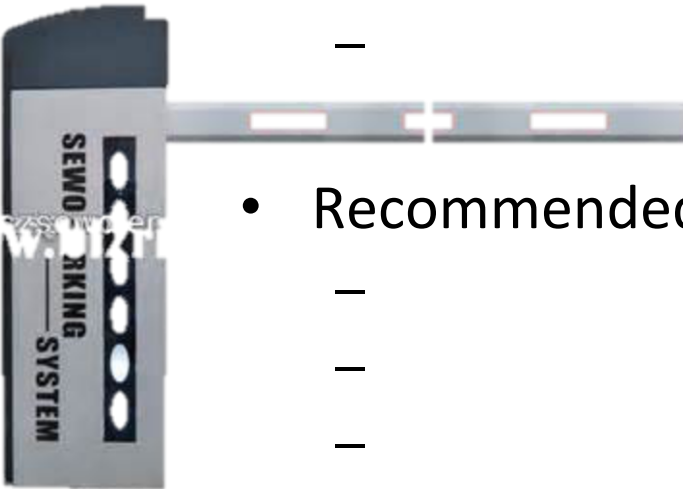
Used to enter / store (park) incomplete documents in SAP

- Risks
  -
  -
  -

- Recommended Controls
  -
  -
  -

Finance: Document Parking

Used to enter / store (park) incomplete documents in SAP

- Risks
  - Occurrence / Existence assertions unclear (does transaction really exist?)
  - Incorrect transactions included in results
  - If uncontrolled, continued eroding validity of data / assertions

- Recommended Controls
  - Parking policy: when allowed, how resolved
  - Configuration to trigger workflow (rules based)
  - Active monitoring of parked documents (#, value, aging) to assure in control (not growing, not becoming older)
  - Audit and decision making of select entries (e.g. high value, oldest)
  - Segregation of duties
  - …
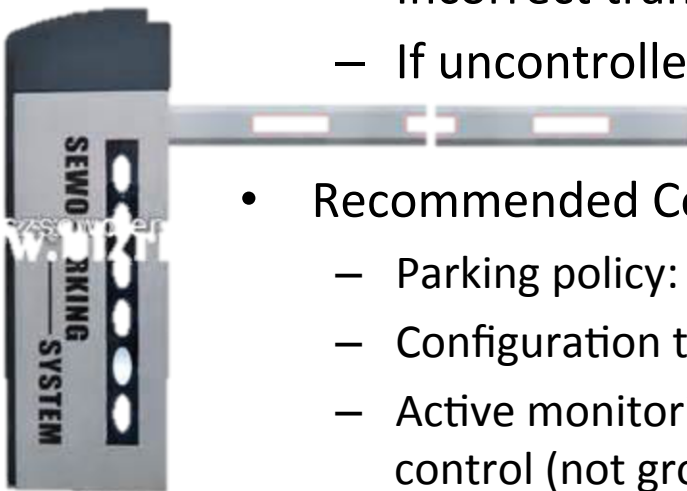
Finance: Document Parking

Configuration

- Trigger workflow (rules based)
- Financial Accounting (New) -> .. Global Settings (New) -> Document -> Document Parking …

Change View "Posting Date for Document Parking": Over

| Menu | | ◀ | Save | Back | Exit | Cancel | System | Change -> |

C...	Company Name	City	Prk pst dt	⊞
DE	Global Bike Germany GmbH	Heidelberg		
US	Global Bike Inc.	Dallas		

Procedure for Setting the Posting Date (1)

Posting date for parking	Short Descript.
	Posting date is not changed during posting
1	Posting date is changed to system date
2	Same as 1 only if the posting period is closed

Finance: Tolerance Groups
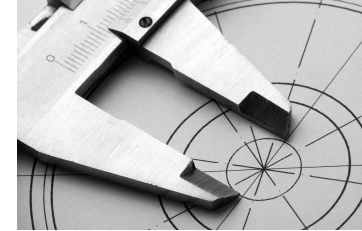
Company / User Specific

- Financial Accounting (New) -> .. Global Settings (New) -> Document -> Tolerance Groups… (or table T043T)

Change View "FI Tolerance Groups For Users":

Menu | Save | Back | Exit | Cancel | System

Group
Company code: US00 Global Bike Inc. Dallas
Currency: USD

Upper limits for posting procedures

Amount per document	500,000.00
Amount per open item account item	100,000.00
Cash discount per line item	5.000 %

Permitted payment differences

	Amount	Percent	Cash discnt adj.to
Revenue	100.00	10.0 %	10.00
Expense	100.00	10.0 %	10.00

Finance: Tolerance Groups
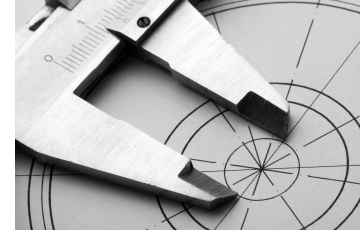
Business Partner / User Specific

- Configuration
  - Financial Accounting (New) -> Accounts Receivable and Accounts Payable -> Document -> Business Transactions -> Incoming Payments -> Manual Incoming Payments -> Define Tolerances (Customers)
  - Financial Accounting (New) -> Accounts Receivable and Accounts Payable -> Document -> Business Transactions -> Outgoing Payments -> Manual Outgoing Payments -> Define Tolerances (Vendors)

Finance: Tolerance Groups
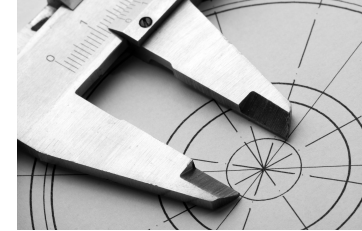
Business Partner / User Specific

- Table View:
  - T043G: Defined tolerance groups for Customers / Vendors
  - T0 43GT: Business Partner Tolerance Group Names
  - T043: Assign tolerance groups to users (e.g. Accounting clerks)
  - LFB1: Vendor Master (Company View)
  - KNB1: Customer Master (Company View)

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: 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)

CAUTION

Finance: Reconciliation

- ## Consistency Checks
  - SAP standard transactions
    - Sum of documents matches vendor, customer & G/L account totals
    - Results maintained on 'logs'
    - Manufacture

- ## Balance Confirmations:
  - Validate vs. external data
    - Bank statements / balances
    - Balance confirmation letters to business partners (vendors and customers)
  - Compare G/L balances and Ledgers
    - Standard SAP transactions / reports
    - Relatively low risk due to direct postings of activity

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**

Reading Assignment Questions:

➢ How to identify if the transaction is posted in real time in ERP application?

➢ Document parking seems to create overhead and opportunity for lapses. Do the risks outweigh the strengths? Is this a high-risk area requiring greater discipline and focus?

➢ *Reconciliation in month-end closing is more like a detective control, is there any preventive control in closing operation?*

➢ Should the company have the same amount of control between General Ledger Accounting. Asset Accounting and Account Payable Accounting since only General Ledger Accounting is directly related to external financial reporting?

Remaining Exercises

- # Exercise 3: Journal Entries   <u>Due:</u> *March 19*

- # Exercise 4: Segregation of Duties   <u>Due:</u> April 1

- # Final Case: Risk / Control Matrix   <u>Due:</u> April 30

- Work for these will be completed by 2 person Teams
  - Random Team Assignments (My wife did the choosing)
  - Tried to pair those with some accounting background with someone who does not
  - One (1) submission by each team
  - Share the grade

Teams

Name - Full	Team	Presentation
Mcginn Kevin J.	1	23-Apr
Roberts, Brandon J	1	**16-Mar**
Bazzine, Ibtissam	2	13-Apr
Nguyen Anh	2	30-Mar
Prabhakar Kalyani	3	20-Apr
Zhu Ziwei	3	6-Apr
Nguyen Hai (Harvey)	4	9-Mar
Rams Kacper	4	9-Mar
Sasna Pavel	5	13-Apr
Thomas Paul O.	5	27-Apr
Patel Deepan I.	6	23-Mar
Xu Dongxue	6	16-Mar
Ronca David A.	7	**16-Mar**
Zhou Jingyi	7	6-Apr
Eves David	8	30-Mar
Weiss Corey R.	8	20-Apr
Okaro Lucia F	9	27-Apr
Pagliaro Paul S.	9	23-Mar
Cinti Leandro H	10	30-Mar
Roth Michael A	10	13-Apr

Break Time

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

  – This Class *(March 9)*: Steps 1 – 3 (Manual steps)

  – Next Class *(March 16)*: Step 4 (SAP steps)

  – *Due March 19* *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

Finance: Validations

- Validation: to check if organization specific logical rules for accuracy
  - Configurable coding of organization / business specific 'rules'
  - Applied at header data entry, line item data entry or at save
  - Custom developed code via user exits also possible
  - Substitutions can be handled similarly

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: Information System → General Report Selection → Financial Accounting → General Ledger Reports → Document → General → Compact Document Journal → Compact Document Journal* **(S_ALR_87012289)**

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

- *Line Item Journal: Information System → General Report Selection → Financial Accounting → General Ledger Reports → Document → General → Line Item Journal → Line Item Journal* **(S_ALR_87012291)**

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.