MIS 5121: Business Processes, ERP Systems & Controls
Week 5: *Inventory Control, OTC Process: Shipping*
Video: Record the Class
Exam 1: October 7 - 9

First exam conducted by Blackboard. Some specifics:

• Available to take from Friday October 7 thru Sunday October 9 (midnight)
• Questions relate to course content (on-line and from class) through Week 5 (October 3)
• Maximum of 40 minutes time to complete exam
• Exam is 21 questions (variety of formats i.e. Fill in blank, multiple choice)
• Some of the questions relate to a real-world like small business case (see blog post for link). You are invited to pre-read, print, etc. prior to exam.
Exam 1: October 7 - 9

First exam conducted by **Blackboard**. Other specifics:

- I plan to have the exam graded by end of day Wednesday October 12
- You can view details of the graded exam by end of day Monday October 17

**Note:** Class on Monday October 17 will be held in Alter Hall room 603 as well as on-line.
Discussion

- Something really new, different you learned in this course in last week

- Questions you have about this week’s content (readings, videos, links, ...)?

- Question still in your mind, something not adequately answered in prior readings or classes?
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.
Inventory: Not all the same

- Bulk vs. Packaged (liquid vs. dry)
- Produced vs. Purchased
- Finished vs. Intermediates vs. Supplies
- Trading Goods (purchased to be resold)
- Valued vs. non-valued
- Owned vs. not (e.g. leased, responsible for)

Impacts
- Valuation
- Handling (e.g. related configuration)
- How Counted
Inventory: Quantities

Inventory Record Accuracy (IRA): Does Physical inventory match system records

- Material / Batch
- Quantity
- Location

Methods: Physical Counting

- Periodic (e.g. yearly, quarterly, ...) Frequency can depend on risk (e.g. value)
- Complete Count?
- If ‘miss’ someone else Adjusts Records based on Count
Inventory: Quantities

Inventory Record Accuracy (IRA): Does physical inventory match system records

Methods: Cycle Counting

- **Continuous** counting of sections of inventory
- Hit or Miss based on tolerances (e.g. zero for package, +/− for bulk)
- If ‘miss’ someone else Adjusts Records based on Count
- Root cause analysis of reason and correction for ‘miss’
- Track IRA % (# Hits / # checks)
- Acceptable alternative for full physical counts

Common Issue: timing of physical moves vs. system recording
Inventory: Values

**SAP:** Valuation Control

- Controlled by Material Master
- Non-Split Valuation
  - One (1) value by:
    - Material
    - Company or plant (depending on configuration)
  - Valuation Methods
    - Not-valued (e.g. not owned, value is expenses vs. asset)
    - Standard Price (constant based on how procured / produced)
    - Moving Average (changes based on delivered price)
Inventory: Material Movements

Configuration (movement type) in SAP that controls:

- Account (G/L) determination of transactions (Key control)
- How value changes are calculated
- How quantity changes are calculated
- How transacted (inside other transaction or stand-alone)
- Transaction: OMJJ, Table: T156

**SAP transactions**

- Often imbedded in other transactions / activities
  - Goods receipt (e.g. PO Receipt, Production reporting)
  - Goods Issue (e.g. PGI in delivery processing)
  - Transfers
An Auditor With An Attitude of Professional Skepticism... This Guy Has CPA Written All Over Him!

WELL, IT'S INVENTORY TIME AGAIN - YOU DO THE ROCKS AND I'LL DO THE STICKS.
Business Process Controls

Order to Cash - Order Processing: Prices
(from last week)
Create Order Processing Flow

Pre-Sales

Customer Master
- Sold-to
- Ship-to
- Other Partners
  - Basic, Company, Sales Org Views

Customer Material Info Record (CMIR)

Material Master
- Basic View
- Plant View
- Sales Org View

Determining ATP

Determining Credit Check

Determining Global Trade

Determining Price

Determining Output

Determining Route
Pricing & Conditions

• All components of ‘Value’ (external and internal)
  – Price
  – Discounts / surcharges
  – Rebates / Commissions
  – Taxes
  – Costs
Pricing & Conditions

• Condition Technique (used in other areas of SAP)
  – Configurable
  – ‘Price’s stored in condition records
    • By Key sequence (grouping of values) e.g. sales org, customer, material, ...
    • Can include scales (price breaks)
    • Effective date and expiration date
  – Define ‘rules’ for finding applicable condition record
    • Sequential search (most specific to most generic) search using condition key values from sales order

• Next slides: GBI order -> Pricing Analysis
### Access details 040 (PR00)

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### Pricing date

| Pricing date | 06/16/2014 |

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Access

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No condition record was found for this condition using the document data.
Business Process Controls

Order to Cash - Shipping (OTC, O2C)
Order to Cash Process Flow

- Pre-Sales
- Customer Order
- Create Delivery
- Create Shipment
- Picking
- Goods Issue:
  - Update Inventory
  - Post General Ledger
- Create Invoice
- Shipping Documentation
- Payment
Order to Cash: Document Flow

Pre-Sales
- Inquiry
  - Quote
  - Contract

Sales (Scenarios)
- Free of Charge
- Consignment

Procurement
- Shipping Cost

Shipping
- Shipment
- Delivery

Billing
- Invoice
  - Credit Memo
  - Debit Memo

Financial Accounting
- Payment

Materials Management
- Debit / Credit Memo Request

Payment
- Materials Management

Financial Accounting
- Shipping Cost

Procurement
- Shipment

Shipping
- Delivery

Billing
- Invoice
- Credit Memo
- Debit Memo

Financial Accounting
- Payment

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Procurement
- Delivery

Billing
- Invoice
- Credit Memo
- Debit Memo

Financial Accounting
- Payment

Materials Management
- Debit / Credit Memo Request

Payment
- Financial Accounting
Order to Cash: Shipping

- **Key Shipping Functions**
  - Delivery (1 plant -> 1 ship-to -> 1 day)
  - Shipment (truck Movement)
  - Post Goods Issue (PGI)
  - Shipping Cost (logistics Payable)
Delivery (Ready for the truck)

• Delivery Document (1 plant -> 1 ship-to -> 1 day)

• Basis for Shipment, PGI

• Create: manually, automatically, batch

• Picking
  – Assign batch, get from storage location / bin

• Packing (optional)
  – Add weight for packing materials used to ship
Shipment (Logistics Movement)

- Linked to 1 or more deliveries
- Transportation Planning & Shipment completion
- Contains logistics Info: provider, equipment, dates, ...
- Can have multiple ‘legs’
- Integrated form of work flow: Shipment stages
  - Trigger outputs
  - Trigger PGI
  - Status Tracking
Post Goods Issue (PGI)

• **When**: Truck / shipment leaves (no longer in possession)
• Goods Issue posted only when these conditions met
  – Delivery Data is complete (config: Completion Rules)
  – Picking is complete
  – If Warehouse Management (WM): item status is complete
• **What**: is Posted
  – Inventory movement (remove)
  – Cost of Goods Sold (using values in material master, etc.)
• Updates following:
  – Delivery (VL03N)
  – Linked order document (VA03)
  – Requirements (MD04)
  – Billing Due List (VF04) – via Delivery status
    (Does not post revenue: Billing Does)
Shipping Cost

• Logistics process equivalent of Goods/Service Receipt in the Procure to Pay process
• Creates accrual for freights payable process
• Can support accurate delivered cost data for analysis
  – Because calculated at detailed shipment transaction level
  – If costs are accurate
Breakout Activity – Rules

• Break into teams – max of 5 people / team
  – Diversity a must.
• Assignment – return via WebEx Notes or Word Document
• How: WebEx breakout?
• Time: assigned today 20 min (including break)
  – Start back **on-time**
Order to Cash Process: Shipping

What Could go Wrong?
- ____________
- ____________
- ____________
- ____________

What Controls would you Implement to address?
- ____________
- ____________
- ____________
- ____________
- ____________
Report Back
Inventory Control: Common Risks

• Theft
• Lost Inventory / Damage
• Transaction Errors
  – Human Errors
  – System caused (e.g. BOM accuracy)
• Material Life Cycle (e.g. obsolete / scrapping) and Shelf Life
• Segregation of Duties (physical custodians vs. accounting record custodians)
Inventory Control: Common Controls

- Segregation of Duties (physical vs. record custodian)
- Inventory policies (Written, taught, monitored)
- Test inventory transactions (shipping, production, procurement, transfers, etc.)
- Inventory Record Accuracy: physical or cycle count
- Timing
- Match control / methods to size of risk (high value)
Order to Cash (b) : Common Risks

Shipping

• Manipulate client names and addresses on shipping documents
• Service/good Issue
• Shipping Poor quality stock vs. 1st quality issued
• Shipment of unfinished product
• Shipment of product before customers desire or agreed to delivery
• Shipment to customers that did not place an order
• Shipment of more product than the customer ordered
• Recording shipments to the company’s own warehouse as sales
• Shipping often done by 3rd party Logistics personnel
Order to Cash (b) : Common Controls

Shipping

- On-going review of shipping / delivery status
- Backlog of shipping monitored and controlled
- Inventory accuracy vs. shipping
- Use pre-numbered shipping documents
Order to Cash Exercise

• Primary learning objectives are:
  – Experience the steps in a typical sales transaction
  – See how an ERP system handles a typical sales transaction
  – Work through the procedures involved in a test of transactions
  – Look at a special feature of the sales and distribution (SD) module of SAP
  – See the integration between Sales and Distribution (SD) and financial accounting (FI) modules of SAP
Exercise 2: Order to Cash

• Agenda
  – Last Class *(September 26)*: Steps 1 – 8
  – This Class *(October 3)*: Steps 9 – 15
  – Next Class *(October 10)*: Steps 16 – 23

  – *Due October 13  11:59 PM*: Assignment Submission
Exercise 2: Order to Cash

• Task 6 – Create a Sales Order
  – Menu: Logistics ▶ Sales and Distribution ▶ Sales ▶ Order ▶ Create
  – Transaction: VA01

• Task 7 – Display the Sales Order
  – Menu: Logistics ▶ Sales and Distribution ▶ Sales ▶ Order ▶ Display
  – Transaction: VA03

• Task 8 – Display the Document Flow for the Sales Order
  – Within transaction use menu: Environment ▶ Display Document Flow
  – Transaction: VA03

• Task 9 - Check Status of Various Accounts
  – See details of Task 5
Exercise 2: Order to Cash

• Task 10 – Create the Delivery for the Sales Order
  – Menu: Logistics ▶ Sales and Distribution ▶ Shipping & Transportation ▶ Outbound Delivery ▶ Create ▶ Single Document ▶ With Reference to Sales Order
  – Transaction: **VL01N**

• Task 11 - Check Status of Various Accounts
  – See details of Task 5

• Task 12 – Display the Document Flow for the Sales Order
  – Within transaction use menu: Environment ▶ Display Document Flow
  – Transaction: **VA03**
Exercise 2: Order to Cash

• Task 13 – Post the Goods Issue
  – Menu: Logistics ➤ Sales and Distribution ➤ Shipping & Transportation ➤ Outbound Delivery ➤ Change ➤ Single Document (VL02N)
  – Transaction: VL02N

• Task 14 - Check Status of Various Accounts
  – See details of Task 5

• Task 15 – Display the Document Flow for the Sales Order
  – Within transaction use menu: Environment ➤ Display Document Flow
  – Transaction: VA03
Extra Slides
Inventory: Values

**SAP: Split Valuation**

- Material master for each Material / Valuation Type
- Header record for each Material / Valuation Category created
- Moving Average Price only calculation method allowed
- Stock records managed separately for each valuation type
Order to Cash Process Flow: Order Blocks

Pre-Sales

Customer Order

Create Delivery

Create Shipment

Picking

Goods Issue:
- Update Inventory
- Post General Ledger

Billing Block

Create Invoice

Payment

Shipping Documentation

Packing
Order to Cash Functions in SAP

R/3
Client / Server
ABAP/4
## Order to Cash Functions in SAP

<table>
<thead>
<tr>
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<th>SD</th>
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<th>QM</th>
<th>FI</th>
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<tr>
<td>Payment</td>
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</table>
Exercise 2: Order to Cash

• Task 1 – Extend the Material Master Record for Sales
  – Menu: Logistics ▶ Materials Management ▶ Material Master ▶ Material ▶ Create (Special) ▶ Trading Goods
  – Transaction: MMH1

• Task 2 – Extend the Material Master Record for Sales
  – Menu: Logistics ▶ Sales and Distribution ▶ Master Data ▶ Business Partners ▶ Customer ▶ Create ▶ Complete
  – Transaction: XD01

• Task 3 – Set up Credit Limits for the Customer
  – Menu: Logistics ▶ Sales and Distribution ▶ Credit Management ▶ Master Data ▶ Change
  – Transaction: FD32
Exercise 2: Order to Cash

• Task 4 – Check Inventory Availability
  – **Quantity:**
    • Transaction: **MMBE**
  – **Value:**
    • Menu: *Accounting ▶ Financial Accounting ▶ General Ledger ▶ Account ▶ Display Balances*
    • Transaction: **FS10N or FAGLB03**
Exercise 2: Order to Cash

• Task 5 - Check Status of Various Accounts
  – Check Inventory: MM Inventory Quantity
    Transaction: **MMBE (Stock Overview)**
  – Check Account Values: GL Inventory, GL Cash, Sales Revenue, Cost of Goods Sold (COGS), GL A/Receivable:
    Transaction: **S_ALR_87012291 (Line Item Journal)**
  – Check A/P Vendor sub-ledger:
    Transaction: **FBL5N (Customer line item display)**
Exercise 2: Order to Cash

- **Task 16** – Create an Invoice for the Delivery
  - Menu: *Logistics* ▶ *Sales and Distribution* ▶ *Billing* ▶ *Billing Document* ▶ *Create*
  - Transaction: **VF01**

- **Task 17** - Check Status of Various Accounts
  - See details of Task 5

- **Task 18** – Display the Document Flow for the Sales Order
  - Within transaction use menu: *Environment* ▶ *Display Document Flow*
  - Transaction: **VA03**
Exercise 2: Order to Cash

• Task 19 – Locate the Accounting Document Number
  – Menu: Logistics ▶ Sales and Distribution ▶ Billing ▶ Billing Document ▶ Display
  – Transaction: VF03

• Task 20 – Post the Customer’s Payment on Account
  – Menu: Accounting ▶ Financial Accounting ▶ Accounts Receivable ▶ Document Entry ▶ Incoming Payment
  – Transaction: F-28
Exercise 2: Order to Cash

• Task 21 - Check Status of Various Accounts
  – See details of Task 5

• Task 22 – Display the Document Flow for the Sales Order
  – Within transaction use menu: Environment ▶ Display Document Flow
  – Transaction: **VA03**

• Task 23 – Write Down the Journal Entries the System Made
  – Non-SAP Task